FOSTER (J. A.)

ILLUSTRATIONS

AND A

BRIEF DESCRIPTION

OF

James A. Foster's

PATENT UNION

Artificial Limbs.

WITH TESTIMONIALS OF

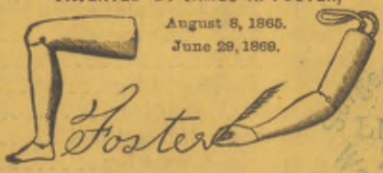
Surgeons, the Press, and those Wearing them

AFTER HAVING TESTED MOST ALL OTHER KINDS.

MANUFACTURED AT

PHILADELPHIA, Pa.,
CINCINNATI, Ohio.
and DETROIT, Mich.

PATENTED BY JAMES A. FOSTER,
August 8, 1865.
June 29, 1869.



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All communications should be addressed to

JAMES A. FOSTER,
911 Chestnut Street, Philadelphia, Pa.
60 West Fourth St., Cincinnati, Ohio,
Or, 172 Jefferson Avenue, Detroit, Mich.

NOTICE.

Any one seeing this notice, who has a relative, friend or acquaintance that has lost a limb, will confer a favor by sending me their address.

AUGUST, 1870. JAMES A. FOSTER.

CONTENTS.

SPECIAL INSTRUCTIONS.

If the following instructions are properly observed, it will save asking many questions and me much time in writing answers, consequently I place them in the most conspicuous place:

HOW TO ORDER A LIMB.

Whenever a patient wishes a limb, he should write, stating the case minutely, where amputated, whether the joints are flexible or not, in fact every particular. A blank, with illustrations and directions, will be sent for measurement, which is to be filled up and returned to the office he wishes to have the limb made at, were it will be placed on file to await its turn.

The blank measure and instructions are so plain that any one who can read figures on a rule can fill it up correctly; all the tools necessary are a rule, a tape line and a pair of callipers. Most every one has a rule or something that has inches marked on it, and if inconvenient to get a tape line, a string can be used and get the number of inches on a rule. If there are no callipers to be had, the diameters may be dispensed with, but it is desirable to have all the measures as full and complete as possible, especially the height from floor to top of knee when sitting, [see No. 26 on the blank measure,] and the lateral diameter of the knee in a sitting position in cases of thigh amputations [see No. 9 on blank measure]. This can be taken with a rule by taking a little precaution, although callipers would be more preferable; then if there were a mistake, I could most always detect it before commencing, but if not discovered until the limb is ready to fit, we will make the necessary alterations free of charge, so that no one need fear to send the measure fearing the limb will be made wrong at their expense. The limb will be commenced in its turn, and at the proper time the patient will be notified to come and have it fitted, which, to be properly done, will require the patient's presence from one to three days, according to the condition of the stump.

When a leg is to be fitted, bear in mind to bring a shoe or boot, such as you wish to wear [the lighter the better], so that the foot may be made to correspond with the natural one.

IS IT NECESSARY TO VISIT THE MANUFACTORY TO HAVE A LEG FITTED?

I am often asked if it is necessary to visit the manufactory to have a leg properly fitted. In reply to such inquiries I would say that from my experience in wearing an artificial leg, and being constantly engaged, practically in making, fitting, repairing and altering over all kinds and descriptions of artificial limbs made by the different manufacturers, and having been almost invariably associated with those that have had them fitted at the manufactory, and by measure since the fall of 1862, I must say that my observations and experience convince me that it is very essential, notwithstanding some manufacturers write and advertise to to the contrary (see fitting artificial limbs by measure on page 19th).

But I would here state that I have the same facilities for taking accurate measures, and that my workmen are hired from the oldest and heretofore the best manufactories, and if any one wishes to try the experiment, after reading what I have said on the subject, I will do my best to make the limb easy and comfortable, and have no hesitation in saying that if any one can do it, I can.

HOW TO PREPARE THE STUMP FOR AN ARTIFICIAL LIMB

This is a subject that patients and, as a general thing, surgeons do not fully understand. Most of them think that when a limb is amputated and the stump healed, that is all that is to be done until an artificial limb is obtained. But such is not the case, however, for the fleshy part of a stump should be reduced in size as much as possible, and as free and perfect action of the stump as is possible should be obtained. A joint should never be allowed to become flexed or semi-flexed if it can be avoided. As soon as the stump is healed, a non-elastic sock made to fit tightly should be worn, or it should be bandaged in order to solidify and bring it to its proper form. It should also be moved as much as possible to keep the joints working freely until a limb is applied.

In cases where a stump is conical, it is sometimes difficult to keep a sock or bandage on it. In such cases an apparatus made to lace up like a corset can be made effectual. A stump should not be compressed hard enough to stop a free circulation or so as to cause any uncomfortable sensation, as a continual gradual compression will reduce it fast enough.

TO THE LADIES.

It sometimes occurs that ladies and young folks, unaccustomed to large cities, wish to go and get a limb, or have an old one altered or repaired, and are afraid to come alone, and often bring some one more accustomed to traveling with them, thus causing an un-

necessary expense. To such I would say that this is entirely unnecessary, for if any such persons will write and state what time they will be in the city, and which railroad or boat they will arrive on, I or one of my workmen will meet them (if they request it) at the depot or steamboat landing. But if from any cause we should miss each other (which is not likely to happen) any one can tell where to find us, and there are always hacks and omnibusses waiting the arrival of every train at the depot ready to convey passengers to any part of the city, at a cost of only about fifty cents. The only precaution necessary is to remember the name and number of the street you wish to go to, and there is no danger of the least trouble whatever.

All such persons will receive courteous and kind attention, and also every assistance desired in obtaining such boarding places as they wish while stopping in the city.

REPAIRING AND ALTERING OVER ARTIFICIAL LIMBS MADE BY OTHER MANUFACTURERS.

Those having artificial legs made by the hertofore best [or any other] manufacturers, and have been continually troubled with broken heel, side and front cords, or feet, ankles, springs, or with loose, rattling ankle joints, (and the rest of the leg good) can have it cut off just above the ankle joint, and my *patent union ankle joint* and foot applied and warranted at about half the cost of a new leg. [See certificate of Mark Flanigan, page 24.]

Those that have artificial limbs that they cannot wear [caused by bad fitting or stump shrinking, or any other cause,] can have them newly and satisfactorily fitted or otherwise altered, so they can be used with ease and comfort, by applying to either of my manufactories.

As my workmen are men that have had a large experience in working for the (heretofore) best artificial limb manufacturers in America, I am prepared to repair and fix, in any way or shape, or alter over all kinds of artificial limbs, of every manufacturers' make, on short notice, on reasonable terms and in the most durable and satisfactory manner, at either of my manufactories.

TERMS OF PAYMENTS.

I am often asked what are the terms of payment for an artificial limb.

In reply I have to say that as most of our work is done for strangers living at a distance, and as an artificial limb made for one will not fit another person without a heavy expense to me in altering it, I have adopted the same rule as all other first class artificial limb manufacturers, to wit: that twenty to twenty-five per cent of the purchase money must accompany each order for a new limb (except Government orders,) before the limb will be so far completed but what it could be easily altered for another, in case the party ordering it should fail to come after it. When the limb is fitted the balance is considered due. All bills, either for new work or repairing, are payable at the office, and any bills sent away by express will be marked C. O. D., and charged with the express charges on return money. Money can be sent safely either by post office orders, draft on New York, or by express.

J. A. FOSTER.

HOW TO GET THE BEST ARTIFICIAL LIMB WITHOUT MONEY AND A VERY LITTLE TROUBLE.

I have effected a contract whereby persons wanting an artificial limb can procure a superior article by getting subscribers to the *Western Rural*, one of the best weekly agricultural and family papers published in the world.

Any person having lost a limb and wishing to get an artificial one in this way, can write to H. N. F. Lewis, publisher of the Western Rural, at either Chicago, Ill., or Detroit, Mich., and state their intentions. He will then forward sample copies and premium list free, and give one-half of the entire receipts on all subscriptions at the club rate ($2.00 per year), procured and forwarded to him, *in cash orders*, for an artificial limb at the regular price!

As fast as the names and money are secured, they should be forwarded to Mr. Lewis, with name and post office address of each subscriber. It is not necessary to have them all at one post office, for the paper will be sent to as many post offices as is necessary. Money sent to Mr. Lewis, either by draft on New York, by post office order, or by express, will be at his risk, and on all sums over ten dollars he will pay the expense of sending.

If the person does not get subscribers enough to pay for the limb, he will receive an order at the rate of *one dollar for each subscriber*, which will be received by me as *part payment*, and the balance can be paid at the office where the limb is made.

Never before were such liberal inducements offered to those who have been so unfortunate as to lose a limb to procure the *very best* kind of an *artificial one*. The offer is such that any deserving person in need can, with a very little exertion, procure one of the very best kind. I believe, with this very liberal offer, there can be no excuse to be hobbling about on crutches, or drag out a miserable existence on an old fashioned peg leg. I believe there is hardly a person in the country who would refuse to subscribe to aid an unfortunate person in such an object, even if they should not get the value of their money in the paper.

The *Western Rural* commenced its Eighth Volume, January 1st, 1870. It has been received with emphatic approval by both Press and People, and now finds its way regularly to more than 50,000 firesides, and upwards of 250,000 readers, embracing nearly every post office in the Western States. The publisher will spare no effort to make it constantly more acceptible to its readers.

LATER AND STILL BETTER!—A NEW PAPER!

Since the foregoing was in type, Mr. Lewis has started a new idea in the newspaper line, which the papers speak highly of. The Chicago *Evening Post* says:

"The Young Folks' Rural."—H. N. F. Lewis, Esq., the well-known publisher of that admirable weekly, the *Western Rural*, has projected a new rural and literary journal, under the title of the *Young Folks' Rural*. It is intended especially for the boys and girls in their "teens," the young men and young women. Prizes are offered to young writers. Altogether it is a new thing in journalistic ventures, and will create a stir among the Coming Men and Women. Mr. Lewis is just the man to make it a "big thing."

The subscription price of this paper is $1.00 per year, and the *Western Rural* $2.00, and *one-half* of the whole sum raised by Mr. L. on subscriptions for either or both papers will be retained in orders for my limbs, which will be as good to me as *cash*. The new paper is something adapted to every family and to all parts of the United States.

JAS. A. FOSTER.

PREFACE.

In offering this edition to the maimed, I merely wish to show the *improvements* I have made in Artificial Limbs, and the advantages I possess over other manufacturers for making such improvements. Art can very closely *imitate*, but, of course, it can never *substitute* nature itself; but by repeated experiments, applied with skill, and a desire to aid the afflicted, (as well as myself,) I think I have achieved a wonderful degree of success in this direction.

I know that the attention of the ingenious and humane has long been directed to the construction of a substitute for a lost limb—something that should possess symmetrical beauty and graceful movement, combined with durability. For some time before I suffered an amputation above the knee, which occurred February 15th, 1860, I felt a great interest in these efforts, and when it was ascertained for a certainty that I must have my limb amputated, the anxiety with which I watched and hoped for their success cannot be expressed.

I might write a voluminous and very interesting history concerning the introduction and uses of artificial limbs, but it would all tend to little practical importance. I will mention, however, that artificial limbs were first introduced by Verdiner, a learned Dutch surgeon, as early as the year 1696. Since that period many inventions and improvements have been made until crutches and the old fashioned straight stick or peg leg have nearly become obsolete.

Those that have given this branch of mechanical surgery their attention have been from almost every occupation in life—from the mechanic to the doctor—so self-styled M. D., LL. D., &c.—and adventurous speculators. I wish it borne in mind that I claim no such title to this profession as M. D. or LL. D., but what I do claim is that I was a practical mechanician before I lost my limb, and have since (before establishing for myself) served an apprenticeship at the business of manufacturing artificial limbs.

The limbs invented have been as various as the minds that originated them, though but few have proved of sufficient utility to find favor with the public for any great length of time.

The late war, through which we have passed, called into activity the inventive genius of our people in a remarkable degree and many kinds of artificial limbs will date their origin from that great struggle. The wooden peg leg which was used by the disabled hero, according to the cuts in our old books, is now displaced

by the handsomely turned and graceful limb of late inventors. In the case of the loss of a limb, a simple peg or hook is found to be quite useful and easily applied, but is neither graceful nor beautiful. The great object now to be attained is to combine those qualities in a limb that will make it practically available in the rough and tumble of every day life, as well as beautiful in form and finish. I believe my Patent Union Limb now stands *pre-eminent* among its rivals for *lightness* and *durability*, combined with beauty of form and finish, affording the wearer the satisfying consciousness that what he uses to conceal his loss is not a disgusting appendage, but on the contrary, a limb entirely worthy to conceal his loss. After reading the following pages, I leave the reader to judge whether I have not had superior advantages for experimenting with the artificial leg. I consider the person that has suffered an amputation, and after wearing a limb made by another manufacturer procured one of mine, the best judge, for he (not like myself) is *only* interested in getting the best that is made. I therefore earnestly request a perusal of the certificates herewith appended, and, if they have any doubts of their authenticity, correspond with any of their authors. Their addresses are given in full, it will be observed, for that purpose.

DESCRIPTION

OF

JAMES A. FOSTER'S

PATENT

UNION ARTIFICIAL LIMB.

PATENTED AUG. 8TH, 1865, & JUNE 29TH, 1869.

I call it the Union Limb, because it combines all the qualifications that can be expected to be found in artificial limbs, namely: lightness, strength, simplicity of construction, durability, naturalness of motion and anatomical beauty.

In giving a description of the Union Limb, I will state where some of the most prominent manufacturers fail, and how I remedy their imperfections. In speaking of their imperfections, I do not wish it understood that I consider them failures, for many of them have proved good substitutes for the natural limb, and have gladdened the hearts of thousands, who by their assistance have been enabled to walk and pursue their usual avocations again. But, while I allow that some have brought honor to their inventors, there are, undoubtedly, others that every person who attempts to wear one of them will pronounce very imperfect. Admitting that they have all been very good and serviceable and all that, is it any reason that there can be no improvements made on them as well as on any other article of manufacture? In these days of mutilated soldiers, railroad employes, &c., I know of no branch of the manufacturing business that needs to be brought nearer perfection than this, and I know of no one thing that has attracted the attention of the ingenious and humane (as well as capitalists and adventurous speculators like this) and

it is really astonishing as well as interesting and amusing to see the different kinds of appliances that have been invented and offered to the maimed since their first introduction into this country, and more especially since the commencement of our late rebellion.

Before the late war the sight of a person who had lost a limb was an unfrequent occurrence; but, alas! now there are few of us who have not a cripple among our friends, if not in our own families.

War unmakes limbs, and human skill must supply their places as it best may. Most all of the artificial limbs manufactured that have gained a respectable notoriety by their merits, (except my patent Union Limb,) are manufactured after patents issued between 1846 and 1860; and the manufacturers do not claim anything new of late in the way of improvements, but rely solely upon the supposition, and try to make others believe, that they had them brought to a state of perfection many years ago. One of the oldest manufacturers in the business, and at an early day he was certainly the most meritorious, now denounces all other manufacturers whether good or bad, without any discrimination whatever, as charlatans, mountebanks, piratical copyists, &c., and in fact he cannot think of any name base enough to call them. Why is this? I am well aware that there are some base imitators that deserve the contempt of all respectable manufacturers, who by their extensive advertising have succeeded in doing quite an extensive business, as many of the unfortunate maimed well know by sad experience, but they will soon meet with the disdain they so richly deserve.

At the time, these artificial limbs were really the best made in the world. If a man had gone through the country reiterating that at this time we should have a submarine telegraph to Europe or a railroad from the Atlantic to the Pacific, who would not have called him a fit subject for the lunatic asylum! In this enlightened age, what should we now say of a man that boldly asserts that long before the great rebellion artificial limbs were brought to a state of perfection?

What has the ingenuity of this country done of late? We have made implements of husbandry that out-mow and out-reap the world. We have invented the knitting machine and the sewing machine, to save our mothers and sisters from uncongenial toil, so that they might have more leisure for self-development. We have a new system of labor in our machinery for making watches and rifles. We once revolutionized naval warfare by the steamboat. We now have revolutionized it a second time by planting towers of iron on the huge waves of the deep. While the weapons of warfare were being made at Springfield and Hartford to carry death to friend and foe, we have had bestowed upon us and all the world an anodine which enables us to cut off legs and arms without pain to the patient; and what honest thinking man would not say, with the great additional demand for artificial limbs, and the great amount of skill which has been brought to bear to perfect them, that they too must march onward with the stride of progress.

I claim that no other manufacturer has had the same facilities for experimenting with and improving artificial limbs that I have, for I had served a regular apprenticeship and was a practical mechanic before I lost my limb, (which was amputated in February, 1860,) since which I have served my time with other manufacturers of artificial limbs, and have always hired the best workmen that could be procured from the oldest manufacturing establishments, thus having the benefit of others added to my ingenuity, and by repeatedly altering and repairing limbs made by most all manufacturers, have had every opportunity to become acquainted with the merits or demerits of every kind of artificial limbs, and by being constantly brought in contact with the wearers, from that day until this, I have studied theirs as well as my wants, and now claim to have combined the best principles of those that had any, with new principles of my own, and have tested them by practical applications to myself as well as others, and for the proof of how well I have succeeded, I refer the reader to the certificates of those that have worn other artificial limbs and are now wearing those manufactured by me; and then take into consideration the fact that when I opened an office and manufactory at Detroit, Mich., Palmer's and Bly's limbs were universally used and recommended by the medical profession, and without any patronage from soldiers that were supplied by Government for the first four years, and advertising very little, but relying on the superiority of my invention and workmanship, and keeping in my mind the fact that a good article would meet with the merit that it deserved, and that one good limb well fitted to a patient would find market for more, and knowing that a few extra dollars cost put into the construction of a good limb was better for the patient, and just as beneficial to me as though I had paid it towards extensive advertising, I have succeeded in bringing the *demand* of my Patent Union Artificial Limb to its present magnitude, which is in itself sufficient evidence of its superiority over all others.

In my first experience in repairing artificial limbs I perceived the inconvenience that the wearer who lives at a distance from manufactories must encounter in taking the limbs apart to oil or repair, or in case it needed a slight alteration. I found in all artificial limbs made, except Dr. Bly's, that every cord and spring which is used was inserted in such a way that not one of them could be repaired or removed and replaced without much difficulty, and in every instance you have to cut a hole through the side of the limb and dig out a pin that passes through the cord and glued in, or take the covering off from the bottom of the foot, (and sometimes both,) which is fastened on with glue and, perhaps, tacks.

Whether all these deficiencies were an oversight, or whether they were originally intended for the purpose of compelling the wearer to send his limb to the manufacturer in case some trifling thing should happen to go wrong, I am unable to say, but this much I am certain of: it is very inconvenient to the wearer, and much cheaper for the manufacturer to make, supplying the latter

with a great deal of repairing that he would not otherwise get if they were constructed (like my Patent Union Artificial Limbs) so that every cord and spring could be repaired, or removed and replaced by the wearer.

Dr. Bly makes his limbs so that the cords and springs about the ankle joint *only* can be removed and replaced without much trouble; but he constructs his cords in such a way that they are continually wearing out and breaking, and cannot be made by any one who does not thoroughly understand the business.

Many people that have never seen an artificial limb have the mistaken idea that when it is once applied it becomes flesh and bone and subject to all the diseases which afflict the natural limbs, and medicine taken internally or applied externally would have the same effect on it as on any part of the human system. If this was so I would yield to the claim of some manufacturers that doctors [and self-styled M. Ds. and LL. Ds.] should be the originators and manufacturers, instead of mechanicians like myself; but, unfortunately for the maimed such is not the case, for an artificial limb is nothing more or less than a piece of machinery, and, without proper care it will wear out in time the same as other mechanical devices, hence the importance of having them constructed in such a manner that every piece susceptible of wearing out or giving way, can be taken out, repaired and replaced by the wearer, without any trouble. There is no piece of mechanism made by man but what usage or time will wear out, for what things earthly will last always?

The knee joints I discovered were very defective. The knee pin being too small and not properly bushed, of course, soon wears loose, thereby causing—as all who wear artificial limbs well know—a very disagreeable rattling noise when walking, which the wearer cannot obviate without sending the limb to the manufacturer for repairs. The knee spring in general use causes a very unnatural step and appearance by its rigidness. When the knee is being flexed, in the act of taking a step, the foot is brought forward with such force and is thrown so high that when it is brought in contact with the floor it makes a very disagreeable sound, which attracts the attention of all present to the fact that an artificial limb is worn. Another and still more important failure is in the way the knee is adjusted, which is not noticed by spectators, unless a person is seen prostrate on the ground or in the act of picking himself up, either position being very disagreeable to the wearer. I would ask any one who has worn an artificial leg manufactured by Palmer and many others, for a thigh amputation, if he happens, accidentally, to put his weight upon it when the knee is partially flexed, in the act of taking a step, whether it will not give way and cause him to fall, unless he is very active? Some have tried to obviate this defect by making the knee-spring of sufficient rigidity to insure safety, thus causing

the unnatural gait and thumping sound which characterize nearly all artificial legs now in use. Some manufacturers of late have tried to get rid of that disagreeable rattling of the knee joint, but without success, so far.

It is very essential that the knee joint should be so constructed as to do away with this tendency to flex out forward, unless kept in a certain position, and at the same time possess the power to draw the foot forward with an easy, natural motion, that will resemble very closely the motion of the natural limb. It is also necessary to have some method of regulating it so that it will compensate for the wearing of the bolt and prevent the rattling so often heard in artificial joints.

In the first artificial limb I made and wore, the knee joint was constructed after the most common pattern used at the time. I used this limb for some time, but found it necessary to be very careful to prevent falling. One day while at work, in an unguarded moment, the knee-joint flexed forward so suddenly that I had no time to save myself, and measured my length on the floor. Although not very pleasant, it resulted in some good, for I soon conceited the idea that there could be some improvements made that would remedy this fault. I immediately began experimenting, and, after several unsuccessful attempts, I finally succeeded in constructing a joint that was perfectly free from such tendencies. It comprises three very essential qualities, viz: It takes the place of the knee-spring, regulates the motion of the lower part of the limb, causing it to move in harmony with the natural one, and compensates for any wear in the bushings of the knee-bolt, thereby entirely doing away with any tendency to rattle, which is a characteristic of all other artificial limbs. All three of these very important improvements can be regulated by the turning of one screw, which is placed in a position to enable the wearer to operate it without difficulty.

The Achilles or heel cord, in most artificial legs often proves insufficient. Those made of cat-gut would be sufficiently strong if kept perfectly dry, were it not for the short bend caused by the motion of the foot. This material is so brittle that it soon breaks close to the foot, and all who have worn limbs with this kind of a cord well know the trouble and expense necessarily incurred in getting it replaced. They are made in such a way that none but a manufacturer can replace them without materially injuring the limb otherwise. I make them of the best linen thread, consequently the short bend will not break them. I insert them in such a way that if one should give way the wearer can replace it himself without damaging or defacing the foot or any part of the leg.

The ankle joint in an artificial limb is the most important part. I say most important, because it is the most liable to get out of repair, and should be made as light, simple and *durable* as possible. The ankle joint of most all artificial limbs are defec-

tive on account of the small pin that passes through the foot, which wears too fast and has no way to compensate for it, thus causing a great deal of trouble to keep it properly bushed to prevent noise, &c. The ankle joint I use for an improvement is simply a piece of steel, turned and polished, five-eighths of an inch in diameter, with two flanges around it for retaining the foot and leg in their relative positions. It is bored to make it light, and bolted firmly to the lower part of the leg; an eye bolt attached to this passes down through the bottom of the foot, with a nut on it, and this nut by being turned will compensate for any wear that will ever occur. This joint is so constructed that no two pieces of metal move against each other where bearing is taken. Although this is a metallic joint, its weight is less than three ounces. This is a very essential point as one ounce of extra weight in the ankle joint is more tiresome to carry and more detrimental to good walking than ten ounces in any part above the knee.

With a heavy ankle joint it is impossible to make a knee-spring or regulator that will move the lower part of the leg in a natural manner, as it takes too much power to start and stop such a heavy mass of material. By making the foot and lower leg light, this difficulty is avoided.

The action of this spring is regulated by simply turning a nut, thus enabling the wearer to adjust it to suit himself with the greatest facility.

This constitutes the lightest, most durable and least complicated ankle joint yet invented, for the proof of which I refer the reader to those that have worn limbs made by other manufacturers, and have now thoroughly tested mine.

To compensate for the wear, and to prevent the rattling so often heard in the old fashioned knee joints, I place in the interior of the knee a vertical eye bolt which, after receiving the knee bolt, —which is fastened to the leg part by means of steel straps— passes up through a bridge in the thigh piece, with a nut on the upper end, so that when the least amount of wear is visible the nut can be turned down at any time to compensate for any amount of wear that may occur.

I make the knee bolt of the best cast steel, five eighths of an inch in diameter, and is bored to make it light, leaving the external shell but one-sixteenth of an inch thick, and is secured by terminal screws, thus doing away with the small set screws commonly used and thereby rendering any looseness by wear an impossibility. The bearings of this bolt are properly bushed with the best kind of material to prevent its squeaking.

For the foundation of this limb I use the English Willow, which I shape to correspond exactly with the natural one, and hollow it out to make it light. It is covered with a strong rawhide, which is prepared expressly for this purpose, and forms the main element of strength, and makes a smooth surface to receive the final finish, which is a delicate tinted water proof enamel or cement, colored to closely imitate nature.

The sole of the foot is cushioned and covered with buckskin, to make it soft like the natural foot, and to prevent noise when walking, and is so arranged that by taking out a screw the sole can be removed so as to get at any part of the mechanical arrangement of the foot. This will be highly appreciated by those that have worn limbs having the covering on the bottom of the foot glued or fastened on with tacks, in cases where a new spring or cord is required.

The advantages I possess over other manufacturers in bringing the Artificial Leg to its present perfection, are: 1st. I was a practical mechanician before my leg was amputated. 2. I have served a regular apprenticeship to the business, and in selecting workmen I get the most talented and experienced, from the oldest and most respectable manufactories. 3d. In my practice I have altered and repaired limbs from almost every manufactory in this country, good and bad, and not being favored with the title of M. D. or LL. D., —nor with the audacity to assume those honorary titles for gain —but a practical mechanic, not afraid of soiling my hands or taking an old leg apart, became thoroughly acquainted with their weakest parts, and my mechanical knowledge has enabled me to see wherein they could be improved. 4th. I wear a full length limb myself. With these qualifications, if I cannot tell what is necessary in an artificial limb, who can?

JAMES A. FOSTER.

WHY MY ATTENTION WAS CALLED TO THE MANUFACTURE OF ARTIFICIAL LIMBS.

When my attention was first called to artificial limbs, it was with the expectation that I should sooner or later want one for my own use. About ten years before I had my leg amputated I was attacked with a lameness in the knee. It did not seem to be very dangerous at first, but I soon found that it baffled the skill of all the surgeons I employed, although it became worse so slowly as to be scarcely perceptible. It then became necessary for me to confine my labor to some occupation that would give me an even surface to walk upon so as to avoid injuring it. I had, previous to becoming lame, chosen a trade and served my time with a good mechanician. For two years before my leg was amputated, [February, 1860,] I was certain it would have to be done, and this knowledge convinced me that I ought to be looking around and making examinations for the purpose of finding the best substitute From that time to the present I have made artificial limbs my constant study. During the last year of my lameness, previous to having my leg amputated, I was confined to my crutches, and having plenty of leisure, and my limb not being painful, I pro-

cured pamphlets with specifications and drawings from the artificial limb manufacturers, and studied them so thoroughly that when my leg was taken off I could give drawings and descriptions of all the limbs manufactured in the United States. But no one, be he ever so well skilled in the mechanical or surgical art can tell when a limb works with ease and comfort so well as the person who wears one—that I know by experience.

MY CHOICE IN A LIMB.

I had decided in my own mind what manufacturer's limb I should procure before I lost mine, but as I do not wish to be personal, or further the interests of one manufacturer to the detriment of another, I will mention no names. Suffice it to say that, after visiting the manufactory and thoroughly examining into the principles upon which it was made, I came to the conclusion that there might be something better. I then visited the most prominent manufacturing establishments where they were made, and after examining the principles on which the different limbs were constructed, I came to the conclusion that there might be one made lighter, and, at the same time be more durable. The result of this conclusion was I went home without purchasing, and soon commenced to make one for my own use, with the joints constructed on a different principle, which I finished in November, 1862, and it worked as well as I could expect, although not quite as well as the one I lost, but better than many artificial ones I had seen in use. As I had nothing to occupy my time the next winter after finishing my first leg, I made two more—one after each of the two most celebrated legs then in use—for experimenting with. I wore them all at different times, and if I cannot tell which works the best, who can? I was experimenting at this time with the sole view of getting a good leg for myself.

At this time the great rebellion had fairly begun, and bid fair to put many brave boys in want of artificial limbs. Stimulated by the fact that I could walk better after four months' practice with a limb of my own make, than others after four years' practice with limbs made by the best manufacturers in America (a fact admitted by all who saw me walk), and thinking it my duty to do all in my power to alleviate the suffering of the noble men who should lose limbs in that great war, and at the same time gain a livelihood for myself, I determined to make it my future business; but at that time I never expected the business would increase to its present magnitude—in competition with those that had heretofore been considered so near perfection.

MY COMMENCEMENT.

It could not be expected that the first few limbs made by any one (on a new principle) that had never had a practical teaching of the art, would be the acme of perfection in every particular. Although the principles were right, I lacked the knowledge to give them the artistic beauty of external finish.

After deciding to make this my future business, I determined not to offer one with an inferior external appearance, but one beautified to the highest perfection, as well as the most perfect internally arranged for simplicity, strength and lightness; consequently I thought it best to go where they were made and learn all that other manufacturers knew of the business, so that instead of commencing back where they begun, I might be even with them in the external finish of limbs, as well as in advance on the internal mechanism.

After receiving a practical education of the business, and learning all I could from experienced limb makers and the unfortunates that my occupation brought me in contact with, I determined to go to some western city and commence a small business and do what I could within myself, not doubting that the merits of my invention would be appreciated as soon as offered for sale. Before I could enter upon this step, however, it was necessary to procure materials, and to construct models, samples, &c., and to do this I returned to my home in St. Lawrence Co., New York, and began my work of preparation.

Here I met with considerable delay in carrying out the main part of my plan, for no sooner had I got my first model made than a demand for my limbs sprung up in that vicinity, and I was solicited by those that had lost limbs to make for them, and the result was that I was detained there about eighteen months.

When I started West I knew not what city I should locate in, but intended to visit Cleveland, Detroit, Chicago, St. Louis, Indianapolis and Cincinnati, to ascertain which place I should like the best for my future home; for with the improvements I had made I had no fears of not building up a good business in any of those cities, in competition with any artificial limb then made.

On arriving in Detroit, in November, 1864, the beauty of the place, and the entreaty of some of the leading surgeons, induced me to remain there and open a manufactory.

I introduced my limbs there in competition with many other kinds. Many soldiers and citizens in Michigan, as well as in the adjoining States, had already procured limbs from other establishments, but as soon as mine were seen they were at once appreciated, and the business so rapidly increased that I had to employ help. Many of the limbs I made were for parties living at a distance, and their popularity abroad became such that I was urged to open offices and manufactories in other cities, until the business has reached its present proportions.

TO THOSE SUFFERING FROM LOSS OF LIMBS.

Pre-eminent skill and proficiency in the art of making artificial limbs can never be attained except by a man who is a *thorough mechanician, wears one himself, and makes it his constant study*, which first I claim to be, and have done the last. No man is justified in engaging in this business if he only regards it as a trading pursuit or money making speculation. By conscientious practitioners it must ever be a serious and important undertaking, for nothing can be more painful to the wearer of an imperfect piece of mechanism than the reflection that he has been grossly deceived, and not only sacrificed his money but his personal comfort and hopes of benefit to be derived from it. In the present age of useful inventions when every year, nay, every month sends forth a new one, it must perplex such sufferers as have no knowledge of mechanical combinations to decide upon the best substitutes for the limbs they have lost, and the best and most sure way to accomplish this is to either visit the different manufactories personally and examine and compare their productions, or correspond with those that have worn the different kinds. I have given the names and address of many, in another part of this pamphlet, for that purpose, and would furnish more should any person desire it.

I have a large variety of the different kinds of the heretofore best patent limbs at my different places of business, which have been left by parties who have purchased of me, which I would be pleased to show to any one, whether he wished to buy a limb or not—not to detract anything from the merits of those that have been good and serviceable, but by so doing I can better illustrate wherein I have made improvements; and I hope to be able to improve artificial limbs so as to keep pace with the rapid stride of progress made in other articles of manufacture, for I believe no one possesses the same qualifications for such improvements that I do.

It should always be borne in mind that artificial limbs are not like ordinary garments, to be worn for a season and changed as the fashions vary, but are designed for permanent use during life. In choosing limbs, therefore, only such as will stand the test of time, combining lightness and simplicity of construction with strength and durability, and most conducive to the comfort of the wearer, regardless of the cost, should be obtained, for they will surely prove the cheapest in the end.

My qualifications are, that I was a first-class mechanic when I lost my leg, and have since studied the anatomy of the extremities with reference to the construction of artificial ones quite thoroughly, and consequently think I am justified in claiming that my workmanship is *just as reliable* as that superintended by some *doctor* or *lawyer* who does not possess the least mechanical skill. I wish it especially understood also, that I hold *myself* responsible for any failure from the use of poor material or bad workmanship.

IS IT BEST TO HAVE AN ARTIFICIAL LIMB?

This question often comes in the mind of one who has lost a limb. To such I would say that it is for you to decide, not me. If you are not obliged to work and have no inclination to do so, and no pride or regard for your personal appearance and comfort, I would say don't buy one. But to those who have business to attend to and have some regard for their personal appearance and comfort, I would say, get you a limb, for they are not like false teeth, eyes and hair, made merely for ornament, but for permanent usefulness. A man with an amputation above the knee, if he gets a good leg, can do a good days work at nearly all kinds of mechanical labor, and a great deal at many other kinds of business; and with an amputation below the knee and a *good fit*, can do most any kind of work that he could do before losing his limb.

"A sound mind in a sound body," is the comprehensive description of the state of a perfect man. The loss of a faculty, or of a member, destroys that enviable perfection; and to restore the one, or provide an adequate substitute for the other, is an object worthy of the highest efforts of beneficence. The greatest poets in our tongue have found a theme in the horrors of natural deformity. Those of accidental mutilation have the added pang of contrast.

The crutch has a very injurious effect upon the health of the patient by obstructing the circulation, injuring the nerves, producing partial paralysis by distroying the spine and other portions of the trunk, affecting injuriously the circulation and the lungs. All these effects are avoided by the use of the leg, and would be alleviated where they already exist, if not entirely cured by the substitution of the leg.

We can never reduce the value of a limb to exact pecuniary statement until we learn to measure human sensibilities with a rule, and weigh human joys and sorrows in a balance. When a person is deprived of a leg, his loss is not to be gauged by its former services, but by his wounded sensibilities, and, physically, by a long train of cruel sufferings arising from well understood physiological causes. The man's material interests are also usually affected by his unfitness for the pursuit of the avocation to which he had previously been devoted. Railroad employes being frequently subjects of the accidents which result in mutilation, afford an example. They are never, or rarely, able to go about their work on crutches, and hence are often reduced to pauperism by the loss of a leg, and become a charge upon the community.

Before I wore an artificial limb I thought myself very expert in the use of crutches, and I have been on them until I felt a sharp pain in my arm, running down the elbow and even to my fingers; and I was acquainted with a man in the town of Madrid, St. Lawrence Co., N. Y., who went upon one crutch until he lost the use of his right hand, and was compelled to

get an artificial limb. I saw him afterwards, and he was walking very well (although his leg was amputated quite close to the body], and he wondered how he could have been so foolish as to do without one so long. I think, after reading the foregoing, and the testimony from patients wearing my limbs, and more especially that of Mr. Harper, no one can reasonably doubt but a person with any stump at all can do a good business with an artificial limb. I think, since artificial limbs have been brought to their present state of perfection, that there is no reasonable excuse for a man to go stumping about with the old fashioned peg leg, or drag out a miserable existence on a pair of crutches. Some may say they are not able to wear such an expensive limb.

I think it is safe to assert that thousands who would be able to care for themselves, and can do more by getting a good limb, are, without such, a consuming instead of a producing part of the population, and that the community in which they live would, by combining to furnish them, be largely the gainers in the end.

Laboring men and women comprise a very large majority of those who suffer amputation of the inferior extremities, most of whom obtain artificial legs to compensate their loss, and thus are enabled to pursue their usual avocations and subsist therefrom. Of this portion nearly one-half obtain limbs by the gratuities of the sympathizing and considerate community, who entertain the abstract principle that their own moral and financial interests are involved in the interests and greatest usefulness of their suffering neighbors. *They judge rightly.*

In every instance they are the benefactors of mankind who contribute to the greatest usefulness and happiness of the mutilated; and who by their moral efforts both *conserve* and *restore.*

Many persons too poor to buy limbs for themselves, are also too proud to accept a subscription made by their neighbors and friends to get them one. I think this wrong and exceedingly foolish. We all remember nnmerous instances where a man has lost property by fire, or had money stolen from him and had it made up by a friendly contribution. And what property or amount of money can be considered of half the value of a limb. To people of moderate means I would say that limbs are like articles of wearing apparel, and one of limited means can get a very serviceable limb, although, of course, the most expensive are the best and cheapest in the end.

An artificial limb is light, strong and comfortable improves the appearance and prevents your being particularly noticed in the street, and from disagreeable, though generally kindly meant, expressions of sympathy.

WHY IS IT THAT SOME GET LIMBS AND DO NOT WEAR THEM?

In reply to this I would say that there are several reasons, a few of which I will here state.

Some have been unfortunate enough to buy a worthless limb of some unscrupulous manufacturer. Some after buying a limb have come to the conclusion that it is easier to live by the aid of their benevolent neighbors and friends than to work for an honest living, and by laying their limb aside under the pretence that it is out of repair, or it hurts them, or some other frivolous excuse, that they will receive more assistance from a sympathizing community.—There are others who may get the best kind and properly adapted to them, but are not energetic enough to apply themselves persistently to learning to walk, and such would hardly ever accomplish much at anything they undertake. They think when they get an artificial limb, it will appear and feel in every respect like the natural one, and that they can and will be able to walk as well and as easy when they first put it on, without any practice, as they ever could. Such is not the case, however. A limb feels uncomfortable when first applied, and a person needs to exercise great patience and to possess considerable energy to become a proficient in walking; but if they will put forth energy and determination they will surely succeed, and in a short time will become so attached to the limb that they would not part with it for love nor money. It is true there are some cases where it is inconvenient for a person to wear an artificial limb, but such are very unfrequent, and a manufacturer that thoroughly understands his business can define them, and, if honorable, will not advise such unfortunate to buy one, just for the sake of making a sale. for such an act would be a disgrace to the calling.

In many cases a just cause arises from their not being properly adjusted. It makes no difference by whom the limb is made, or how good it may be in other respects, if it is not properly fitted to the stump it is an uncomfortable appendage and a source of annoyance, as any one can tell by noting the expression of pain on the faces of many such unfortunates when walking.

This is not always a fault of the manufacturer, for many who want an artificial limb, wish to save the expense of a journey to the manufactory, and had rather run the risk of having it fitted by measure (which is wrong in every instance when it is a leg wanted), consequently their failure to procure a perfect fit.

FITTING ARTIFICIAL LIMBS BY MEASURE.

The injurious practice of fitting a leg by measure alone, without seeing the patient, has arisen from the strong competition in the different parts of the United States caused by the late rebellion. Most of the manufacturers seem inclined to sell all they can,

whether they are ever used or not, consequently they advertise (which they well know to be false) that by some new test measure or process they can make and fit a leg just as well by measure as though the patient should visit the manufactory, thus saving them the expense of a journey. This is wrong, and every conscientious manufacturer ought to discountenance the practice, for it is injurious to those that want limbs both physically and financially in the end; for if a limb is not properly fitted, it chafes, irritates, annoys, and finally disgusts the patient, and in many instances he will lay it aside altogether and take to his crutches or the old fashioned peg leg, and indulge in the sad reflection that he has been grossly deceived by the representations of persons pretending to be able to alleviate his misery—that he has sacrificed not only his money, but his personal comfort also, and that he has been utterly disappointed in all his flattering hopes and expectations.

When Congress passed the law to give soldiers who lost limbs in the war an artificial one, they made no provision for them to go to the manufactory to have them fitted, and the soldier had to either have his limb made by measure, or pay his own traveling expenses, consequently many of them tried the unfortunate experiment of having them made by measure. It was not long, however, before the disastrous effect was made known to those in authority, and it was arranged to give soldiers free transportation to and from the manufactory to have their limbs properly fitted. If those who bought limbs for others to wear saw the inconvenience of having them made by measure without seeing the patient, ought not those who are to use them during life to look well to their interest before trying the experiment?

The manufacturers gain nothing by so doing, for one manufacturer can and does have the same facilities for taking the measures and fitting by them as another, and if one firm adopts the practice, others can, and many of them have, and more will continue to do so, notwithstanding the amount of suffering it must eventually cause to the unfortunate maimed. This was commenced first by some of the Eastern firms, (as well as some worthless and unprincipled manufacturers) who felt that some of our Western branch manufactories would lose much of their trade on account of the expense of the journey, if not by giving them a superior article. I am sorry to see some of the pioneer manufacturers (who are now being outdone by new inventors, and fear to lose the monopoly they once enjoyed) are among the first to adopt such a wicked practice, but it is truly said that a drowning man will grasp at a straw in the effort to save his life, and that seems to be the case with some of the manufacturers of artificial limbs. Even this gross folly will not save them however, for right must and will triumph and attain the success it merits in this as in any other calling.

Those that advertise that they can make and fit a leg just as well by measure, do not care to have the patient come and investigate the latest improvements; but for me, I had rather every one that contemplates buying an artificial limb would visit every other

manufactory before coming to me: they will then be better prepared to appreciate my improvements

I know there are some who have had artificial legs satisfactorily fitted by measure who will disagree with me on this subject, for I have made some myself, and should do so again if the necessity existed for it, notwithstanding my denunciation of the practice, for there are many instances that might be mentioned where a manufacturer would be justified in so doing.

Artificial arms can, in most cases, be fitted so, if measured correctly, but a cast of the stump taken in Plaster Paris would be preferable.

I have found in my practice many who had been to the manufactory and had their limbs made and fitted, and then have not used them, or if used at all, they were more an implement of torture than relief.

Very few thoroughly understand that a perfect fit is, for comfort, the most essential part of the business.

There are very few who have suffered amputation of a limb that are not able to wear a false one. In most manufactories the fitting is done by journeymen who wish to accomplish about so much, and do not pay much attention to the condition of the stump, and there are many in such a shape or condition that it requires much time and the exercise of a great amount of judgment and patience to get an easy and comfortable fit.

It is not necessary here for me to reiterate the advantage I have over *all* others to have this branch of the art perfect, and that I employ the most talented artizans that can be had from the oldest manufactories; but I would say that every one of such workmen go through a regular course of personal instructions from me, and even after all this precaution, in all bad cases, I go from one of my manufactories to the other to personally assist them, and if I cannot, with my advantages, give you satisfaction, I fail to see where you can get it.

I hope all who have been so unfortunate as to get an artificial limb they cannot wear, will give me a call, at either manufactory, and if I do not help you, I will make no charge.

WHAT CLASS OF MEN OUGHT TO MANUFACTURE ARTIFICIAL LIMBS.

All artificial limb manufacturers of any distinction claim a particular preference. Some merely because they have lost a limb, notwithstanding the fact that they never served an apprenticeship at the business, nor at any other mechanical occupation; others because they were surgeons, and by frequent dissections have become familiar with the anatomy of the natural limb, and thus learned to counterfeit nature in the artificial one. Many have

assumed the title of M. D., because they think it more popular with the maimed; and one manufacturer, to be more prominent with honorary titles, in addition to Dr., adds LL. D., and sometimes styles himself Surgeon Artist for the Government, and at other times, to the hospitals.

As for those who have *no mechanical skill*, or have assumed honorable titles for renown, I have nothing to say; but I wish to notice more particularly the manufacturers who claim to be anatomists. Of all the manufacturers of artificial limbs that claim to be anatomists, surgeons, &c., I believe there are only two who are graduates of a medical college, or who ever studied surgery, and both of those claim to manufacture artificial limbs on purely anatomical principles, and the internal arrangement of their limbs are as diverse in their construction as any other two of the most extreme kinds now in use. Why is this? Did not our Creator construct the joints in men's limbs all alike? Until I read the teachings of those two distinguished anatomists I was so ignorant as to suppose (as I think all do who have not read their writings) that he did. but if either of them imitate nature, my early teachings were all wrong.

Should the surgeon who amputated my leg start an artificial limb manufactory, and for the purpose of imitating nature, take the member he cut off for his model, he would make a different article in internal construction from those manufactured by the two professors. I wish more anatomists would engage in the business of making limbs on anatomical principles (*not mechanical*) that we might learn [according to their views] the different ways in which our Creator made joints for the human limbs.

The most prominent of those professors, in his descriptive pamphlet, says: "Formerly the manufacture of artificial legs has been left to common *mechanics* and *those who have undergone amputation.*"

As I am the *only* manufacturer who was a practical mechanician and lost a limb, I think this was intended for me—at any rate the coat fits, and I will put it on, button it up and consider it mine and thank the gentleman for it, and I except the issue and propound a few questions and facts for him or any candid person to consider.

I think no one will deny but what an artificial limb is a piece of machinery; a device intended to substitute nature as nearly as possible. Now who makes or repairs machinery of every kind and description? Is it a surgeon or mechanic?

When these anatomists make an artificial limb of any other material than that used by mechanics for the same purpose, or construct one on such principles that it can be doctored or repaired by any one of the profession (not excepting themselves) without calling on a mechanic to perform the labor, their arguments will look more feasible.

When these anatomists want workmen to manufacture these limbs, why do they advertise for mechanics instead of surgeons?

If they are really the right class to make a machine to assist in walking, why are they not the right ones to invent and manufacture machines to assist the hands in manual labor, such as washing machines, sewing machines, knitting machines, and many useful devices made to assist man on his farm and many other places.

Suppose a person living in a city where there was no artificial limb manufactory [but plenty of anatomists] should go and buy an artificial limb of one of these professors of anatomy, and after returning home it should break or require some slight alteration, and he should write and ask whether he should take it to a doctor or mechanic to put it in order, what would be the reply?

As to the advantages I possess, in wearing a limb in connection with my mechanical ability, for making the best limb, I have nothing more to say, but would ask the reader to peruse the certicates published in another part of this pamphlet and judge for himself who makes the best artificial limb at the present day.

JAMES A. FOSTER.

WHERE TO AMPUTATE.

It is perhaps unnecessary to suggest modes of amputation, or certain points of election best adapted to the successful application of a serviceable artificial limb, as in nearly all cases the disease or injury will necessarily govern the surgeon.

I do not think it necessary to issue new rules for amputation, or suggest the need of cutting flesh and bone to fit what I make. I claim that in every case I can fit a good limb, answering well the purpose for which it is intended; but as there are points for amputation which are most advantageous to the patient, I deem it best to give my preference, which I believe is the choice of nearly all artificial limb manufacturers.

Since an early period in surgery, surgeons have recognized the importance of selecting such points for amputation of the lower extremities as were best adapted to the application of artificial limbs, and many of the authors of works on surgery have given such points as were considered best adapted to the artificial limbs made at the time; but the great improvements which have been made in artificial limbs have materially changed the old points of election, therefore this subject demands the attention of surgeons generally. In accordance with the high state of perfection now attained in the construction of artificial limbs, all ampuatations performed on the foot should be anterior to the insertion of the flexors of the foot. The operation known as "Chopart's," severs the flexors of the foot, and should never be performed under any circumstances whatever. The moment the flexors are

severed, the extensors, having no antagonists, draw the heel upward, extend the foot or the leg, and causes the amputated surface to point almost directly downward. I am aware that to obviate this difficulty some surgeons have severed the tendon achilles, but that has proved ineffectual—it is only a partial relief at best. The wound is slow to heal, *always tender*, and the remaining portion of the foot is generally a curse to the patient as long as he lives, unless he submits to a secondary amputation. Dr. Bly says: "The Professor of Surgery in the Geneva Medical College performed a secondary amputation for such a patient. This patient had had the tendon achilles cut twice, and then made an unsuccessful effort to wear a substitute constructed by a noted firm in New York city, but at last, to better his condition, was obliged to submit to re-amputation. Another case of the same kind came under my personal knowledge at tne city of Detroit, in the fall of 1865. This patient had made an unsuccessful effort for one year to wear a substitute constructed by a New York firm. In April, 1866,

No. 1.

Mr. F. G. Rand applied to me for a pair of artificial legs, (here was a chance to prove what I formerly believed) one was amputated at the junction of the lower and middle third of the tibia, the other through the foot, known as Chopart's operation. His amputations were performed December 25th, 1863; eight days after, both hands were amputated, all caused by being frozen on the 9th.

I finished the legs in August, 1866; when he put them on he walked without the assistance of a cane, and he has always expressed his preference in favor of the amputation performed at the junction of the lower and middle third of the tabia. I believe all manufacturers dislike this kiud of amputation.

Amputation through the ankle joint, by sawing through the malleoli, known as Symes' operation, is less objectionable; still, since the artificial leg has been brought to such perfection, there are reasons which weigh heavily against the operation. The ankle

joint in the artificial leg should correspond with the one of the natural leg, but cannot in this case on account of the length of the tibia and fibula, therefore the joint must be placed a little lower than the other. To get a good fit with an artificial limb the stump should be conical, or at least it should not be larger at the end than it is higher up, as it renders a portion of the interior of the artificial leg too large, if made large enough to allow the bulbous extremity to pass through, or, if the leg is made to lace up even, then the ankle is necessarily large and clumsy. It has been supposed that by this operation the patient would be able to take the most, if not all, his weight upon the end of the stump; but the majority of cases which have come under my observation do not sustain the supposition, though I have seen some that would with ease. Therefore, when an amputation becomes necessary which would sever the flexors of the foot, it should be performed a sufficient distance above the ankle joint to admit of an artificial substitute with an ankle joint of the most perfect construction now attained. The junction of the middle and lower third of the tibia is the lowest point at which amputation of the leg can be performed and give sufficient room for the construction of a good, substantial and gracefel artificial limb, with an ankle joint of the most recent improvement. *It also gives a stump of as much length as is of any use to the patient.* Therefore the junction of the middle and lower third of the tibia should be the first point of election whenever the flexors of the foot cannot be saved. (See point indicated on cut No. 1.)

This cut represents an external view of a leg for an amputation below the knee.

Then from this point the surgeon should not recede unless compelled by necessity. He should contest every inch until driven to the knee joint.

Often, in cases which admit of most favorable amputation, (near the ankle,) a most unwarrantable portion of the leg is removed, and not unfrequently the knee is permitted to remain semi-flexed so long as to become incapable either of full flexion or extension, while in *innumerable* instances a healthy joint is found fully flexed and permanently *useless* for want of a little care in healing. Such practice cannot be too strongly reprehended. It is always advisable to amputate high enough to secure a good flap, which is very important, as it prevents unpleasant sensations, such as arise from a slight tension of the thin skin, too often found to be the only cov-

cring of a protruding bone. Amputation *at any point below the knee* is preferable in all cases, if safety in healing may be apprehended, and if there be no abnormal condition of the knee joint to forbid such an election. If the knee be diseased or anchylosed, and the *joint fully extended*, or only partially flexed, in such a manner as *to prevent supporting the weight of the body on the knee*, then, indeed, the lower third [or fourth] of the thigh should become the point of election; otherwise, *never*.

Amputation for a knee support of the leg, near the head of the tibia, should always be the work of necessity, not of caprice; for the natural knee joint, in the use of an artificial leg, should never be unnecessarily sacrificed; nevertheless, a leg with a knee-bearing and artificial knee joint, is a highly satisfactory and useful dependance, both for utility and naturalness.

The operation for the application of a leg to take the bearing *on the knee* should be performed so as to allow the end of the stump, when flexed, to fall *one inch* back of the thigh, to form a sort of grapple, as it fits the concavity of a socket, by which means the limb may be held securely in its place without any appendages to connect it with the waist or shoulders. The end of the stump is so secure from all pressure [in the hollow of this socket] that use does not produce excoriation or inflammation, and in many instances a limb might be applied within six weeks after the day of amputation, without any danger of immediate or remote inconvenience to the wearer.

This cut represents an external view of the leg for an amputation above the knee.

When the knee joint is perfectly anchylosed, or immovable, and the leg in a position at or near a right angle with the thigh, amputation should invariably be performed below the head of the tibia, if the condition of the knee will allow it to serve as a basis of sup-

This cut represents the knee-supporting artificial leg.

port, but he should never operate through the knee joint, as nothing is gained by it, while much is lost, because the end of the femur will occupy a space which is needed for the construction of an artificial knee joint. True, an artificial knee joint has and can be made in this case, but not as durable and comely as when the condyles of the femur are removed. The size of the condyles makes the end of the stump too large, and the same objection arises as in Syme's operation.

If the femur is sawn through just above the condyles, the stump assumes a conical form, and the end of the bone no longer presents any obstacle to the construction of an artificial joint of the most modern improvement. Then, for amputation of the thigh, the point of election is just above the condyles of the femur (see point indicated on Thigh Cut No. 1). From this point upward the surgeon should contest every inch with redoubled vigor, and the higher compelled to go, the greater the value of every inch of femur saved.

CERTIFICATE FROM JAMES J. HARPER, WHOSE STUMP IS LESS THEN TWO INCHES LONG.

NOTE.—It will be noticed that the certificates published by all artificial limb manufacturers, with a very few exceptions, are from those that have never tried any other kinds. I might publish a large volume of such, but as I claim superiority over all others now in use, I intend to prove it by written testimonials, [or in any other way that those wanting limbs may choose] from those that have tried the different kinds of patent limbs.

My excuse for publishing the following is from the fact that Mr. Harper's stump is extremely short, and that he was the first customer I had after I finished my term of service at the artificial limb business and commenced the business for myself. J. A. F.

LISBON CENTRE, ST. LAWRENCE CO., N. Y., Dec. 7, 1863.

MR. JAS. A. FOSTER: *Dear Sir*—I hardly know what to say about my artificial leg; I can wear it all the time and feel scarcely any pain. The trouble is all in the knee joint; I think the bolt is too near the back side of the leg, causing it to flex forward too easy. I have worn it every day I have been at home. I wore it to church last Sunday, and the folks thought I walked very well; but I have to be very careful of the knee or I hould get some hard falls. If it were not for the knee joints bothering me by flying out, I could walk five miles per day—as it is I can walk one mile.

Yours respectfully,

JAMES J. HARPER.

NOTE.—The above is taken from a letter written a few days after he got his leg. He seems to think the knee is not quite right, and I think no one will wonder at it when they read his next letter and find that his stump is only *one inch and seven-eighths in length from the hip joint.* Nearly all, when learning to walk with an artificial knee, imagine there is something wrong with it. This is a natural consequence from the fact that a person with a thigh amputation always sits or stands with the stump inclined forward, thereby acquiring a habit of carrying it in that position, which has to be corrected when the limb is put on. They soon learn that the trouble is with themselves, and not the leg, by using it. J. A. F.

LISBON CENTRE, Sept. 26, 1864.

MR. JAS. A. FOSTER: *Dear Sir*—I am still wearing the artificial limb you made me, and feel a satisfaction in saying that it more than meets my expectation for its lightness, adaptation, durability, anatomical beauty and naturalness of motion.

For the benefit of those who have been as unfortunate as myself, I will give a short history of my case, which I believe has never had its parallel since the invention of artificial limbs. You have a perfect right to make use of it in any way you please, or refer to me at any time.

Having had the misfortune to lose my leg close to the body —stump *one inch and seven-eights long* –and being very desirous to know if it were possible for me to wear an artificial limb, I wrote to Mr. Condell telling him my condition; he considered my case so hopeless that he did not answer my letter. I then visited Dr. Bly of Rochester; he did not think I could wear one, but said if I would bandage my stump awhile and come again, he would tell me whether he could do anything for me or not. He had written to me of men wearing limbs with stumps as short as mine, but when I was there he had nothing to say of such cases, and told me it would be no credit to him or to me to make me a limb, as he considered my case hopeless. I went home thinking I should be forced to go upon crutches the remainder of my life, and think I should not have been so happily disappointed had I not accidentally met you at Potsdam, walking perfectly well without the aid of a cane. I would not give you my measure at that time because I doubted your having made the limb you wore; but when I ascertained that such was the case, and that you were about going west to start business on your own account, I determined to have you try to set me walking. How well you succeeded you can judge when I tell you what I can do and have done. I am a farmer, and the past season have hoed, mowed, pitched hay, and done many other kinds of work that is to be done on a farm.

I am a commissioner of highways, and a few days since had occasion to survey a new road through woods a distance of three miles The weather was very warm, but I went through without trouble, and could have gone farther. I think any one wearing an artificial leg with an artificial knee will agree with me in saying it would be as easy to walk six miles on a good road. I think on a cool day on a good road I could walk eight miles without starting the skin. Everyone that has seen me use it has been astonished, and Dr. Brydges of Ogdensburg, who amputated my leg, considers it a miracle, and that I should be grateful to you as long as I live. In conclusion I would say that I consider myself qualified to recommend your limbs, and will be most happy to give any information in my power to any one who may wish it. I have never seen one who could walk better than you with an artificial knee, and feel justified in advising all who have lost limbs to go to you, from the fact that no person is so well qualified to fit a limb as he who wears one himself.

Yours, respectfully,
JAS. J. HARPER.

LISBON CENTRE, N. Y., Jan. 31, 1865.

MR. JAS. A. FOSTER: *Dear Sir*—My leg is all right. I have worn it every day and failed to find any weak points in it. It would surprise you to see how well I can walk. I have done my own chores nearly all the winter, have drawn my own wood, and can do more work than I ever expected to be able to do. I am sorry you have moved so far away, as it will be so far to go if I should happen to break down. *Dr. Brydges*, Dr. Furness and Dr. Crookshank of Ogdensburg, say that I am walking better than they ever thought any one could with so short a stump, and I am improving every day.

Truly yours,
JAS. J. HARPER.

LISBON CENTRE, N. Y., Feb. 18th, 1870.

JAS. A. FOSTER. Philadelphia, Pa.

Dear Sir—Yours of the 11th inst., asking if the leg had killed me, or if I had killed the leg, is received, and in reply would say that we are both living and doing well. I can walk better with the old leg than any person in the neighborhood that wears an artificial one, and must say that it has met my expectations and has done me more service than I ever expected it would.

Yours very respectfully,
JAS. J. HARPER.

After reading the foregoing letters, can any one doubt the ability of a person to walk and do business with a *good limb* if he has as much stump as Mr. Harper. The reason so many persons do not wear limbs after being to the expense of getting them, is because they are not properly fitted. The advantage I possess over others in fitting is that I wear a *full length limb* myself, and of course can tell how it should fit to work with ease and comfort. I often find persons who have purchased limbs, and after trying them a few months, lay them aside, concluding it impossible for them to wear one. All who have brought them to me with such complaints I have never failed to set walking.

J. A. F.

TESTIMONY FROM THOSE THAT HAVE TESTED THE PALMER PATENT LEG.

YOUNGSTOWN, Ohio, March 8th, 1870.

JAMES A. FOSTER, Cincinnati, O.

Dear Sir—Yours is received. In reply I must say I am well pleased with your leg. It is now a little more than a year since I commenced wearing it, and I think it is in just as good order now as when first received. I wore one of Palmer's make about five years, and I must say it worked well, but there were some serious faults in it which are overcome in yours. I have not been able to find any fault with your leg as yet, and trust I shall not. Wishing you success,

I am truly yours,

GEO. J. WILLIAMS,

Late of the 42d Ohio Vols.

EAST SAGINAW, Mich., April 20th, 1870.

MR. JAMES A. FOSTER, Philadelphia, Pa.

Sir—Your letter of March 21st was duly received. In reply I would state, for your benefit as well as the unfortunate maimed, that the leg you made for me has provod satisfactory in every respect. I have used it constantly for over three years, and it has given me but little trouble. Prior to getting your make of leg, I wore the Palmer leg, but not with the satisfaction yours has given. I do cheerfully recommend your patent above all others I have seen in use. Please accept this short and hurried note. Hoping you may gain the confidence of all that are in need of artificial legs, I remain,

Yours, &c.,

A. O. WOODRUFF.

Late of the 5th U. S. Artillery.

BRANDON, Oakland Co., Mich., March 18th, 1870.

MR. JAMES A. FOSTER, Detroit.

Dear Sir—I take this opportunity to express my entire satisfaction with the artificial limb you made for me. I have worn it eighteen months now with perfect ease. The Palmer leg is no comparison to it, for I can do twice the work on this leg that you made than I could on my Palmer leg. I work a farm, seventy-five acres improved, and do all the work myself, excepting a few days in haying and harvesting. I can plow two acres per day, and have cradled three acres of heavy grains in one day. I have split out eleven hundred rails in three-and-a-half days, and can do all kinds of work on a farm. I would say to those who have been so unfortunate as to lose a limb, try the Foster patent, and you will be sure of an easy wearer and a durable limb. Beware of humbugs.

Yours truly,
JAMES VANKUREN.

ROUSE'S POINT, N. Y., August 18, 1864.

JAS A. FOSTER: *Dear Sir*—I promised to let you know how I liked my limb. I will tell you. I have worn Palmer's eleven years, and also one of James Drake's, and yours surpasses them both for lightness, durability and beauty. I have worked five months, ten hours per day, walking, as near as I can calculate, five miles each day. I would recommend all who have lost limbs to procure one of your make, and I think you will find plenty of business, without going West, as you talk of doing. I intend coming to see you the first of next month.

Yours truly,
THOS. J HAYES.

Later from the same source:

ROUSE'S POINT, N. Y., March 27, 1865.

MR. FOSTER: *Dear Sir*—My leg gives perfect satisfaction so far, and if I wished another I should certainly come to you. I have worn it about one year, and it shows no signs of failing as yet.

Respectfully, &c.,
THOS. J. HAYES.

Additional testimony from Mr. Hayes:

JAS. A. FOSTER, Philadelphia, Pa.

Dear Sir—After wearing the artificial leg which you made for me in March, 1864, (before you went West,) constantly up to the present time, I am the more firmly convinced that you make the best.

THOS. J. HAYES.
Rouse's Point, N. Y., March 14th, 1870.

DETROIT, Mich., August 2, 1870.

JAS. A. FOSTER: *Sir*—As you are about revising your pamphlet, giving a description of your Patent Union Artificial Limbs, and publishing certificates from those that have tried the different kinds, permit me to offer you my assistance, hoping thereby that my testimony may be instrumental in helping some unfortunate soldier (like myself) as certificates published from other unfortunates did in influencing me to try an artificial leg of your make.

My case is as follows: I lost my leg while serving my country in 1864. The amputation was performed just below the knee, and as the joint is not flexible, I have to wear what is called a knee-bearing leg, which I got from Dr. B. Frank Palmer, LL. D., in July, 1865, and used it until April, 1868, when I laid it aside (completely used up) for one of your Patent Union Legs, and after using it with perfect satisfaction until the present time, I am free to say to him [Palmer] and you, or any one else, that I much prefer the one you made, for several reasons, viz: it is easier to wear, lighter, more durable, and I am not annoyed with the rattling, clanking noise in the knee joint so often heard in common artificial legs made for this kind of amputation. Hoping that others who apply to you for relief will meet with the same success that I have

I am very respectfully your obed't serv't,

WM. P. STEVENS.

Late of the 184th N. Y. Vols.

DETROIT, Mich., October 10th, 1866.,

JAS. A. FOSTER: *Dear Sir*—In sending you this I feel as if I were only fulfilling a duty I owe you and others who have been as unfortunate as myself. You will recollect I lost one of my legs in the army. I saw your Patent Union Artificial limb before I procured one, and liked it very much, but as you had no government contract at that time, I was obliged to go east to use my government order. I procured one of Palmer's, supposing it to be the best furnished, but it was not worth the money I used to pay traveling expenses going after it. After using it about three months, I became so dissatisfied with it that I ordered one of you, which I have worn ever since, and in fact my Palmer leg is so broken that I could not use it if I wished until it has been back to the manufacturer for repairs. I have worn the one you made me about a year, and have had no repairs on it, and have found no weak places in it as yet. You are at liberty to use this if you see fit, and I shall advise all who have need of an artificial limb to try one of yours as I know it to be a superior article.

Yours truly,

JOHN FREDERICK.

Formerly of the 2d Mich. Vols.

FLINT, Mich., Dec. 9th, 1866.

JAS A. FOSTER: *Dear Sir*—I received my artificial leg yesterday all right. I think it is very nice; it is a much better shape than I thought you could make it, on account of the stump being so long. I wore it all day yesterday, and it felt quite comfortable. I can walk so much easier with it than I could with the old one (made by Palmer) that I almost feel as though I had my natural leg. I will write you again in a few days after I see how I can work with it, but I think I will be able to do about as much work as ever.

LATER [the 20th]—My artificial leg works finely.

Yours respectfully,

JOHN H. CAREY.

LOUISVILLE, Ky., June 10, 1870.

MR. JAS. A. FOSTER, Cincinnati, Ohio.

Dear Sir—Yours inquiring how I like the artificial leg you made for me, is received, and in reply I would say that it fully meets my expectations. You are aware that I have had some experience in artificial limbs before purchasing one from you. I have worn out one made by B. Frank Palmer, consequently I think I am qualified to judge a good article, and I have no hesitency in pronouncing yours the superior.

From your obd't serv't,

W. E. APPLEGATE.

JAMES A. FOSTER: *Dear Sir*—For the benefit of those unfortunates as myself, I wish to say, that since about the first of May last I have been wearing one of your full length artificial legs. For nearly five years. Preceding that time I had worn a Palmer leg, which served me well and deserves commendation, and it was with great reluctance, and not until I had made a rigid examination of your leg that I concluded to give it a trial. I would not now exchange for the price of a leg. Your method of adjusting the knee joint is alone worth the price of a Palmer leg, and besides this it is superior in the following respects:

1st. It is so simple in its construction that it *cannot* often get out of repair, and when it does the wearer can without difficulty get at any part of it and make good any ordinary defect, or stop *any* noise with his own hands.

2d. By the rod and nut at the knee, you put the weight of the lower part of the leg much nearer the body, and thereby enables the wearer to use a strong, substantial leg with ease and walk with rapidity.

3d. The knee joint never flies from under me and lets me down when I am bearing my weight upon it.

And lastly, I wish to say, that the care and diligence on your

part in making your limbs of utility and comfort to the wearer, are worthy the consideration of every one who has been so unfortunate as to need such service.

Very respectfully your obedient serv't,

CHAS. S. MORTON.

Cassopolis, Mich., Aug, 3d, 1870.

A BLY LEG REMODLED AFTER TESTING ONE OF MY PATENT UNION.

JAS. A. FOSTER, Esq.: *Dear Sir*—I had my attention called to your artificial leg in 1864, and after a careful examination I ordered one as an experiment. When completed I found it superior to any I had seen. For strength, simplicity in construction, and lightness, it is a superior article. I have been wearing the leg for about five years and it has given me entire satisfaction.

I wore one of Dr. Douglass Bly's artificial legs, known as the celebrated Ball and Socket Joint Leg, when I first got yours, and as you are aware I had that altered into your style of leg.

I have seen a number of artificial legs of different manufacture, but none to compare with yours for all practical porposes.

Very respectfully,

MARK FLANIGAN.

Detroit, Mich., March 18, 1870.

Late Col. 24th Mich. Vol., and at present U. S. Internal Revenue Assessor.

NOTE.—It will seen by the above that Col. Flanigan first got one of those highly extolled artificial legs with the universal side motion ankle joint, then procured one of my *Patent Union Legs*, and after testing them both, he had the foot and ankle taken off the Bly leg and one of my patent applied.

J. A. F.

Certificates from some of those that have tried Dr. Douglass Bly's different Patent Artificial Legs before buying one from me.

Detroit, Mich., Dec. 10, 1866.

MR. JAMES A. FOSTER: *Dear Sir*—The limb you manufactured for me works admirably, and thus far has more than equalled my expectations. At the time I applied to you for a leg I had very little hope of getting one that I could wear with any comfort or feeling of security, I had been wearing one of the celebrated ball and socket inventions *called* artificial limbs, manufactured by Dr. Bly, until my patience was *nearly* worn out and the leg *completely* used up. It required about eighteen month's to accomplish this.

During that time I had to send the leg to Rochester for repairs twice, besides having a new set of cords and springs which I put in

myself. I have examined several other kinds of artificial limbs, and I have no hesitancy in saying that it is my opinion that the Foster leg is superior to any I have yet seen.

Yours truly,

JAMES R. DUTTON.

Later.

JAMES A. FOSTER: *Sir*—After wearing the artificial leg constantly until the present time, I have nothing to retract from what I have before stated, but on the contrary I am more convinced than ever of its superiority.

JAMES R. DUTTON.

July 25th, 1870.

PORTSMOUTH, Va., April 15th, 1870.

MR. JAS. A. FOSTER: *Dear Sir*—I write to you particularly to express the gratitude I feel towards one who has set me on my pins. I have worn the leg which you made for me constantly since I received it, and like it better every day.

I have no trouble with it like I had with my old Bly leg, which I tried for nearly two years, but never had it to work to my satisfaction for a single day. I do not want any more of the "anatomical ball and socket," and take occasion here to say that I gave it a long trial and finally threw it away in disgust. You are at liberty to publish this if you like, and I hope, sir, it may be the means of benefiting one more unfortunate.

With many wishes for your future prosperity, I have the honor to be

Yours truly,

J. THOMPSON BAIRD.

Formerly 1st Lieut. 16th Va. Infantry, Mahone's old brigade.

CINCINNATI, Ohio, March 26, 1870.

JAMES A. FOSTER, Esq.: *Sir*—You wish an expression from me as to whether I am satisfied with the limb you made me. I have worn your leg one year and six months, and am perfectly satisfied that it is the best artificial limb manufactured. In so far as the Bly limb is concerned, I can speak from experience, having wore one of their manufacture four years, and if I should need a limb to morrow, and they were to offer me one for nothing, and yours were offered at the usual price, I would pay the difference, and in five years I believe I should have saved money by the choice, for by that time their limb would have cost me as much as the original cost of yours for repairs, and would be completely worn out, while yours would be in pretty fair condition, and in the meantime would have cost a mere trifle for repairs. The Bly limb is more

clumsy and complicated in its construction, consequently more trouble for the wearer to take apart when it needs repairs. But it is not necessary for me to dwell on the relative merits of yours or the Bly Limb, but you may send to me for information any who may come to Cincinnati and I will try to explain to them its merits.

The lateral or side motion of Bly's limb is not of the slightest advantage; rather a disadvantage in slippery weather.

GEORGE H. PEET.

Clerk in Cincinnati Post Office, formerly of the 5th Ohio Vols.

AILSA CRAIG, C. W., February 6, 1868.

JAS. A. FOSTER. Detroit, Mich.

Dear Sir: Doctor Bly's superintendent in his artificial limb manufactory at Chicago, Ill., wanted I should write him a piece for publication, stating how I like his artificial legs, and I have concluded to comply with his request; and as I have one of your manufacture, I thought I would send it to you and let you publish it too, hoping you will send Mr. Gardner a copy of it, as I do not wish to show any partiality to either manufacturer.

JOSEPH STONEHOUSE.

The following letter is the recommendation that Mr. Gardner asked for:

AILSA CRAIG, C. W., February 6, 1868.

To MR. JOHN GARDNER, Superintendent of Dr. Bly's Artificial Limb Manufactory, Chicago, Ill.

Dear Sir: As you requested me to write, stating how I liked the artificial legs you made for me, I will do so.

The first one you made for me was the celebrated Ball and Socket Leg, with side motion at the ankle, which I used about fourteen months and laid it aside completely used up. I then bought one of your Army and Navy Legs, which I tried to use (with poor success) for three months, and then laid it aside for one of *Foster's Patent Union Artificial Legs*, which I have now been using every day with success for the last sixteen months, which is all right now, and looks fair to be so for some time to come. In conclusion I would say, if Foster's leg proves in the future what it has in the past, I shall not want any more of your Ball and Socket, Universal and Side-motion legs.

Yours very respectfully,

JOSEPH STONEHOUSE.

Additional testimony from Joseph Stonehouse.

JAS. A. FOSTER: Sir---I have worn the artificial leg that you made for me ever since I got it with gratifying success, and have

got more service and have taken more comfort with it than I could with half a dozen such as Dr. Bly's workmen made for me.

JOSEPH STONEHOUSE.
Formerly of the 7th Wisconsin Vols.

Duncrief, Province of Ontario, July 18th, 1870.

Detroit, March 14th, 1870.

J. A. Foster, Esq., Philadelphia, Pa.

Dear Sir: After having used the artificial limb, procured of you, for nearly two years, I would say that thus far it has proved very satisfactory, and has even more than met my expectations, notwithstanding I had taken some pains to examine various other patents, and felt thoroughly convinced that yours was an improvement on all others I had seen. The Bly limb I formerly used was much heavier and far less durable. Having been personally acquainted with you for a long time, and feeling confident of your integrity, I shall take pleasure in recommending your work to all.

A. H. CHAMBERLAIN,
Late of the 8th Mich. Vols.

Columbus, Ohio, March, 1870.

Mr. James A. Foster: Dear Sir---Yours of February 26th was received yesterday. In reply permit me to say that I have not the least objection to your publishing a certificate from me. I will most cheerfully, on all occasions, give your limb the very best praise, for I honestly believe it to be the best leg made at this time. My experience with Bly's leg compels me to say that I would not have another if I could get it for a present. These are my honest sentiments; others may think differently. The Bly leg was to me an instrument of refined torture, not to speak of the endless expense. The leg which I got from you last summer, I have worn constantly since the day I first received it, and I must say that it has given as much satisfaction as anything artificial can. Hoping that success may attend your efforts, I remain,

Yours respectfully,
M. A. LILLEY,
Late of the 46th Ohio Vols.

Dayton, Ohio, March 29, 1860.

James A. Foster: Dear Sir---Yours of the 25th is at hand. You wish to know how I like the artificial leg you made for me. I will say that I am perfectly satisfied with it in every respect. You are aware that I wore one of Dr. Bly's Patent Universal Side-motion Leg before I purchased one of yours. It was continually getting out of order during the time I wore it, and was a great source of annoyance as well as expense. I would advise all in

need of artificial limbs to get the Foster leg I have seen almost every other manufacturer's leg in use, and believe yours to be the best and most substantial and least apt to get out of order.

Yours most respectfully,

A. KNECHT, Jr.

——— Market Master.

Detroit. Mich., Feb. 10, 1868.

James Foster –Dear Sir: For the benefit of yourself and those who are so unfortunate as to be compelled to wear an artificial leg, I will give you a little of my experience in artificial limbs, which you are at liberty to publish or make use of in any way you see fit, or refer to me at any time.

While serving my country I was wounded so that it became necessary to amputate my leg above the knee. I purchased one of Dr. Bly's celebrated Ball and Socket Anatomical artificial legs (which I supposed to be the best at the time), which I used for some three years. I had to overhaul it about once a week to keep it in running order. After witnessing the success of your artificial limbs (for almost three years,) which you applied to yourself and others, I thought best to try one of yours, and I am free to say that I do not regret it. The leg you manufacture is lighter, less complicated, less likely to get out of repair, more beautiful, easier to wear and the movement is more like nature's own work. The improvement you have over all others in the knee joint is a decided success.

E. F. SHEPHERD, 66 Washington Avenue.

J. A. FOSTER—Dear Sir: I have worn one of your legs one year without its being once out of order or needing repairs. I am a machinist by occupation, and run the largest lathe in the Detroit & Milwaukee R. R. machine shop without difficulty. Previous to getting a limb from you I wore one of Dr. Bly's ball and socket legs for five years, which got out of order so often that it cost me more for repairs during that time than I paid for it new, whereas with yours it is quite the contrary, it being as good as the day I purchased it, and for comfort, naturalness of movement and beauty of finish, it cannot be surpassed.

I examined many kinds of legs before purchasing of you and have arrived at the conclusion that you make the best that can be procured on this continent.

Yours respectfully,

HENRY MERDIAN.

TESTIMONY FROM THOSE THAT HAVE TRIED THE SALEM LEG.

LANSING, Mich., March 2, 1870.

J. A. FOSTER:

Dear Sir—Your letter asking me whether I could conscientiously recommend the artificial limb you made me nearly *two years* ago, is at

hand. In reply I am most happy to say that it has proved satisfactory in every respect, particularly the knee and ankle joints where my other (the Salem leg) proved an utter failure. I don't wish to expatiate upon your limb, but what I wish to say is this: I have carefully examined those of other manufacturers, and I believe, not only from what I have seen of them, but by experience, yours to be the best limb manufactured. Wishing you success,

I remain, yours, &c.,

FRANK M. HOWE,
Late of the 20th Mich. Vols

SALT LAKE CITY, May 13th, 1870,

JAS. A. FOSTER, Philadelphia, Pa.: *Sir*—I take pleasure in stating that the artificial leg you made for me last winter is in every way satisfactory. I presume I am more pleased with it because of having worn for four years a Salem leg. This one is much better, and I think after minute examination of the work of most of the prominent manufacturers, and considerable experience in the matter of artificial legs, that those made by you are more perfect and easier to wear than any made in this country.

GEO. R MAXWELL,
Late Lt. Col. and Brevet Brig. Gen. 1st Mich, Cavalry.

DOUBLE AMPUTATION ON GENTLEMEN.

BAY CITY, Mich., February 5, 1868.

JAS. A. FOSTER; *Sir*—In relation to your inquiry how I get along with the pair of artificial legs which you applied to me a year ago, I am happy to inform you that they are a success beyond my hopeful expectation. I can now chop, saw and split wood, and do many kinds of out-door labor. I can walk out two miles from home and back with ease. I never anticipated that I could accomplish what I can with a pair of artificial limbs. I can now walk about in a crowd of people, and no one would mistrust that I walk on a pair of artificial legs.

Yours, &c., FREDERICK STOCKLE.

Please read what the Advertiser & Tribune said December 15th, 1868, about Mr. Stockle's case, which is published in another part of this pamphlet among other notices of the Press.

NILES, Mich., March 20, 1870.

JAS. A. FOSTER: *Sir*—In reply to your inquiries as to how I like the *pair* of artificial legs which you made for me, I am happy to be able to inform you that they meet my expectations, and I can get about on them much better than I ever expected to when I first put them on. You are aware that I lost my legs by a railroad accident at Chicago, and both legs were amputated very close to the knee joints; stumps are both less than three inches long. My occupation being a drover, it becomes necessary for me to travel a great deal by railroad both night and day, which I can do without any trouble. When I lost my limbs I took considerable pains to ascertain where I could get the best substitutes, regardless of the cost, and after examining the different kinds, and seeing and talking with those that had tried other limbs and afterwards bought one of you, I decided to try your patent, and after testing them for over two years and becoming more thoroughly acquainted with the different kinds, I must say I have no reason to regret my choice. Wishing you success, I am

Very respectfully your obd't serv't,

A. H. HEATH.

AS HE IS.

AS HE WAS.

DETROIT, Mich., December 10th, 1866.

JAS. A. FOSTER: *Dear Sir*—It is with profound sentiments of gratitude and thankfulness that I now beg leave to give you my experience thus far with the two artificial legs which you applied to me. For the benefit of those that may have the misfortune to have both feet amputated, and have any doubts about being able to wear two artificial legs, I will state my case.

On the night of the 9th of December, 1863, I froze my hands and feet. On the 25th of the same month it became necessary to have both feet amputated, and eight days after both hands. My case has always been considered a hopeless one, for I had no hands to carry a cane in learning to walk; but your encouragements inspired me with hope, and all I have to regret is that I did not get them sooner. Thus far in using them they have far exceeded my expectations, for the first time I put them on I walked and decended a flight of stairs without difficulty. The result is a complete triumph. No one can sufficiently esteem the importance of a pair of artificial legs to mankind save those whom misfortune compels to wear them.

Yours respectfully,

F. G. RAND.

Since the above was written, Mr. Rand has removed to St. Albans, Vermont.

Mikey Hogan only 11 years of age. Brought to me by Dr. Fred. L. Matthews, of Carlinsville, Ill.

AS HE IS.

AS HE WAS.

Mikey Hogan had the misfortune to have his legs hurt by a mowing machine, so that amputation of both became a necessity, which was performed by Dr. F. L. Matthews, of Carlinsville Macoupin Co., Ill. (July 15th, 1870) After Mikey's stumps were well, the Doctor assisted him in ascertaining where he could get the best substitutes for those lost, and after due deliberation decided to buy my PATENT UNION ARTIFICIAL LIMBS, and how well they are pleased with their choice will be seen by the following extracts taken from letters wrote to me by the Doctor, since the boy commenced to wear the limbs, which were sent to him March 24th 1871, only *eight months* after amputation.

JAS. A. FOSTER: Dear Sir—"They (meaning the artificial limbs) *astonished* every one, are far better than I thought. They are a perfect success. What kind of a recommendation do you want? I can concientiously give one with as many signatures as you desire. Yours Truly,

FRED. L. MATTHEWS, M. D."

Carlinsville, Ill., June 2d, 1871.

JAMES A. FOSTER: *Dear Sir*—"The limbs are positively the finest I ever saw. Why the, Boy (Mikey Hogan) can run on them

and that too after having them but a few weks. All are *more* than *pleased with them.*

You may make a recommend and use my name just as strong as words can make it, and state that I am ready to answer all inquiries if stamps are inclosed to pay return postage. I would write one now but am in a hurry,. No one would suspect to see Mikey on the street that such was the matter with his feet, a tight boot is all that any one would mistrust.

Yours Truly,

F. L. MATTHEWS, M. D."

The above quotations from Dr. Matthews letters are as strong a recommendation as any one need to have without adding one word. It should be borne in mind that it is not courteous to neglect to inclose stamps to pay return postage when making inquires about any thing of disinterested parties, for if they are to the trouble of answering, when they never expect any remuneration, that is all that should be reasonably expected without paying postage.

JAMES A. FOSTER.

A. H. HEATH, NILES, MICH.

As he had to Sit[in] his Chair.

As He Is.

As He Used to Walk.

On the 85th Page will be found a letter from Mr. A. H Heath (wrote in March 1870), in which he speaks of the UTILITY of the ARTIFICIAL LIMBS, and he now (January 1872) says the longer he wears them the better and more useful he finds them.

JAMES A. FOSTER.

V. S. Parmlee, Esq., of Imlay City, Mich.

AS HE IS.

AS HE WAS.

IMLAY CITY, Mich., August 1st, 1871.

JAS. A. FOSTER, Detroit, Mich.: *Dear Sir*—In obedience to an obligation I owe to you, and humanity at large, I avail myself of this opportunity to give to the *suffering humanity* a statement of the causes that led to my misfortune, and the remedy I received at your hands. In the Spring of 1867 (May 14th) my right leg was broken at the ankle joint so badly that nature could not heal the broken bones (caused by jumping from a buggy when the horse was running with great violence). Ten and a half weeks from that time amputation became necessary, which was performed four inches below patella (knee-pan)), with great skill, by Drs. O. P. Strobridge and Stone. In the month of March, 1868, I procured one of your PATENT UNION ARTIFICIAL LIMBS, and I only left it off one day after receiving it. I attended personally to my business until the 29th day of June, 1870, when by another accident, of a similar kind to the one above alluded to, I lost the other leg, which was amputated about six inches below the patella (knee-pan). The 29th day of September 1870 (just three *months after* amputation), I put on another of your Patent Artificial Limbs, now having a *pair* (and, by the way, who would not have a pair when they can have just as well as not?), since which time I have attended to the affairs of my farm and built a store at Imlay City, Mich., stocked it up, and am certain when I say that I have sold more agricultural implements and machines than any one dealer in this part of the country, besides attending to the affairs of my farm. I can walk fully as well with my artificial limbs as I could when I had but one. Some may think I am making light of my misfortune, but suffice it to say that it is not so great when one can get a pair of your PATENT ARTIFICIAL LIMBS. You are at liberty to publish this whenever you please.

Yours truly,

V. S. PARMLEE.

Jeff. Waterworth, Fort Gratiot, Mich. only 19 years of age.

AS HE IS.

AS HE WAS.

It will be seen by the above cuts that one of Mr. Waterworths' amputations, is what is called Choparts operation, at this time of writing (November 1871) it is not healed sufficiently sound to admit of an artificial limb, but as he had to get about on his knees, he has a temporary apparatus for this stump and an artificial leg for the other, and he gets about very well; he says much better than he expected he could. Mr. Waterworth has been a telegraph operator at Fort Gratiot, Mich., but is to be sent to some other point soon, but as yet I do not know where it will be. JAMES A. FOSTER.

READING, Pa., December 7th, 1871.

MR. JAMES A. FOSTER: *Dear Sir*—I am happy to say the Artificial Legs I had made in Philadelphia at your office are doing me very good service. I had an idea as I had to use a pair of Artificial Legs I would have to use crutches to walk, but to my surprise and pleasure I did not have to use a crutch since I used the feet. Mr. Potts, your foreman, fitted them, and did it so accurate that they have not given me five minutes' pain since I used them.

I get about comfortable with a cane, and often walk more than a square without using it.

Very respectfully yours, &c.,
JAMES L. HUEY,
Sterling, Whiteside Co., Ill.

It will be seen by the heading of this letter that it was wrote at Reading Pa.; as MrHuey had not been home since he got his limbs at Philadelphia, and has been wearing them but a short time, but he finds them to be a perfect success.

TESTIMONY FROM ONE THAT HAS TRIED BOTH THE PALMER AND THE BLY PATENTS.

Detroit, Mich., March 24, 1870.

Jas. A. Foster, Philadelphia, Pa.

Dear Sir: The first limb I had was the "Palmer," furnished by the government. I will not detail its merits or demerits, but simply say that it was better than a peck on the head with a sharp stone. I wore it (off and on) about eighteen months. The next was the celebrated "Bly" limb, which I purchased at great expense, the total cost being about $300, including expenses. In this invention I fondly hoped to find a perfect substitute for my lost member; indeed so glowing were the accounts given by the manufacturer of what had been accomplished by the wearers of this marvelous contrivance, I had some expectation that it was going to surpass in usefulness the natural limb, but the sequel was by no means satisfactory. I draged it about for some six months, when I was compelled to abandon it for the "Palmer"—the only satisfaction derived from it being that experienced at witnessing the delight of a small boy to whom I gave the glass marble which constituted the ankle joint.

I was much annoyed at the imperfections of the "Palmer limb," the rattling of the joints and the constant attention required to keep it in repair being exceedingly unpleasant, besides the knee spring was constantly breaking, incurring expense and inconvenience. I had at this time lost all confidence in the article of wooden legs, and about made up my mind to have no more to do with them, and the examination of yours at first tended to confirm me in my determination. But so favorable were the reports that I had from persons wearing your limb that I finally thought I would make one more trial. I have now worn your limb nearly three years, and although I think it not faultless, yet I deem it incomparably better than either of the others I have had. Since I purchased my leg I see you have made some very great improvements which I think render your leg beyond any comparison the best made in this country. The superiority of the knee joint alone places the limb at the head of the list.

Very respectfully your obd't serv't, J. W. McMILLAN,
Late of the 24th Mich. Vols.

TESTIMONY FROM ONE THAT HAS TRIED THE SELPHO LEG.

Northville, Mich., March 2, 1870.

Jas. A. Foster, Esq.—Dear Sir: I received yours to-day, and in reply I would state that I have worn Selpho's leg and Foster's. If I could not get another of Foster's I would rather go on crutches than wear any other leg I have ever seen. I cannot recommend it too highly to my fellow soldiers who are in need of a leg.

I remain very respectfully yours, &c.,
W. H. BOURNES.

THE CONTRAST IN EACH DAY'S MAIL.

I would say, by way of introduction and explanation to the following three letters, (which are published without the consent and knowledge of their authors,) that they are only samples of what I am constantly receiving, and as the two last came from one State, mailed on the same day, arriving by the same mail, and the first one only a few days in advance, and all three having first tried one kind of a leg, makes the contrast the more impressive.

The first two needs no explanation, as they speak plainly for themselves; but in regard to Mr. Stevenson's letter, I would remark that he is one of the many that got an artificial leg (in July, 1865) with that highly *self-extolled* Universal Ankle Joint, made under the supervision of the Professor who claims to make artificial legs purely anatomical (not mechanical), and after a few unsuccessful attempts to wear it, which hurt his stump so much that he finally laid it aside for his crutches, thinking he could not wear an artificial leg, but after witnessing the successful operation of a leg I made for a man in the same neighborhood for about three years, concluded to make another effort and brought his leg to my office in Cincinnati, in the fall of 1869, and paid about thirty dollars to have it altered by a mechanic (not an anatomist) so he could wear it, which lasted him until he got a new one from me, in July, 1870, and this is the first letter written to me in regard to it. His amputation being just above the knee and so close to the joint that it was rather difficult to put my improvements in the knee, and he advised me to let it go, saying that if the rest of the limb was good he could get along with the old fashioned knee joint, but I insisted that it could and should be put in, and this letter explains how he appreciates it.

J. A. F.

BIG RAPIDS, Mich., July 20th, 1870.

JAMES A. FOSTER, Esq., Detroit.

DEAR SIR—Yours accompanied by circular is received. In reply I enclose the blank you sent me all filled according to the best of my knowledge and understanding of it.

You will observe that I am not at all complimentary to Bly or his leg, and I assure you I do not feel so much. He sent me one of the blank applications you speak. I returned it with the following as my filling: "Will you walk into my parlor said the spider to the fly." "I have tried one of Bly's excuses for a leg, and *don't want any more*." Soon I received a long sweet letter begging me to let him try once more. But *never*.

Yours truly,

V. W. BRACE,
Late of the 17th Mich. Vols.

WANATAH, Ind., July 31st, 1870.

JAMES A. FOSTER—Dear Sir: At different times I have received your descriptive circulars, and, until quite recently, had given up all thought of trying any more artificial legs. I lost $130 in a Bly leg, and it did me no good whatever—was a curse to me from the first time I attempted to wear it. I am not in circumstances to throw away money in that way.

G. P. LONG.
Late of the 4th Ind. Artillery.

AURORA, Ind., August 1st, 1870.

JAS. A. FOSTER—Dear Sir: I am in receipt of your letter of the 30th ult: I have no language to express my satisfaction with my new leg; it is a *complete success*. I am so glad you insisted on having the knee fastner (meaning my Patent Knee Joint Regulator) put in I believe I could walk four miles with comparative ease! Strangers would never know I had lost a limb by my walk.

I may write you agin on this subject

Yours in haste,

G. V. STEVENSON,
Late of the 7th Ind. Vols., at present U. S. Internal Revenue Collector.

TESTIMONY FROM THOSE THAT HAVE TRIED A MARKS' LEG.

Ravenna, Mich., June 20th, 1870.

Mr. JAS. A. FOSTER—Dear Sir: You inform me that you are about to publish a list of testimonials in regard to your Patent Union Artificial Limbs, and now let me say that it is with the greatest pleasure

that I accept your invitation to bear witness of what I consider the best invention in the line of artificial limbs. It is now nealy five years since I purchased one of your Patent Union Artificial Limbs, and during this time I have tested its strength and durability quite thoroughly, and have found it to give good satisfaction in all cases. I have tried and have not found it wanting. But during all this time I have been observing all the different patents of artificial limbs, I have not found a leg that I like so well as I do your patent. In the Fall of 1867 I got an artificial limb from A. A. Marks of New York, with one of his Patent India Rubber Feet. I got it of him on government account, as you had no government contract at that time. I don't like it for these reasons: 1st. It is two-and-a-half pounds heavier than yours. 2d. It has a stiff ankle joint, which makes it a great deal easier for me to stumble and fall down than when I wear yours. 3d. It gets out of repair at the knee joint easier than yours does at any part of it. 4th. It does not fit me as well as yours does, and on this account I do not wear it. I find, too, in reading over some of A. A. Marks' testimonials, they never speak of the disagreeable noise that it makes in the knee joint, and that is where I find the most noise comes from. I can say yours does not make any noise at the ankle joint or at the knee.

My sister, Mary Jane Price, wears one of your make of artificial limbs, and she says she is well pleased with it and endorses all that I have said about your artificial limbs. She has worn hers nearly three years, and it is in very good condition yet. I would advise any one who is in need of an artificial limb to examine yours before purchasing one anywhere else. Yours respectfully,

ALEX. HANNA.

CERTIFICATE FROM ONE WHO HAS TRIED A CONDELL LEG.

North Stockholm, N. Y., Jan. 16, 1865.

JAS. A. FOSTER: *Sir*—The leg you made for me suits me well. I am so much attached to it that I have laid my other leg, that I got from Mr. Condell, entirely aside. I can walk and work with this with perfect ease, and would recommend your limbs, to all who need such, as the lightest, most substantial, and in all respects the best I have ever seen. Yours respectfully,

WASHINGTON ADAMS.

Later from Mr. Adams.

North Stockholm, N. Y., Feb. 28, 1870.

This is to certify that I have worn an artificial limb, with the lower amputation, manufactured by James A. Foster, over five years. I can truly say that it has given me perfect satisfaction, and I have no reason to doubt but that it will hold out for a number of years longer. Being a cripple for some time, I have had a chance of trying other manufactories of artificial limbs with but little satisfaction.

WASHINGTON ADAMS.

CERTIFICATE FROM ONE THAT HAS TRIED THREE DIFFERENT LEGS.

West Stockholm, N. Y., Oct. 12, 1864.

JAS. A. FOSTER: *Dear Sir*—The leg you made for me is the fourth I have had, and I consider it much better than any I have tried before. I tend saw mill and get as much wages as those with two good legs, and I challenge the State to produce a man who will outdo me in like circumstances. I can carry two bushels of wheat up stairs, placing the false foot forward alternately, and step upon a platform 2½ feet

high with perfect ease. I hunt, fish, run, scuffle and jump—have worn your leg six months, trying it thoroughly, and, in conclusion, will say I consider yours the best artificial limb manufactured in the United States.

Yours truly,

I. F. FOLSOM.

Additional testimony from I. F. Folsom.

December 25, 1864.

Mr. FOSTER—Sir: My leg works first rate. I work on it all the time, boarding one-half mile from the mill, which I travel at present through snow one foot in depth. I am sawing shingles, and I do not believe there is a leg made that will do better service. If there is, I would go twenty miles to see and test it. You know that the proof of the pudding is in eating it, and in an artificial leg by wearing it.

Yours, &c.,

I. F. FOLSOM.

Still later evidence from the same source.

January 14, 1865.

Mr. FOSTER—Dear Sir: I sawed five and one-half thousands of cedar shingles yesterday and walked one mile, besides going a visiting in the evening and having a good time generally.

Yours, &c.,

I. F. FOLSOM.

Since the foregoing were written, Mr. Folsom went West, so I am unable to give his present address. J. A. F.

TESTIMONY FROM THOSE THAT HAVE TRIED THE JEWETT LEG.

Detroit, Mich., August 2d, 1870.

JAS. A. FOSTER,

Sir;—Just hearing that you are now publishing a revised edition of your descriptive pamphlet containing certificates from those that have tested the different kinds of patent artificial legs, I hasten to send you this short note to publish if you see fit.

I lost my leg while serving in the late war, as many a brave soldier did, both north and south. I found it rather inconvenient to part with it although I do not consider it anything disgraceful. I procured an artificial leg made by the Jewett Patent Leg Co., which I wore about a year before it failed; after that it annoyed me very much in wanting repairs, for three years, when I discarded it for one of your patent, and I must say that I am now well pleased with the change, and as I have worn it long enough to thoroughly test it, I trust I shall never regret it. Hoping this may be the cause of some unfortunate getting a good artificial leg,

I am very respectfully your obd't serv't,

OLIVER LUMPHREY.

2d Lt. U. S. Army.

Aurora, Ind., March 8th, 1870.

MR. JAS. A. FOSTER:

My Dear Sir—I take great pleasure in recommending your Patent Artificial Leg. I procured one from you in May, 1867, and have worn it steady ever since, and will say that it is far su-

perior to Mr. Jewett's leg which I wore two years and a half and broke it down, but for many months before I broke it I was tempted to throw it away on account of it being loose at the joints and rattling.

I find that your leg is durable and never rattles at the joints, owing to their being so arranged that two iron surfaces do not come into contact with each other. Another advantage is that the regulating of the knee joint is so convenient that it can be made tight or loose in a moment, to suit the wearer; and another advantage in your leg is the spring that holds the foot up; it never gets out of order, no odds how far it is walked with, and the joints are to-day as tight as they were the day I procured it; and another advantage is that if the knee joint is not entirely back to its place when the weight is thrown upon it, it will straighten under me instead of flying out and throwing me down; I can not fully account for this advantage unless I could show it to a person, this being a great advantage to a person, which cannot be fully appreciated by any one but the wearer. I wore your leg fifteen months and did not oil the joints, and as it did not squeak I thought it did not need oil. If I am obliged to get another leg I will surely get one of your make, owing to their durability and simplicity of construction.

Yours truly,
JAMES J. McCONNELL,
Late 3d Ind. Vols.

New York, April 30, 1870.

James A. Foster, Esq., Detroit, Mich.: Dear Sir—I have, as you are aware, worn one of your artificial legs nearly four years, and it has proved perfectly satisfactory in every respect. It is very seldom indeed that I use a cane. I have, on several different occasions during the past two winters, *skated* for hours at a time with but little fatigue. I take pleasure in recommending your legs to any who are so unfortunate as to need them.

With best wishes for your success,
I am very truly yours,
CHAS. F. ABBEY,
With Lorillard Ins. Co., N. Y. City, late 107th N. Y. Vols.

Mingo, Ohio, March 1st, 1870.

J. A. Foster, Esq., Philadelphia, Pa.

Dear Sir—For the benefit of those that have been as unfortunate as myself, I would state that I wore an artificial leg made by Jewett, five years, and then discarded it for one of your Patent Union Limbs. I find it far superior in many respects, and would cheerfully recommend and honestly believe it to be the best now in use.

Yours truly,
J. L. GUTHRIDGE,
Late Corporal Co. A, 66th Ohio Vols.

CERTIFICATES AND CORRESPONDENCE FROM LADIES.

The following extracts from letters received from Miss M. J. Hanna, are published without her knowledge, but judging from the tone of her letter sent me for publication that she will not be offended, and therefore I take the liberty to publish them.

June 10th, 1866, she writes—

I received my artificial limb last Thursday, and cannot find language to tell you how well I am pleased with it. I have worn it three days and am able to jump the rope with any of my scholars.

I have now been in school three weeks: I have forty scholars; I get along nicely with them and enjoy myself very much, as teaching is my favorite occupation.

July 8th.

I get along nicely with my artificial limb; I like it better every day I wear it. The longest walk I have taken yet is 3 miles.

August 18th.

I think it terrible to be deprived of the privilege of walking, and often think what a blessing the men who brought artificial limbs to such perfection have conferred upon their unfortunate fellow creatures. I have not known what real comfort was for the last eleven years until I procured this artificial limb of you, and I cannot feel thankful enough for the enjoyment it has afforded me. I use it with perfect ease, and do not hesitate to walk off two and a half miles in an evening.

October 4th.

My brother wishes me to say to you, that his artificial limb works capitally and shows no signs of getting out of repair. He met a man last Wednesday who was wearing an artificial limb manufactured by Dr. Bly, and after walking a while and comparing notes, he told my brother he should get one of your manufacture.

Ravena, Mich., November 5th, 1866.

Mr. James A. Foster: Detroit, Mich.

Dear Sir—Hearing you are about to publish a list of voluntary testimonials from those that are wearing your limb, I hasten to bear witness to its goodness. Really I am doing so well well with it that I do not know on what particular point to speak.

I can do housework with perfect ease, I can again mix in an assemblage of people without being gazed upon or pointed at or what is still worse to hear that harsh though often kindly meant exclamation 'there is a cripple.' Your artificial limbs need no eulogy from my pen, they only need to be seen and applied to be appreciated.

I shall take much pains to recommend them, when I meet with those in need of a substitute for a lost limb.

Yours very respectfully,

MISS MARY JANE HANNA.

LATER TESTIMONY FROM MISS HANNA.

I a letter which her brother, Alex. Hanna, wrote me, dated June 20th, 1870, and published in another part of this pamphlet, speaking of the superior qualities of the artificial limb I made for him, he says:—

My sister, *Mrs. Mary Jane Price* endorses all I have written in relation to your artifiaial limbs.

It will be observed that since the limb was made she has been fortunate enough to have her name changed—as I hope all good ladies may, especially my customers—and as a matter of course I think it is all owing to having a good limb. Now I do not wish to have the ladies think they are sure to get married as Miss Hanna did, after getting a limb, but I would say this much to the ladies, and also to gentlemen wanting good wives, that I will do my best to give all that apply to me for a limb a good understanding and if they do not make good wives it shall not be a fault of mine.

J. A. F.

Ceresco, Mich., March 7th, 1870.

Mr. Foster: Philadelphia, Pa.

Dear Sir—You wanted to know if you could use my name for reference. It it will be of any use to the afflicted you can print it. I am ready to recommend your artificial limbs; I have worn one of Palmer's; it done very good service; I have worn one of your make since the first of last June, and I like it very much; I think it much easier and lighter to wear than the Palmer; I can cheerfully recommend it to all afflicted with the loss of a limb. I feel thankful that there can be such good substitutes for those that are afflicted in this way, for it is a great misfortune to lose a limb, and if we could not have so good a substitute it would be worse. I have said enough for this time.

Yours very respectfully,

MRS. MATILDA HALSTED.

Fentonville, Mich., May 17th, 1870.

Jas. A. Foster. Detroit, Mich.

Sir—I write to let you know that I arrived home safe, and that I am getting along nicely with the artificial limb you made for me last month. I like it better every day I use it. My friends are very happily disappointed in seeing me walk so well. They thought it would take about a year for me to learn to go without a crutch or a cane, but I am pleased to be able to inform you that I can now walk well without either.

Yours very respectfully,

MISS SARAH BURROWS.

Adrian, Mich., July 14th, 1870.

Mr. JAS. A. FOSTER, Detroit, Mich.

Dear Sir—I am happy to say that the artificial limb you made for me in April last, is doing very good service and I like it much better then I expected to when I had it fitted.

Since I have been deprived of walking, I have looked out on people seeing them walk to and fro, and it seemed as though it was my lot to never enjoy again that which I have been deprived of so long, but I think now there is a chance for me to soon mingle in society again, and enjoy that which no one knows how to appreciate except those that have suffered like myself.

The limb seems to be a perfect fit and well finished, and all that have seen it speak very highly of its perfections.

Yours with much respect,

MISS ELIZA MYERS.

TESTIMONY FROM A LADY THAT HAS TRIED A MARKS' LEG.

Lebanon, N. J., June 2d, 1870.

JAS. A. FOSTER, Philadelphia, Pa.

Dear Sir—I write to let you know how I get along with the artificial limb you made for me, and must say that I feel very proud of it, for it looks and works so much better than the one made for me by Mr. A. A. Marks, which had a rubber foot and stiff ankle. It was very heavy, and in my case did not prove durable, but I made it answer my purpose until I got a better one, and have now laid it aside altogether. I can now walk about and do all kinds of work.

From your obed't serv't,

MISS GITTY M. SHURTS.

DOUBLE AMPUTATION ON LADIES.

Case of a girl seven years old—one amputation above and the other below the knee.

The following letter is from her father, written soon after she got the limbs, which shows that she will soon be walking about on a pair of artificial limbs.

Secor, Ill., July 26th, 1870.

JAMES A. FOSTER: *Dear Sir*— My little girl is learning to walk very fast, notwithstanding the extremely hot weather. By the aid of crutches she can walk all about the yard. She thinks she would not take two hundred dollars for the short one; she can get along with it and her crutches about as well as if she had her natural leg. We expect to have her photograph soon, and then I will write again.

Yours as ever,

T. D. FAUCETT.

Sarah C, Fawcett, only 7 years of age, daughter of Mr. T. D. Fawcett, of Secor, Ill.

AS SHE IS.

AS SHE WAS.

I sent this little girl's limbs to her from my Cincinnati office, July 11th, 1870, and by a letter from her Father, (T. D. Fawcett) dated the 26th, of the same month and printed on the 52d page, it will be seen how fast she learned to walk, in a very short time, and the following letter explains how well she gets around after having her limbs only fourteen months,

SECOR, Ill., Sept. 12th, 1871.

JAMES A. FOSTER. *Dear Sir*—I received your letter in due time, but have been so busy that I have neglected to write, and I hope you will excuse me for not writing sooner. Our little girl is in good health, and can walk very well without a cane. She does not use one about the house but very little. She will take a cane and walk to my brother's (over half a mile) as quick as most any little girl of her age that has her natural limbs. The Artificial Limbs do not *hurt* her nor get out of *order;* in fact, they work like a *charm*. I do not think they could be made to do any better. Some manufacturers told me they could never be made to be of much service to her, but I would not have her do without them one year for all the money they cost, and if she does not outgrow them I think they will last her for ten years.

I do not wish to blarney you in the least, but I do think I was very lucky in employing you to make them. The little girl is very thankful for the photographs you sent her, but would be more pleased if you would come and see us.

Yours with much respect,
T. D. FAWCETT.

After reading the above letter, who will doubt their ability, if they put forth energy, to successfully use an Artificial limb, after having lost one or both their natural ones. It will be seen by the above cuts that one of this little girls limbs is amputated below, and the other above the knee. It has been supposed by some, that a person could do nothing with two artificial limbs, and a great many would say that with one amputation above the knee, it would be useless to attempt to wear a pair, but happily for the maimed, Art and Science has refuted all such impressions, and

those suffering from double amputations may rest assured that they can get permanent relief by the use of a good pair of Artificial Limbs. If there are any who fear they could not successfully use an Artificial Limb, I would say that if they get a good article, and do not make it useful, it is positively their own fault but it must be borne in mind, that it requires some exertion, to become proficient in the use of one, but where is the person of mature age, who cannot accomplish as much as Mr. Fawcett's *little girl, only seven years old*? JAMES A. FOSTER.

West Union, Iowa, Aug. 28th, 1871.

JAMES A. FOSTER, Esq.—I have worn one of your artificial legs during the past seven months, and am well pleased with it.

I had previously worn a Jewett, and a Salem leg, I think yours is far preferable in EVERY particular, to either of those.

Very truly, MARSHAL HOUSE.

Cincinnati, O., Aug. 26, 1871.

JAMES A. FOSTER, Detroit Mich.

Dear Sir—For the benefit of those who have been so unfortunate as to lose a leg, I desire to give my experience in the use of an artificial one,

In 1865, I procured one of Dr. Bly's celebrated ball and socket, side motion legs, after wearing it a short time, I threw it aside, and concluded artificial legs were a humbug, and walked on my crutches for more than two years, but was finally persuaded to try it again. I took the Bly leg to your branch establishment in Cincinnati, and had a new socket made for it, and managed to wear it eight months with but little satisfaction. The cords and springs in the foot and ankle were constantly giving out, I then procured one of your Union Artificial Legs, and have been wearing it for about sixteen months, and it has proved an entire success.

My leg is off above the knee. I use a cane but not from necessity, as I can walk as well without it. My lameness is hardly perceptible.

I would be glad to confer with any persons who may desire a leg, and will give me a call.

There is another advantage I think your legs have over that of any other manufacturer, that is in their being SUBSTANTIAL.

I remain yours truly,

G. V. STEVENSON, 131 West 4th St.

Late Col. Inter. Rev., 4th, Dist., Ind.

Formerly of 7th Reg. Ind. Vol.

McVeytown Pa., March, 22d, 1871.

JAMES A. FOSTER, Philadelphia, Pa.

Dear Sir—I have been thinking of you this afternoon, and will try and scratch a line for you. My leg is doing very well in every way. It is as nice a fit as could be made, and there does not appear to be anything going wrong with it yet, and I make it run a good bit too. I just think I can walk and work

with anything that trots out on an artificial leg. The improved method of lacing is well worth what I paid you ($5) for them. I would not be without them for twice that. I can walk from five to eight miles, when the weather is cool, just as fast as any ordinary man wishes to *trot* along. The lady I *recommended* to you, and told you of, went to Kimbie, through the influence of some of her friends, and got a leg made, that is not fit for anything, but kindlings, unless it is to look at, as she can't wear it. It does not fit, and it is too long; so she has no leg she can use. After all, she begins to think a fool's advice is better than none.

Hoping you may ever prosper in the business,

I remain respectfully yours,

JOHN RHINEHART.

P. S. If you want a certificate, I can cheerfully reccommend your PATENT UNION LIMB, and I think I have given it a fair trial. J. R.

LATER TESTIMONY FROM MR. RHINEHART.

McVeytown, Mifflin Co. Pa., Sept. 2d, 1871.

JAMES A. FOSTER, Philadelphia Pa.

Dear Sir—I have used an artificial leg manufactured by Palmer about ten years, and have had one of your PATENT UNION limbs eighteen months, and as for simplicity, durability &c., I consider it surpassing any I ever saw.

One great advantage in your limbs, is that the wearer can take it apart, if he should ever wish to, and he can adjust the springs, and cords to suit his notion, in a very short time, which cannot be done by the wearer, with any other leg manufactured in Philadelphia. Yours very respectfully,

JOHN RHINEHART.

It was not my intention to publish any certificates, only from those who are using my PATENT UNION LEG, and having previously worn those made by other manufacturers—except in cases of double amputation, or bad stumps:—the following letter is from a man that has had *eighteen years* experience with various artificial limbs, and was wrote to (Mr. Rhineheart, author of the above letter) who was making inquiries of those who have had more experience, where he could get the best limb. I thought best to give it a place, which plainly speaks for itself and needs no comments. J. A. FOSTER.

Harrisburg, Pa., March, 30th 1870.

J. RHINEHART, Esq.

In reply to yours of yesterday, I will say I have examined every manufacturers Limbs, and from close observation of the principles of construction, would recommend THE FOSTER LEG as *superior* to any other for strengh, *simplicity*, durability and economy. Having used Artificial Limbs myself, for eighteen

years, I can fully appreciate the advantage of simplicity in constructions, which enables the wearer to do any required oiling, *closing* of *joints*, and *taking* up *lost motion*, which in any other limb entails *loss* of time and use of leg, besides expense of charges of the maker. When in Philadelphia, last October, I examined them throughly, returned home on Stackhouse's Train, and being intimate with him told him of Foster's *superiority over others*.

Two of my acquaintances since then, have received and are walking on, and find them superior to any other.

Foster's Office is No. 911 Chestnut Street, Philadelphia.

I hope you will get suited, and should like to hear from you on your return from Philadelphia.

Respectfully, H. EBERSOL.

Sterling, Ill., June 13th, 1871.

J. A. Foster—Dear Sir: I promised to let you know how I liked my leg, but I find it a pretty hard job to do so. I thought the leg I had (one of Kimball's & Co's.) was good, but I find I was much mistaken, Yours is so much better, that it seems as if I had been supplied with a natural limb.

Heretofore, while using the old one (Kimball & Co's.) I was very careful about walking, only going when it was absolutely necessary, but your leg works and fits so well that it is really a pleasure to walk about.

I went to the Soldier's Reunion at Rock Island, Ill., on the 7th, and although the day was very warm I walked full eight miles, and surprised my friends, as I have not walked half that distance in one day since I lost my leg. I do not think the leg you made for me can be beat except by a natural one. I have very little of that disagreeable sensation in the stump that I had when using the old one. Yours fits well, feels comfortable, and is just what I think an artificial limb should be, and while walking feels about five pounds lighter than the old one. If a better leg can be made I would like to see it, and until I do I will not believe it.

You can refer any one to me who may want an artificial leg.

Respectfully yours,

R. L. MANGAN.

Osceola, Lewis Co., N. Y., Feb. 15th, 1871.

J. A. Foster, Philadelphia, Pa.,

Dear Sir—I have received my Artificial Leg and have wanted to try it before writing to you. I am very much pleased with it; it's just *the fit*. I can wear it every day from morning until night, and never think of its being an Artificial Limb, because I can walk just as well as I ever could. Mr. Foster, I shall never have any other but your Patent Union limb, for I believe it is the best in use, and I speak from experience, after having worn out a leg made by B. Frank Palmer.

Yours truly,

JAMES ELLIOTT.

West Waterville, Kennebeck Co., Me.,
June 18th, 1871.

JAS. A. FOSTER, Philadelphia, Pa.

Dear Sir—I am very much pleased with the Artificial leg you made for me, and I am much obliged to you for making me such a good one. It is far better than the one Mr B. Frank Palmer made for me. Yours truly,

FREEMAN ELLIS.

Town Hill, Luzerne Co. Pa., Sept. 4th 1871.

JAMES A. FOSTER, Philadelphia, Pa.

Dear Sir—Having worn one of your patent legs for nearly eight months, I desire to add my testimony in favor of an invention so beneficial to humanity. I suffered amputation of my left leg, nine inches below the knee, March 29th, 1865 Six months after, I began to wear a leg made by Jewett of Washington, D. C. I wore it nearly five years, with a good amount of repairs, and inconvenience. I began to wear my artificial leg you made me last February. The socket was comfortably fitted, and have no trouble with it whatever. I cannot express in language, myadmiration and gratitude, for an invention which reconciles me to the loss of a limb, and which enables me to enjoy so much comfort and happiness. It makes that which formerly appeared as one of the severest afflictions to be in reality one of the least. Your patent leg has been perfectly satisfactory in every way, and I do not see what fault can be found, or what improvement can be made. The advantage yours have over all others I am acquainted with, is in the lightness and in the springs.

I am very respectfully your ob't servant.

CHAS. M. BETTERLY,

Cincinnati, O., Aug. 28th, 1871.

JAS. A. FOSTER, Esq., Dear Sir—After an experience of two years and six months, I deem it my duty to compliment you on the success of the Artificial leg you made me. I have worn it every day since I received it from your Cincinnati office, March 1st, 1869. It is now apparently in as good working order as it was the first day I received it. I have worn legs from other manufacturers, previous to getting one from you, and I can honestly recommend your leg to be far superior to any other leg that I have worn, or seen I wore one of Dr. Bly's Patent Side Motion legs one year and ten months, and it annoyed me very much by constantly getting out of repair. The average expense in repairs on the last year I wore it, being about one dollar per week. Since I have been wearing your leg, the repairs have not exceeded two dollars.

JOHN F. SPAETH,

No 1 Harrison Ave. Cor. of Coleman St.

Darlington, Wis. Aug. 15th, 1871.

James A. Foster, Detroit, Mich.: Dear Sir—It is with pleasure that I address you in answer to yours of the 12th, inst, and

would say that I am satisfied, and more than that, for I am happily surprised, for the Artificial Leg works far better than I expected one could be made to work. Since I received my leg in December last, I have almost forgotten that I have lost one of my natural members, for this limb works so much better than the artificial leg I had manufactured by Dr. Palmer. I had never expected that I should be able to walk with as much ease and comfort as I do, and my friends here express great surprise at the improvement in my walk, since I discarded the Palmer leg, for one of your manufacture.

Dentistry being my profession, I could not possibly get along without an artificial limb, and if I had to buy one of you every year to keep me on my feet, I should rather do so than to use the Palmer manufacture again.

In relation to your inquiry about using my name in your Catalogue, I would say, you are at liberty to use it in any way that will benefit the maimed and *suffering humanity*, by letting them know of the superiority of your Patent Union Artificial Leg, and I am willing at any time to bear witness to its utility, and as far as my experience goes in the use of such articles, I certainly recommend your Patent.

Yours very respectfully, DR. J. A. FORD.

Cincinnati, O., Feb. 29th, 1871.

Jas. A. Foster: Dear Sir—It is now four years since I purchased one of your Patent Union Artificial Legs, and am highly pleased to state that it has given perfect satisfaction, for its durability, strength and simplicity of construction. It is less liable to get out of repair and more easily kept in order. I must give it a decided preference over the Bly leg which I used. It gives one more ease and comfort, and certainly is more durable, and I cannot see as it has worn a particle yet.

After giving your invention a fair trial, I find it well worthy a high recommendation.

Yours truly, JOHN BARRICK.

Lansing, Mich., Aug. 17th, 1871.

James A. Foster: Sir—After having worn a Bly Side Motion Artificial Leg made by J. E. Gardner of Chicago, for a while, and found it good for nothing only to be out of repair all the time, and having worn one of yours for a year, I can safely say that yours is far superior to the one made in Chicago. I can get around better and do more work with it, and would say to those wishing a leg that they can not do any better than to patronize your establishment. Wishing you success, I remain,

Yours. &c', EDGAR W. CLARK.

James A. Foster: Dear Sir—In reply to your inquiry how I like the Artificial Leg made by you, I would say it gives entire satisfaction. My leg is amputated at the upper third, leaving me a stump of about four inches in length. I have worn your leg one

year and six months, and think I have tested it thoroughly, being employed in the Post Office, where my business requires me to stand ten hours every day, which is very trying on both leg and wearer. For lightness, durability, finish and a good fit, it far excels the Palmer leg, which I wore for some time, but it never gave me satisfaction.

In my estimation, your leg far excels anything I have yet seen.

Yours respectfully, JOSEPH A. HINDMAN.

Clerk in Post Office, Cincinnati, O., formerly of 5th Ohio Cavalry.

Annville, Lebanon Co., Pa., Sept. 11th, 1871.

James A. Foster, Philadelphia, Pa.

Dear Sir—I take this opportunity to express my satisfaction with the Artificial Limb you made for me I have worn it about nine months now, with perfect ease. The Hudson leg, is no comparison to it, for I can do twice the work on this leg that you made that I could on Dr. E. D Hudson's. I worked in hay-making and harvesting about twenty days, where I could not do it on Hudson's leg. I can cradle three acres of heavy grain in one day, and I can take my gun on my back and can go out gunning, and can walk just as easy my fifteen miles in a day as I could on Hudson's five. I would say to those who have been so unfortunate as to loose a limb, try the Foster patent, and you will be sure of an easy wearer and a durable limb.

Yours truly, JOHN SHAUD.

North East, Md., Sept. 2d, 1871.

Mr. James A. Foster, Philadelphia, Pa.

Dear Sir—Yours of the 30th ult., asking whether the limb you made for me, would justify my recommending it, is received, and I would beg leave to state that I have worn my leg since I received it, and so far has given me entire satisfaction, and will most cheerfully recommend it (instead of the Jewitt leg which I have tried) to all who are so unfortunate as to need one.

Yours with respect, J. H. McCRACKEN.

Late Co. A. 8th Regt. Md. Vols.

Monroe Mich., August 14th, 1871.

James A. Foster—Sir: you ask how I like the Artificial Leg you made for me in May last; in reply I would say that it fully meets my highest expectations, which is admiting much, for my expectations were great indeed, after being acquainted with your work for about five years.

For the benefit of those afflicted like myself, you may if you please publish a little of my experience with one of Dr. Douglass Bly's Anatomical or ball and socket artificial legs, with a lateral or side motion at the ankle joint. When I wanted an artificial leg for my use in 1863, Dr. Bly's side motion leg was attracting considerable attention, and as it was something new, and had not been practially tested, it was looked upon with much favor by surgeons and those wanting one, consequently I like hundreds

of others thought best to try one, and paid an exceeding high price for that which proved in my case a very expensive luxury, for it was continually out of repair, as you well know by the number of times you repaired it after starting your manufactory at Detroit; the great benefits to be derived from the lateral motion, I never found, and if they really were what was claimed for them your improvements in the *Knee Joint* would more than counterbalance it. When Dr. Bly issued his concilatory circular in 1868, stating that he had made some valuable improvements, and hereafter he would warrant them for a certain length of time, and would make good those that had not proved satisfactory, I took new courage and thought he meant to do what was fair and just, but was greatly disappointed when I sent for a set of cords and springs (which had been the greatest source of annoyance) to have them sent marked to collect pay on delivery. This is the way he made good the failure in the leg he made for me, and I expect he makes good the warrant on the legs, made after issuing the circular, in about the same way, for some time after he had his Western manufactory carried on in other persons name, so that those wishing to have the warrant made good, I expect will have to find the Doctor himself. I hope others have been more fortunate than myself with that kind of a leg, if so, they may give a more favorable account of it, but judging from the immense number of customers you have, who have previously tried the side motion leg that my experience has been the fate of thousands of my fellow sufferers.

Yours very respectfully, PATRICK MATTHEWS.

I Might Continue and publish an almost *unlimited correspondence* from those that have tried the various artificial limbs made by other manufacturers, *eulogizing the merits* of my *Patent Union Artificial limbs,* (after having procured one of me), but as they have such a *Similarity to those already printed,* they would appear so monotonous that but few would *care to read them,* and I think that if such kind of evidence has any influence whatever, I have given enough to *convince the most skeptical,* but if not, I will furnish any reasonable amount required on application.

JAMES A. FOSTER.

TESTIMONY FROM ONE THAT HAS TRIED A MARKS AND A BLY LEG.

Bright, Dearborn Co., Ind., March 5th, 1870.

Mr. FOSTER—Dear Sir: I have used artificial legs of various kinds for over five years, and flatter myself that I ought to be a good judge concerning all the requirements connected therewith, after using your artificial leg, which I received from you a few months ago. It has proved perfectly satisfactory. I walk with ease, and am not in dread of attracting the attention of every body. I have had two limbs. I received a leg made by Dr. Bly; I have worn it two years; it was a perfect rattle-box; the ankle joint was a perfect nuisance. I received a leg made by A. A. Marks; I wore it eighteen months and then it went to pieces. I am not satisfied, and I think I could make a better leg myself. I pity the man that makes worse legs than they are. I recommend James A. Foster's artificial limbs as the best,

Truly yours,
SAMUEL McCLURE, Co. H, 83d Ind. Vols.

TESTIMONIALS OF SURGEONS.

Potsdam, N. Y., March 10th, 1865.

JAMES A. FOSTER,—Sir—My nephew is greatly pleased with the leg you made him, and he says no money could buy it if he could not get another from you. I was present when he first put it on, and examined it carefully and with much interest, as I have often done the legs and arms made by other men, and I must say that yours is the most perfect and best adapted, and best fitted of any I have examined. My nephew can walk up hill and down, and on the side hill with great ease and comfort to himself,

I think the great secret of your success is in making and fitting the limb to the stump. Your mechanical eye at once discovers the strength and power of the muscles of the stump and hip and loins, and you seem to judge most correctly of their combined power, and you seem to know by looking at the man what sort of limb will suit his stump and strength, so as to give him comfort and ease in walking, and make him forget he has a wooden leg.

Respectfully your friend,
G. F. COLE, M. D.

DETROIT, June 10, 1865.

I have examined somewhat critically the artificial leg manufactured by Mr. James A. Foster of this city, and I must say that it is a most excellent article. It is in some respects, I think, superior to either Palmer's or Bly's celebrated limbs.

MOSES GUNN, M. D., and Professor of Surgery.

JAS. A. FOSTER,—Sir,—From a careful examination of your artificial leg, and also having witnessed its successful operation, I take pleasure in recommending it as complete, durable and easy of repair, and in these respects unsurpassed by any other artificial legs with which I am acquainted.

E. W. JENKS, M. D.

79 Shelby St., DETROIT, June 19, 1865.

I have examined with much satisfaction the artificial leg manufactured by Mr James A. Foster of this city, and would heartily recommend it to any person requiring such a member.

GEO. P. ANDREWS, M. D.

Later from Dr. Andrews.

Detroit, March 25th, 1870.

JAS. A. FOSTER,—Sir,—I cheerfully add my testimony to that of others, in regard to the value of the artificial limb made by you. The principle on which it is based, appears to me one of the best in use. The mechanical execution and external appearance also, is all that can be desired.

Very respectfully,
G. P. ANDREWS, M. D.

DETROIT, June 20, 1865.

To whom it may concern: This may certify that I have examined the leg manufactured by by a citizen of this city, Mr. James A. Foster, and believe it to be as good as any other made, and am not certain but it has superior qualities; should not decline to recommend it to my best friend.

JNO. M. ALDEN, City Physician.

DETROIT, June 22, 1865.

I have seen in use and carefully examined the artificial leg manufactured by Mr. J.A. Foster of this city, and in my opinion, for simplicity of structure, correctness of motion, durability and lightness, it is unsurpassed by any other artificial leg manufactured on this continent.

HENRY A. CLELAND, M. D.

Later from Dr. Cleland.

DETROIT, March 21st, 1870.

I have critically examined the artificial limbs manufactured by Mr Foster of this city, and have had opportunities of comparing them in use with those of other makers. I have much pleasure in stating that in simplicity of construction, they are unsurpassed,—that in durability and comfort they cannot be excelled.

HENRY A. CLELAND, M. D.,
late Assistant Surgeon 2d Mich. Infantry.

From careful examination I am convinced the artificial limb manufactured by James A Foster of this city, has some improvements in construction which make it more durable, easier to put and keep in order, and more serviceable than either Palmer's or Dr, Bly's, and can cheerfully recommend it to any in need of the same.

Detroit, June 23d, 1865. J. F. NOYES, M. D.

Detroit, June 24, 1865.

MR. FOSTER,—Dear Sir,—I have carefully examined the artificial leg manufactured by you, and without hesitation pronounce it the best I have ever seen.

J. A. ALBERTSON, M. D.

Detroit, June 24, 1865.

I have carefully examined the artificial leg manufactured by Mr James A. Foster of this city. I regard it as superior in several respects to either Palmer's or Bly's.

E. M. CLARK, M. D.

MR. FOSTER,—Dear Sir:—From the examination of the artificial limbs manufactured in the city of Detroit by yourself, I am pleased to express my admiration of the mechanical simplicity of the construction of the joint movements, its lightness and naturalness of motion and beauty of finish, and would cheerfully recommend it to the attention of those wanting artificial limbs.

I remain yours obediently,
Detroit, June 25, 1865. LOUIS DAVENPORT, M. D.

Harper U. S. A. General Hospital,
Detroit, Mich., June 26th, 1865.

We the undersigned, having carefully examined the artificial leg manufactured by James A. Foster of this city, would state it as our opinion that it is unsurpassed by any other in simplicity of structure durability, and cheerfully recommend it to any one who may be in need of an artificial leg.

D. O. FARRAND,
Assistant Surgeon U. S. A., Supt. of Hospital
W. C. CATLIN,
A. A. Surgeon, U. S. A.
W. A. CHANDLER,
A. A. Surgeon, U. S. A.
E. W. JENKS,
A. A. Surgeon U. S. A.

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35 Lafayette St. West, June 28, 1865.

Mr. JAS. FOSTER—Sir: I have examined your specimen of artificial leg manufactured by you in this city, and must concede I have seen no superior in workmanship, and judging from its action as seen in its operation on yourself, it must meet all the requirements necessary for those who need its advantages.

WM. BRODIE, M. D.

Later from Dr. Brodie.

35 Lafayette Ave., Detroit, March 23d, 1870.

James A. Foster,—Dear Sir,—In reply to your letter of March 10th in reference to your artificial leg, I beg to say that I examined your leg in 1865 and have done so again this day. I am free to say I approve the same very highly. I have seen it in use of those who have worn those of other makers, and they tell me they *decidedly prefer it.*

I have ho hesitancy in recommending it to all who need.

I am very respectfully your ob't serv't

WM. BRODIE, M. D.

Detroit, Mich., March. 21, 1870.

James A. Foster,—Dear Sir,—I examined your artificial leg, five years ago, and was satisfied at the time that in it were united all the good qualities to be obtained in an artificial limb. I am also able to testify as to the good qualities of the limbs manufactured by you, having had a number of persons using them under observation.

D. O. FARRAND, M. D.

I have seen enough of the workmanship of Mr. Foster, and of his processes adopted in the construction of his artificial limbs, in his workshop, to justify me in expressing my concurrence in the opinion given by Dr. Farrand of their excellence.

Z. PITCHER, M. D.

March 21, 1870.

Baltimore, Md., April 14, 1869.

I have examined the artificial leg invented and made by James A. Foster: styled the "Patent Union Artificial Limb." The apparatus is ingeniously adapted, very light and apparently durable. I have however never seen it in use.

R. N. SMITH, M. D., Prof. Surgery, Maryland University.

TESTIMONIALS FROM THE PRESS.

The Detroit Review of Medicine and Pharmacy, published monthly, at Detroit, Mich., edited by Geo. P. Andrews, M. D., Samuel P. Duffield, P. H. D., and Edward W. Jenks, M. D., in an editorial in the April number for 1866, said: "We would congratulate the gentleman (Mr. Foster) upon the success he has attained in producing a limb which enables the wearer to walk so naturally, avoiding the sidelong swing which betrays the loss of the natural limb in almost all other substitutes. Mr. F. has introduced a number of improvements, adding to the durability and comfort to the wearer of his manufacture. The external appearance also is very good.

We notice the names of a number of the most prominent surgeons of our State among Mr. Foster's approvers, and cheerfully add our word of support to him in establishing himself among us, confident that any one so unfortunate as to need artificial support, will find in him a friend."

Within a little more than a year a branch of business has been introduced into Detroit, of especial interest at the present time, and always of great benefit to a community. We refer to the manufacture of artificial limbs by James A. Foster. So great perfection has been obtained in the construction of these limbs that almost every unfortunate who has lost a limb, no matter where amputated, can soon walk with comfort and tolerable rapidity. The advantages which a man possessing one has over him who goes about on crutches, are so immense that we should snppose no one would be without whose means enabled him to command it. He is enabled to get about and perform his regnlar work, perhaps not of so great amount as beforebut in any business that does not demand extraordmary activity, almost as much as an able man; the deformity is so slight that it is hardly noticed, and he is relieved from some disagreeable consequences that almost invariably follow the protracted use of crutches. This, in time, affectts the nervous system, the spine and the lungs, besides causing sharp pains and general discomfort and illness. With the artificial arm and hand wonders can be achieved. The wearer, after a little practice, is able to wield it with rapidity and accuracy, and we have seen several specimens of writing done with one that were perfectly legible, and at least equal to that performed by most men with their left hand.

It was natural that during and at the close of the war, attention should be directed more particularly to this branch of art, and that large improvements should be made in the construction of the articles. Already, as we have shown, it has reached such a point that the loss of the limb is hardly felt by the loser, but it is probable that the improvements in this manufacture have a limit which early will be reached, and, indeed, we hardly see how a limb much better than those we have mentioned can well be constructed. The heavy expense of a really good article is undoubtedly [a serious consideration, but all the late improvements should certainly be introduced.—*Detroit Advertiser & Tribune, Sept.* 18, 1866.

James A. Foster exhibits some artificial limbs which are far superior to anything invented; the arm is almost as good as if natural, being susceptible of a variety of motions of the elbow, wrist and fingers. The leg when used cannot be detected. Mr. Foster, the inventor, a practical mechanic, wears one of the legs, having lost one of his, and one would never know it unless told. He moves about with ease and comfort to himself, and the casual observer cannot see anything about the limb. To any one who has lost any of the natural members, the artificial limbs are of inestimable value.—Detroit Advertiser and Tribune. Sept. 17th, 1868.

James A. Foster has a case of artificial limbs on exhibition which attract considerable attention from their naturalness. They are made so as to move with all the freedom of motion which a natural limb has, and can scarcely be detected. The manufacture has been carried to the greatest degree of perfection.—Detroit Free Press, Sept. 18, 1868.

Foster's Patent Union Artificial Limbs.—James A. Foster has on exhibition at the State Fair specimens of his artificial legs and arms. We examined the limbs and can say for them that they come as near nature as anything artificial can, performing with wonderful certainty almost all the functions of the natural limbs. In Mr. Foster's pamphlet will be found certificates from persons who have worn them, each testifying not only to the ease of wearing them, but their durability. We have never seen stronger endorsements. One gentleman who had worn Bly's and others, styles the Foster admirable, and urges all needing limbs to procure it. They are light, easy durable, and what is better still, *reliable*.—Toledo paper), Ohio, Sept. 25, 1868.

Artificial Limbs.—A noticeable feature in the upper part of Domestic Hall, at the Fair, is a case af artificial limbs manufactured by James A. Foster. * * * Some years since Mr. Foster had one of his legs amputated above the knee, and is now wearing one of his artificial members, which he uses with seeming ease. Judging from his gait no one would suspect artificial support. Mr. F. comes well recommended by the press, and what is more creditable, he holds good testimonials from many eminent physicians in the West; also from many who are now using his wares, some who, before taking them, used those of other patents They are believed to be the most practical limbs yet invented.—Rochester, N. Y. Chronicle, October 1, 1868.

Triumph of Human Art.—Some three years ago a German immigrant, Frederick Stockle by name, on his voyage to this country contracted, on shipboard, a disease which, settling in his feet, rendered amputation of both legs necessary. He came on to Bay City, where he engaged in cigar making, laboriously moving from place to place on his knees. Some eighteen months since Mr. Stockle came to this city and procured a pair of artificial legs at the manufactory of Mr. James A. Foster, which he has since worn continually and thoroughly tested. Happening to be in the Tribune office yesterday, we requested him to give us a specimen of his walking, which he did, and many a man with good limbs have we seen locomote more clumsily. In fact without knowing Mr. Stockle's infirmity, no one would have suspected that he was supported by other than his own natural limbs, and in regard to the comfort and durability of the artificial ones he uses, he assures us that he has never experienced any trouble with them whatever. There is very little doubt that Mr. Foster manufactures the very best artificial limbs made, being a scientific man, a thorough mechanic, and himself a wearer of one of his own make We are very happy to know that he is building up a very large custom, and is about to establish branches in various other cities.—Detroit Advertiser and Tribune, Dec. 15, 1868.

We went into the Mechanics' hall. The first thing we became interested in was the Automatic Arm and Leg, made by James A. Foster. These limbs are very nicely constructed, and are so arranged that they can be operated by the action of the body to which they are attached, and perform their functions almost equal to the natural limb, or as near it as is possible for artificial limbs.—Utica, N. Y., Herald, Sept. 20th, 1869.

Artificial Limbs.—James A. Foster exhibited at the New York State Fair, held at Elmira, N. Y., 1869, some artificial limbs. They are very natural, being made to move with all the freedom of the natural limb, as shown by himself, in use on his own person at the Fair. He moves with ease and comfort to himself, without crutch or cane, and the casual observer cannot see anything about the limb. Circulars sent free on application to James A. Foster, Philadelphia, Pa., Cincinnati, Ohio, or Detroit, Mich.—Elmira, N. Y., Gazette, Sept. 17th, 1869.

Mr. James A. Foster, the celebrated manufacturer of the Patent Union Artificial Limbs, is daily receiving flattering testimonials from those who are using artificial limbs of his make. We are always gratified to give good recommendations of good workmanship.—Merchants and Manufacturers' Bulliten, Cincinnati. Ohio, March 3d, 1860.

In 1864, James A. Foster, who shows by his daily walk that he has faith in his own vocation, started a factory for the manufacture of artificial limbs in Detroit. The war, then on its last legs, had created a void that needed to be filled. Mr. Foster, who commenced with little else than his tools, experience and ingenuity, in a short time was overwhelmed with orders. The same firm have also branch establishments in Cincinnati, and Philadelphia.—Detroit Post, May 8, 1870.

WESTERN RURAL, published at Chicago, Ill., and Detroit, Mich., December 22d, 1866, in an editorial, said: Mr. Foster's limbs, as testimonials of surgeons and hundreds who have worn them will show, are unexcelled in America, if not in the world. He is a thorough practical mechanic, and the only manufacturer of artificial limbs in the United States who himself wears a full-length limb, which he uses without a cane. Every department and detail of his business is under his most vigilant supervision, and nothing is spared to render his limbs the very acme of perfection.

DETROIT FREE PRESS, September 12th, 1867, speaking of articles on exhibition in Floral Hall, said: We notice a fine display of artificial legs and arms by J. A. Foster, of Detroit and Cincinnati. These limbs have very flexible knee, ankle and toe-joints, and a facsimile of a letter alleged to have been written by a soldier who has been furnished with arms of this pattern, showing a plain and legible hand writing, better far, might say the typos, than others "we wot of."

LOUISVILLE, KY., JOURNAL, September 20th, 1867, said: We also notice the artificial arms and legs manufactured by Mr. James A. Foster, of Cincinnati, Ohio. They are, seemingly, the perfection of such work, and possess many advantages over most of the artificial limbs now in use. Mr. Foster lost his leg, and studied out the best form of a substitute. He has succeeded in making wooden substitutes that cannot be told from real flesh and blood when they are worn. The Palmer leg and the Bly leg are more complicated, more costly and more liable to get out of order. We saw some writing done by a soldier, who had lost both arms, but used Foster's artificial ones to such a purpose that the writing was better than that of some men who have good natural arms. We were very much interested in Mr. Foster's display, and can refer those afflicted to him for assistance.

LOUISVILLE, KY., COURIER, September 21st, 1867, under the head of "valuable and praiseworthy," said: The premium awarded to Jas. A. Foster, of Cincinnati, yesterday, for the best collection of artificial limbs, was just and right, for at no time in the world's history was there more need of having them to perfection than at the present time. The limbs surpass anything of the kind we have ever examined, and we see no chance for improvement in form, finish or utility. We think that any one who will call on Mr. Foster and examine his improvements will be easily convinced that he has the best artificial leg and arm now manufactured; and as we sympathize with those who were so unfortunate as to lose a limb in battle or otherwise, we would advise those wishing anything in his line to apply to him for a descriptive pamphlet.

OHIO STATE FAIR GAZETTE, September 26th, 1867, said: James A. Foster, 60 West Fourth Street, Cincinnati, Ohio, exhibits in Fine Art Hall splendid specimens of artificial legs and arms. His manufactory is the only place where these articles are made and fitted west of New York and Philadelphia. His make of limbs has been highly recommended by the Surgeon-General of the United States army. Those so unfortunate as to require articles of this kind will do well to take note of this fact.

CINCINNATI GAZETTE, September 27th, 1867, said: Jas. A. Foster, 60 West Fourth street, Cincinnati, exhibits several specimens of artificial arms and legs, manufactured by himself. The exhibitor, unlike the physicians who dislike their own medicines, wears a "leg of his own," and says he is the only manufacturer in America who wears a full length artificial leg, and who was a practical mechanic at the time of amputation. There are many whose good fortune has kept them whole, who look with much interest on these wonderful substitutes for nature's handiwork. Mr. Foster has been located for some time in Detroit, Michigan, where he still has a manufactory.

DAYTON, OHIO, JOURNAL, September 27th, 1867, said: Not far from the center of Fine Art Hall, can be seen an exhibition of artificial limbs from the manufactories of Mr. James A. Foster, 60 West 4th street, Cincinnati, and Jefferson avenue, Detroit, Michigan. Many manufacturers of artificial members have no more knowledge of their occupation than a carpenter. Not so, however, with Mr. Foster. When by accident he was deprived of a leg, he was a practical mechanic, and was therefore enabled to supply himself with a limb of such perfectness as to almost defy detection. Possessing the advantages heretofore enumerated, Mr. Foster claims that he can fit and adjust a limb better than any other manufacturer in the United States, and numerous testimonials substantiate his claims. The specimens exhibited are of superior workmanship, and their design and finish bespeak Mr. F. a genuine artist.

THE MORNING JOURNAL, Published at Columbus, Ohio, September 27th, 1867, under the head of meritorious articles on exhibition at the State fair, said: In Fine Art Hall is to be seen a contribution of artificial limbs from the manufactories of James A. Foster, 60 West Fourth street, Cincinnati, and Jefferson avenue, Detroit, Michigan. The manufacturer, who is a practical mechanic, wears a full length limb of his own make, and its operations are so perfect as to almost defy detection. With the advantages of practical experience, Mr. Foster claims that he can fit and adjust a limb better than any other manufacturer in the country. These limbs are made with great skill, are beautifully polished and are the finest specimens of artificial members we ever examined. Parties desiring full particulars should write and obtain circulars and pamphlets.

THE INDIANAPOLIS JOURNAL, of October 7th, 1867, said: In Fine Art Hall, James A. Foster, 60 West Fourth street, Cincinnati, Ohio, shows some of his patent artificial limbs, leg and arms, which attract great attention, and are really the nicest and most convenient thing in this line ever patented. Mr. Foster wears one of the legs himself, but no one would ever detect it unless told. Any one unfortunate enough to need such a thing will find these the best in the country. He has a depot also in Detroit, Michigan.

THE TERRE HAUTE EXPRESS, of October 4th, 1867, said: James A. Foster has his position in the center of Fine Art Hall with his artificial limbs. These limbs attract the same degree of attention here that they did at the Dayton Fair, on account of their perfection and beauty.

THE MISSOURI REPUBLICAN, published at St. Louis, October 10th, 1867, said: James A. Foster, of Cincinnati, Ohio, and Detroit, Michigan, has on exhibition artificial limbs, including legs, arms, feet and hands. The legs and arms are suited to either upper or lower amputation; and where any one has been so unfortunate as to lose any of the natural members mentioned, these artificial substitutes are of inestimable value. This is one of the achievements of art of great value to unfortunate humanity, which deserves especial commendation.

WESTLICHE POST, No. 16 and 18 Chestnut street, St. Louis, October 12th, 1867, said: We have carefully examined the Patent Union Atrificial Limbs of James A. Foster, of Cincinnati, Ohio, and Detroit, Michigan, and can say with veracity that they cannot be equalled by any other. Nor can all other kind of limbs be compared to Mr. Foster's limbs without life—which cannot be said of those of any other manufacturer, as they are manufactured in such a way as to imitate every movement of the human body. The press in every State and city has recommended them in the most flattering terms.

THE CINCINNATI COMMERCIAL, September 28th, 1867, said: A feature in Art Hall is the display made of artificial limbs, by J. A. Foster, of Cincinnati, whose stand is surrounded by the "boys in blue," who came out of the great conflict with the slave power minus legs or arms; and, as nearly all of these have interesting incidents of ensanguined fields to relate, in which they were maimed, they attract as much attention as the finest pictures in the hall. And some of the questions the soldiers ask of the "leg and arm man" are really amusing.

THE TOLEDO BLADE, of October 4th, 1867, under the head of Notices of a few of the inventions and improvements exhibited at the State fair, Dayton, Ohio, said: Mr. James A. Foster had on exhibition some remarkably fine specimens of artificial limbs. He calls them "Union" Artificial Limbs, for the reason that they combine all that can be wanted or expected in lightness, strength, simplicity of construction, durability, beauty and neatness. Mr. Foster, having been a practical mechanic and losing a leg, set himself to work to find out just what was wanted, and he claims to have accomplished it. They certainly look very finely, and his large list of testimonials from those who have used them—the best possible test—will go to establish his claims. They are manufactured at 60 West Fourth street, Cincinnati, and Jefferson avenue, Detroit, Mich.

A correspondent of the CINCINNATI COMMERCIAL, writing from the Indiana State Fair Ground, at Terre Haute, Ind., in giving a description of the fine arts on exhibition in Fine Art Hall, (which was published in the "Commercial," October 4th, 1867, after mentioning some other things,) says: We come now to one of those tip-toeing crowds, such as occasionally check the current of humanity that flows through these avenues of art, and, adding ourselves to the tip-toe fraternity, we glimpse at one of your Cincinnati men named Foster, but known on the fair ground as the "arm and leg man." Foster wears one of his wooden legs, and displays it to admirable purpose. We saw him kick as high as our head with his wooden leg, and we rejoiced that our chin didn't stop it as it went up.

THE CHICAGO REPUBLICAN, of October 5th, 1867, in noticing the fine arts on exhibition in Fine Art Hall, at the Indiana State fair, said: In this hall is James A. Foster, of Cincinnati and Detroit, with his Union Artificial Limbs. These limbs are far superior to anything invented; the arm is almost as good as a natural one, being susceptible of a variety of motions of the elbow, wrist and fingers. The leg, when used cannot be detected. Mr. Foster, the inventor, a practical mechanic, wears one of the legs, having lost his, and one would never know it unless told. Soldiers and others who have lost their limbs can almost replace them by using the Union.

THE MISSOURI DEMOCRAT, published at St. Louis, October 10th, 1867, said: James A. Foster, the inventor, exhibits his Patent Union Artificial Limbs. Mr. Foster is wearing one himself, having lost his leg at mid-thigh. He moves about with ease and comfort to himself without cane or crutch, and the casual observer cannot see anything artificial. As a proof of the excellence attained by these limbs we have a "fac simile" letter written by a man who lost both arms at Gettysburg, who is now able to handle books, feed himself and to write a legible hand. Those who have been so unfortunate as to lose a limb will be cheered by the knowledge that the loss can be supplied by an excellent substitute. Mr. Foster manufactures these limbs at Cincinnati and Detroit.

THE MANUFACTURE OF ARTIFICIAL LIMBS.—Until a short time since the manufacture of artificial substitutes for human limbs was confined to a few houses in the Eastern States; but when the late war with its attendant consequences had progressed a few months, a great demand for artificial limbs at once sprung up. The few establishments referred to were overrun with, and unable to fill their orders, which multiplied day by day. At that time Mr. James A. Foster, now of Detroit, Mich., then a workman in an artificial limb manufactory, seeing the defects in the articles then produced, gave the subject his entire attention, and invented an artificial limb combining several new and valuable improvements, and constructed, we believe, upon philosophical principles. For his improvements letters patent were granted him August 8th, 1865. He at once established an office in Detroit, and offered his productions to the public. Up to that time the limbs made and sold by other manufacturers gave general satisfaction, for the reason that no better substitutes were known; but soon the great merits of his invention and its superiority over all others manifested itself in the demand for the Foster limb, which constantly increased. So great was the call for them in that locality that in January, 1867, he opened a manufactory in Cincinnati, Ohio, and he has since been solicited to open others in other cities. Mr. Foster exemplifies in person the superiority of his manufacture, wearing as he does, a full length leg, and his gait will puzzle a close observer to distinguish the production of art from that of nature He has lately perfected an artificial knee joint, for which letters patent are now pending through the Mechanic and Inventor Agency. To all those who are so unfortunate as to require artificial limbs, we would advise to consult with Mr. Foster or his experienced assistants, at either manufactory, before ordering limbs elsewhere, or to write for descriptive circulars, which will be sent on application.—Mechanic and Inventor, published at Detroit, Sept., 1868.

Fig. 1.

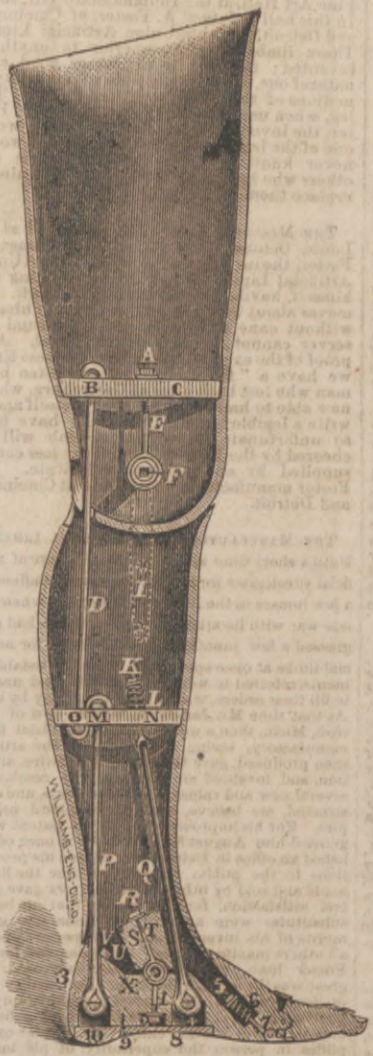


Fig. 2.

Fig. 3.

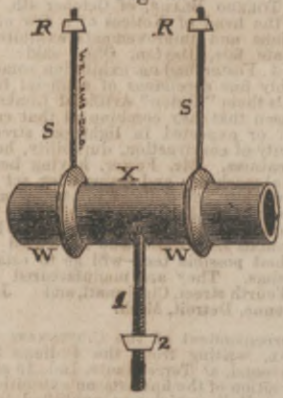


Fig. 4.

Fig. 5.

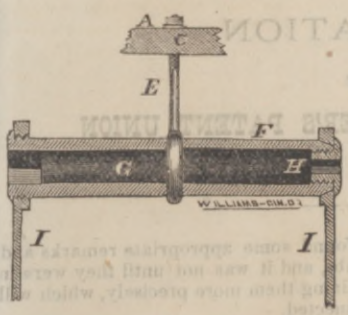


Fig. 6.

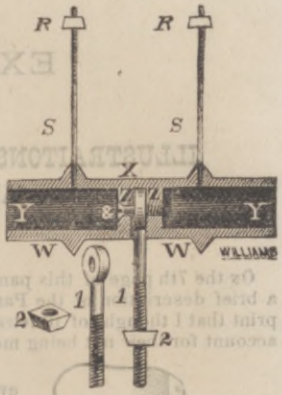
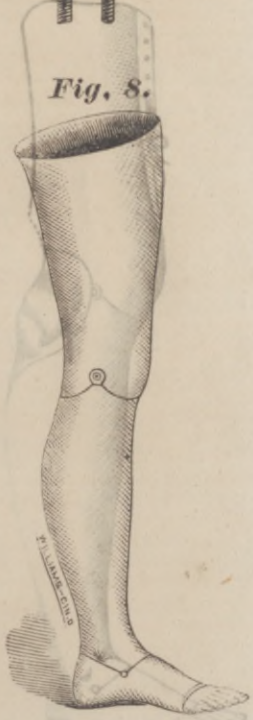


Fig. 7.

Fig. 8.



In reviewing these illustrations and drawings, it should be borne in mind that the internal mechanism is drawn unproportionally large so that they might be plainly seen, and the principle more distinctly understood; for had each part been drawn on a scale proportionate with the external appearance of Fig. 1, some parts would scarcely be visible, consequently at first sight they must appear clumsy and complicated.

EXPLANATION

OF THE

ILLUSTRAITONS OF FOSTER'S PATENT UNION ARTIFICIAL LIMBS.

On the 7th page of this pamphlet will be found some appropriate remarks and a brief description of the Patent Union Limbs, and it was not until they were in print that I thought of illustrating and explaining them more precisely, which will account for their not being more closely connected.

Fig. 1 is a vertical sectional view showing very clearly every part of the interior arrangements forming the operating parts of a leg for a thigh amputation.

Fig. 2 shews the construction of the knee joint, and also the arrangement to compensate for any amount of wear that may ever occur, whereby all tendency to rattle or clatter is entirely done away with by simply turning one nut (A).

Fig. 3 is a view of the apparatus for connecting the foot to the leg and forming the ankle joint.

Fig. 4 shows the foot detached so that I can more fully and distinctly explain the simplicity, durability and superiority of the ankle joint.

Fig. 5 and 6 are longitudinal sections of the devices forming the knee and ankle joint, illustrated in this way for the purpose of having my explanations more distinctly understood.

Fig. 7 represents the external appearance of a leg for an amputation below the knee, and also

A New Mode of Fastening the Leather Socket

above the knee, used instead of the old-fashioned lacing with a string passing through eyelets.

Fig. 8 represents an exterior view of a leg for an amputation of the thigh.

Fig. 9 represents the external appearance of what we call a "knee bearing leg."

Toe Joint.

The toe joint (see Fig. 1 and 4) is articulated in the usual manner as other first class artificial limbs. The motion of which is operated by the spring (6) resting in an opening in the foot, and the action of these are regulated to suit the wearer by simply turning the nut (5 over the spring 6) on the end of the tendon (7) which passes down through the spring (6) and is attached permanently to the toe piece.

The Ankle Joint is constructed very different from any other in an ARTIFICIAL LEG, but since it was PATENTED and brought into GENERAL USE some of the manufacturers seeing the ADVANTAGES it possessed, and the universal SATISFACTION it HAS given, have imitated it as near as they can and not infringe on my PATENT, but their imitations are very IMPERFECT and CLUMSY as will be seen by reference to their partial drawings and SLIGHT specifications.

X (see Fig. 3 and 6) is a cylinder journal made of a piece of steel, turned and polished perfectly smooth, of suitable length and size, with two flanges (W W), the object of which is to keep the foot and leg in their relative positions laterally It is bored out hollow (see Y Y, Fig. 6) like a cylinder which makes it very light, but just as strong and durable as though it was solid and heavier. S S are two bolts screwed and soldered into the two flanges (W W) around the journal (X), provided with screws and nuts (R R) on the upper ends to hold the journal permanently in its proper place. By this method the journal (X) is held closely to the ankle or lower part of the leg, and the articulation is provided for in the foot portion. The interior of the journal (X) is provided with two bearings (Z Z) perfectly fitted and brazed firm in near the center joint, far enough apart to admit of an eye-bolt (1) which the journal (X) receives through a slot cut in the bottom side, wide enough to allow it to vibrate backward and forward to give the foot its proper motion (see fig. 6), shows a small bolt (with a screw on the end) which passes through the upper end of the eye-bolt (1), and is screwed firmly into the bearings (Z Z) in the journal (x) which are all to be seen in Fig. 6.

The foot (see Fig. 4) is provided with a suitable bearing which receives the journal (x) on which the foot oscillates. The eye-bolt (1) passes down through the foot, and is provided with a nut and screw (2) on the lower end of it, which can be screwed up against the bottom of the foot at any time to compensate for any amount of wear that may ever occur caused by the vibration of the foot in the ankle joint.

Knee Joint.

The improvements in the knee joint for thigh amputations are greater and more important. I I are two light steel straps or plates (see Fig. 2 and 5) riveted firmly to the upper end of the inferior leg (see I and dotted lines in Fig. 1). The upper ends are enlarged and provided with suitable apertures to receive the knee axel, which is a hollow or tubular bolt (see G, Fig. 2 and 5) provided with a flanged head, and a suitable thread immediately adjoining said head, which fits and screws into the female screw which is provided in one of the plates (I). In this end of the bolt the aperture is made square (see G, Fig 2) to insert a key to screw the head of the bolt (F) up firmly to the strap (I). The opposite end of the bolt (F) is made slightly conical upon the outside periphery, and is fitted into a conical opening made in the head of the other strap (I) suitable to receive it (see Fig. 5). The interior of this end of the bolt (F) is tapped out and fitted with a short, hollow, flanged head screw bolt, provided with a square aperture (see H, Fig. 2 and 5) into which a key may be inserted for the purpose of tightening up said bolt (H), and thereby forcing when required, the head of the plate or strap (I) more closely upon the conical portion of the end of the bolt (F), thereby keeping it always perfectly firm in its proper place. This bolt (F) after being secured to the straps I I (see Fig. 2) as described, which are riveted firmly to the leg below the knee, passes through the lower part of the thigh portion where the point of junction forms the knee joint and connects the two parts together, as seen in Fig. 1 and 8. E is an eye bolt or tightening lever, the eye of which is provided with proper bushing to prevent wear as much as possible, and after receiving the knee bolt (see Figs. 1; 2 and 5), passes upward through a cross-piece or bearing (C, as seen in Fig. 1), and is provided with a proper screw and nut (A) by means of which the tension upon the hollow knee bolt (F) may be adjusted, to compensate

for any wear in the bearing that may ever occur by simply turning the nut (A), thereby entirely doing away with any tendency to rattle, caused by a worn, loose joint, which is a characteristic of all other artificial limbs now in use, and at the same time secure perfect flexibility.

D (see Fig. 1) is a tendon slightly elastic which arrests the motion of the knee gently in walking, like the ligaments of the natural knee joint, thus preventing all disagreeable sounds and jaring sensations, caused by the solid parts coming in contact to limit the motion as in many legs now in use, and giving it the requisite elasticity.

P (see Fig. 1) is the Tendon Achillis, or heel tendon (made like the knee tendon D), which perfectly imitates the natural one, and its operation and action pertains to and relates only to the ankle and foot as in the natural limb, giving great elasiticity to the step, and an easy and natural motion.

Q (see Fig. 1) is a tendon with a screw and nut (K) on the upper end, which passes down through the spring (L) and cross-bearing (N) which the spring sets on, and is attached to the foot in front of the turning point in the ankle joint, which imparts the requisite motion and raises the foot sufficiently high to pass all obstructions in taking the step; by this method the tension of the cord on the spring to regulate the motion of the foot, can be adjusted to suit the wearer by simply turning the nut (K) over the spring (L). For an amputation below the knee, the stump is perfectly fitted into the socket, and a pair of curved (or straight as the patient may choose) steel joints (see Fig. 7 the same as those that have been so highly extolled by some manufacturers) connect the part of the artificial leg below the knee with a perfect fitting leather socket, which is placed around the thigh just above the knee, and takes the greater portion of the weight of the patient on the thigh, thus gently relieving the pressure on the stump below the knee. Patients with short or tender stumps will readily see the usefulness of this arrangement; and I wish here to call

Particular attention to the manner of Lacing used

on the upper socket of my BEST LIMBS, instead of the old-fashioned way of putting the strings through eyelet holes. I use hooks; they are attached to the upper socket, as seen in Fig. 7, so that when it is laced, the string and hooks are smoother and more even with the leather, so that anything lays over them more even and smoothly than with the old-fashioned way of lacing with eyelets used by other manufacturers. It will be seen that when a string is once laced up and tied to suit the wearer, it need not be untied but simply

Unhooked and Re-hooked

as occasion requires. With this kind of fastening, a leg can be put on or taken off in the dark as well and as quick as a sock or a boot on the natural foot. This will be highly appreciated (especially in dark and cold weather) by those who have worn artificial legs with the old-fashioned way of fastening the socket that comes above the knee joint.

When a Person wishes to buy an Artificial Limb

And has never seen one of my Patent Union (and perhaps no other kind), there are a few questions which would naturally suggest themselves and which he would most likely wish to ask, and I think they might as well be answered here These questions would be about as follows:

What are your Patent Limbs made of?

They are constructed of such a variety of material as most effectually combine to render the greatest amount of strength, durability and utility, and to closely imitate the form and movement of the natural limb. For the foundation I use the English willow, which I shape to correspond exactly with the natural one, and hollow it out to a mere shell—very light. They are covered with a strong rawhide, prepared expressly for this purpose, and firmly cemented to the limb, forming the main element of strength and making a smooth surface to receive the final finish, which is a delicate tinted water-proof enamel or cement, colored to closely imitate nature.

Cork Limbs.

It has been supposed by many that the lightest and best artificial limbs were made of cork, but that is a mistake. I have examined and repaired all the different kinds of limbs manufactured in this country, and as yet have never seen one made out of it. In former times, however, cork, to some extent was used in the bottom of the foot (to prevent as much as possible the thumping sound made when walking with the old fashioned artificial legs) instead of the cushioning used now, and before the cord D (see Fig. 1) was used to limit the motion of the knee (the same as the circular ligaments of the natural knee joint). It was arranged so that two solid pieces came together to form a stop, which answered the same purpose, and cork was substituted for other material to prevent noise as much as possible; and as there was some cork used and the rest of the limb being constructed so extremely light, it was very appropriately called a cork limb, hence the name they are now usually known by, and which I think myself is very suitable and just.

Some thought VULCANITE RUBBER would be the best material to make artificial limbs of, but it has been thoroughly tried in the United States and proved a failure. One heavy manufacturer expended a large sum of money in experimenting with it and then abandoned the project without offering any for sale, as it was found that when a rubber limb was made strong enough for use, it was about as heavy as two made of wood covered with rawhide.

Soon after the commencement of our late war, a man in Philadelphia, Pa., conceived the idea that vulcanite rubber would make good artificial limbs, and (not knowing that it had been tried by other manufacturers and abandoned) a company was organized, and they commenced to manufacture them, and owing to the large number of soldiers losing limbs, there was at the time a large demand for artificial ones, and as this firm claimed they had something new and very valuable, their sales were quite large. It was soon found, however, that they did not prove satisfactory, but as this firm had never manufactured any other kind, they had no former reputation at stake, consequently they continued to advertise very extensively and manufacture as long as they could find any one to buy them.

Lately, in the PROVINCE OF ONTARIO (formerly Canada), a man caught the idea that India Rubber would make good artificial limbs, and not knowing that it had been tried before, supposed himself to be the first to use it for that purpose. Consequently he commenced to manufacture and advertise it quite extensively as being far superior for the purpose and as being original with him, and I think he is sincere in his belief; but how sadly disappointed he must be when he learns from experience that it is a failure, and instead of being in advance with anything new, he is far behind the times, as it had been thoroughly tested and abandoned in the United States. There is, however, at the present time (1871), a leg made by Mr. Marks, which he calls an India Rubber limb. The foot consists of a solid block of wood, somewhat smaller and shorter than the natural one, glued firmly to the leg at the ankle, without any moveable motion there whatever (until it breaks or comes apart), and common rubber is cast over the block of wood to make a foo

the suitable size, which is all the rubber there is about it. Of the advantages or disadvantages this limb has, or of the probability of its proving a success, I do not purpose to speak, but simply refer to some of those that I have made legs for who have tried it, and whose certificates may be found on pages 46, 52 and 57.

Leather for Artificial Limbs.

Has been used to some extent, and it is good as far as it is needed, but to make that the principal ground work it will not answer. It was throughly tried and abandoned years ago, but during the war a company was organized under the name of the Salem Leg Company, and they advertised very extensively that they had something new and a superior article, consequently they sold a large number of them; but as their work did not give general satisfaction their business has been reduced to near nothing, and the last I heard they had about concluded to close up business.

Artificial Limb Manufacturers have tried a large variety of material for their formation, and in addition to vulcanized india rubber and leather, rawhide, steel strips riveted together, and a composition of metals resembling tin and zinc have been tried, but the latest that has come to my notice is constructed of steel which had been prepared for hoop skirts and is woven together like a splint basket.

The discoverers of these new and valuable materials for the formation of artificial limbs are those that have never had any practical experience in the business before, and I think they were sincere in their belief that they had made new and useful discoveries in material for this purpose, and entirely ignorant of the fact that nearly all such materials had been tried and abandoned long before they thought of embarking in such business, consequently they are not to be blamed if they have recommended and sold an inferior article. Though some of them have answered a very good purpose for a considerable length of time, and by the flattering advertisements these comparative new manufacturers kept before the maimed, it is not surprising that many who had never seen them in practical use were induced to try one. It is certain that all manufacturers of artificial legs (but not arms) who have been successful and succeeded for any length of time, have used wood for the ground work, yet it is not true that all who have used wood for the foundation have succeeded in business and in making a first class limb, for there are many other requisites which are wholly lost sight of by the inventors of these supposed new materials for the ground work, and those wishing to buy the best limb, and that is the construction of the limb internally, one being just as essential as the other, and unless both are good the limb must eventually prove to not be very valuable, although if the patient has never had anything any better he may call it a good substitute.

Why an Artificial Limb can be made Lighter,

stronger and more durable out of wood and covered with rawhide is this: there has to be a joint in the toes, one at the ankle and one at the knee, besides places to attach cords, springs, &c.

Where wood is used and covered with rawhide for the shell and ground work, the shell can be made a little thicker where attachments for joints, &c., are needed, while in most limbs constructed of other material, heavy pieces of wood or iron have to reach from one joint to the other (internally) to obtain strength, consequently adding heft and complication without obtaining any advantageous results whatever.

From the number of drawings and the somewhat lengthy specifications and explanations of my Patent Union Artificial Limbs (which I have given that they

might be the better understood), one, after having seen the partial drawings and read the limited descriptions of other manufacturers, would naturally

Ask, are they not very Complicated

and more likely to get out of repair? I think with the aid of the illustrations and descriptions given I shall be able to CONVINCE any one that they are less complicated and least liable to get out of order, and that if from any cause whatever it should need readjusting, it can be done with less trouble and expense than any other first class limb manufactured; if not, I would respectfully invite an inspection and comparison of the various samples of limbs which can be seen at my different manufactories which have been left after pro. curing one of me. Why they seem more complicated is because others are so partially illustrated and so slightly explained, that those unaccustomed to the business, are unable to get a very clear idea of their complications, and can scarcely ascertain how they are made or what they are composed of. On the other hand I have not only given a vertical sectionable view of the leg, but have given sectional views of the joints, and a very minute description showing very clearly how every part is constructed and what it is made of.

Every good artificial leg, for an amputation above the knee, must have three joints—one at the toes, one at the ankle and at the knee, and as persons who most frequently loose limbs as a general thing are young, venturous, energetic, laboring men, and the number of steps required to be taken with an artificial leg made for such a person before he would naturally die would be immense, and it is certain that when one of these joints wear so as to become a little loose, it makes a very disagreeable, rattling noise which is very annoying to the wearer, and warns every one within hearing distance that an artificial leg is worn. These facts are well known to those who have worn limbs made in the old-fashioned way. IN THE ARTIFICIAL LIMBS which have heretofore given the most universal satisfaction, the principle of the joints are nearly the same, the only material difference in the limbs is in the way the cords and springs are adjusted, and as these limbs are mostly imitations and copied from the original limbs invented by Mr. Palmer, I shall use the name of the Palmer limb to compare with the one invented and manufactured by me, not to detract anything from their former merits which have generally been good (as I said on 7th page), but to better illustrate my improvements. It will be seen by reference to Fig. 1, how the tension of the toe spring can be adjusted to suit the wearer, by simply turning the nut (5) over the spring (6), this is a feature which has never been used in the Palmer limbs or any of the imitations, neither is this as essential as

My improvement in the Ankle and Knee Joints.

The apparatus used by Palmer for the ankle and knee joints, look like the one I use for the knee joint when it is put together (see Fig. 2), with the tightening lever (E) left off, consequently I shall use my illustrations to explain them and their deficiencies: The steel strap (1 1), are the same as I use, but the bolt (F) I make five-eights of an inch in diameter to get a large wearing surface,and bore it out hollow (see G, Fig. 5) to make it light, while Palmer makes his only three-eights of an inch in diameter and leaves it solid, and as the wearing surface is smaller the bushing must wear faster, he puts a screw on the end of the bolt (F) opposite to the head to screw into one of the steel straps (1), and in the other end he puts a small set screw to keep the bolt (F) and steel strap 1 in its proper position and to keep it from working loose; the ankle joint is precisely the same only the bolt F is made shorter to correspond with the ankle; the straps(1 1)are riveted to the shell of the lower end of the leg and the bolt (F) passes through the foot. Now, with the MILLIONS of steps taken, and the whole heft of the man and what he carries comes on this bolt only three-eights of an inch

in diameter and less than two inches long, who will doubt but what the joint must eventually wear loose and cause that disagreeable, rattling noise so noticeable in the old-fashioned artificial leg? How, then, is this to be remedied? By sending it to the manufactory and have it repaired would be the natural remedy suggested by the manafacturer, or continue to bear the annoyance as it is. The knee joint being constructed in the same way, the same difficulty and objections arise as in the ankle. The straps(I I)being riveted to the upper end of the leg below the knee, and the bolt F passes through the lower end of the upper part, forming the knee joint as seen in Fig. 1.

Now note the difference in those I manufacture.

Fig. 3 represents the ankle joint I use, as it looks when disconnected with the leg. I have already before described how it is made on pages 11, 12 and 66.

It will be borne in mind that I said the bolts S S (see Fig. 3) and the heads Z Z (to be seen in Fig. 6) were all brazed firm in so as to constitute one solid piece, consequently there are none of them that ever become loose. It is placed in the leg as seen in Fig. 1. T is a small piece of wood left in the leg at the ankle laterally to receive the bolts (S S), which holds the journal (x) firmly to the leg part, while the eye bolt(I)passes down through the foot and receives the nut (2). Now when the ankle joint wears so as to be perceptibly loose, all that is required to make it perfectly tight is simply to turn the nut(2)which holds the foot close to the journal(x), by this arrangement any amount of wear that will ever occur can be compensated for.

By reference to Fig 1 it will be seen how I compensate for the wear in the knee joint. The steel straps (I I),being fastended firmly to the leg part (below the knee) and the eyebolt or tightening lever(E),after recieving the knee bolt F (see Fig. 2), passes up through the cross-bearing(C)in the thigh part of the leg; by this arrangement when the wear becomes visible, by tightening the nut (A) on the end of the eyebolt or tightening lever(E),it will compensate for any amount of wear the same as in the ankle joint. In addition to these precautions for loose joints, the eyebolt or tightening lever which the knee bolt rotates in, the joints are all bushed in the most substantial manner, the same as other first-class limbs.

In the Palmer kind of limbs, the tendon P is fastened and glued in the foot in such a manner that it can not be taken out to be repaired, only by the manufacturer, and by him it is considerable trouble and expense, and it is the same with the tendon D, it being fastened at the lower end by passing a pin through the leg and tendon; consequently, to ever remove the cords, a hole has to be made through the leg to extract the pins, which has been permanently glued in. Now note the difference in the way I put them in: It will be seen that I put them through cross-bearings, and slip a pin through the ends so that they can be easily taken out, repaired and replaced by any one. By reference to Fig. 4, it will be seen that the pins passing through the lower end of tendons (P and Q) and the nut (2), are set up into the foot, and a sele (8) is fitted in so as to cover everything up smooth, and is held firmly in its place by a screw (9). By this arrangement it will be seen how easily it is to get at any of the internal machanism of the foot, by simply loosening the screw (9) and removing the sole (8), while in other limbs the covering to the foot is glued and nailed on permanently, so that whenever it is necessary to get at the interior of the foot the covering has to be torn off and a new one provided each time. This sole (8) is provided at the heel with a cushioning (10) made of sponge rubber, which is very soft, and is prepared expressly for this purpose. In order to limit the motion of the foot, and to prevent overtaxing the spring and tendon, which operate it when walking down a very steep hill or uneven surface, other manufacturers put an iron or brass pin through the leg near the ankle, so that when the foot is thrown forward in the act of taking a step, the upper side of the foot at the heel comes against it, which

forms a stop. This pin often breaks or gets loose and causes a disagreeable noise. By reference to Fig. 1, it will be seen how I have remedied this annoyance. The piece of wood (T) left to fasten the ankle joint to, is shaped to answer this purpose, and to prevent noise, I insert a piece of rubber (U) with this and the cushioning on the heel (10), it entirely prevents that thumping sound usually heard in arrificial legs. Perhaps there has nothing been more annoying to those compelled to use artificial legs than the trouble and expense caused by broken springs. Many ways have been devised, but as yet nothing has been found that can always be depended upon, for metallic is liable to have flaws, and rubber used by elongation, will rot and lose its elasticity in the course of time. Rubber used by compression has been tried and found serviceable for a while, but the way it has been used by confining it in a tube or socket, it becomes compressed and packed solid and loses its sprightliness, and the final result is broken tendons, which is more expensive to repair than a spring. I have adopted a

Simple and very easy kind of Spring to make,

and one that is least likely to break, it being simply a spiral spring made of spring wire and used by compression. Should one ever break, I will furnish all that would be required, free of charge, and by reference to Fig. 1, it will be seen with what little trouble one could be replaced (if ever needed) by simply removing the nuts which hold them in position. On the 11th page I have explained how the cords or tendons used by me are made. Manufacturers and those using differ in regard to the necessity of a

Knee Spring in an Artificial Leg,

while some say they are very essential, others that they are not needed, being about equally divided. But what I say in regard to them I can speak from practical experience, as an inventor, manufacturer, and one compelled to use them, which no other person can do, although there are manufacturers and inventors who have lost limbs below the knee. On the 10th and 11th pages I have given some of my ideas what was required in an artificial knee joint, and on page 67 I explained how I make them in my Patent Union Leg. But to have the matter more fully understood, I claim that when a person wishes to walk fast it is essential to have some method of controlling the action of the leg (below the knee), and the eye-bolt or tightening lever E (see Fig. 1 and 2) answers the purpose admirably. It will be seen that by turning the nut A, that after all looseness is compensated for, it will create a friction on the knee-bolt, consequently a rigidness in the knee joint, which ANSWERS FOR A KEEE SPRING TO FORCE THE LEG FORWARD (while in the act of taking a step); then when the limb begins to straighten, this rigidness causes an easy motion which resembles very closely the motion of the natural leg, thus entirely preventing that spasmodic or jerking motion so noticeable in artificial legs where a rigid knee-spring is used, and entirely does away with the complicated mechanism required to get a comely knee spring inside of the limb. I WRITE THIS WELL KNOWING THAT all other manufacturers, without any exception, will claim and contend that the less friction on the knee-bolt the better it is (and I believe they are sincere in their belief and contention). But from my practical experience in using both kinds, and by the satisfaction it has given when I have put it on those that have formerly used the knee-spring, I know I can substantiate what I say about it, and I consider it one of the most USEFUL INVENTIONS FOR AN ARTIFICIAL LEG for an amputation above the knee since the invention of the Palmer leg. In some of the certificates that I have received from those who are wearing limbs with an amputation above the knee, and have previously used those made by other manufacturers with a knee spring, they make special mention of my improvement in the knee joint, while others appreciate the superiority of the leg but do not mention that particular point. Among those who speak of the SUPERIORITY OF THE KNEE JOINT IN THEIR CERTIFICATES, are Chas.

S. Morton (page 33), E. F. Shepherd (page 38), Frank M. Howe (page 38), J. W. McMillan (page 45), G. V. Stevenson (page 46), and James J. McConnell (page 49) Should anyone doubt what I, and those who have tried it, say about this valuable improvement, and are fearful about trying it, I would say that it can be used in the place of a spring or not, and at the same time it will always prevent the KNEE JOINT FROM RATTLING, and by this method I have a much improved knee joint without a knee spring. But I can and will insert any kind of spring the patient may wish to have. It will be borne in mind that all knee springs in general use are inserted in the interior of the knee, and are so arranged that it is almost impossible for any but a manufacturer to take one out and put it back again, or even to take the knee joint apart in case it should ever become necessary. If I were to advise anyone how to have a knee spring made to be of the most utility and convenience, it would be to take a light piece of elastic web and attach it to the leg just below the knee, then let it pass up and buckle on the straps or suspenders, which holds the leg to the person; in this way it will be handy to adjust the tension of the spring at any time to suit, and when sitting the strain on the spring or elastic web is lessened so as to allow the leg to flex back, and entirely does away with the tendency of the leg to straighten when in a sitting position. This elastic web should be attached to the shoulder strap just below where they unbuckle in front, so as not to interfere with the spring when the straps are unfastened for taking the leg off.

On page 71 I said that in comparing my Patent Union Artificial Leg with others, I would select from those that have given the most universal satisfaction. Consequently I have omitted to say anything about an artificial

Leg with a Lateral or Side Motion

at the ankle joint, which has been claimed by the inventor (Dr. Douglas Bly) to be far superior to anything in use; but practical application of them has PROVED THIS TO BE A FALLACY. The plan of this leg looked so feasible that with the convincing arguments of the Doctor, I am not surprised that Surgeons, committees and those having lost legs should give it their preference (which caused at one time a large demand for them), until it

Was Practically Demonstrated to be Unworthy,

for I was one of them wanting a leg for my own use and regarded it with much favor at the time it was having its largest sales, but I did as every prudent man should, that wants a leg for practical use and comfort, which is to confer with those who have had a practical experience in using different kinds, and not take the statements of the manufacturers, committees and those that have seen some one else use them, or those that have never tried but one kind, for a thing may look feasible and yet put it to practical test, it may not prove what was claimed and expected. I know by practical experience, and can substantiate what I say by hundreds who have tried the experiment, that to make an artificial leg with the lateral or side motion in the ankle joint adds heft and complication to produce that which is not necessary. But suppose its advocates could show any advantages therefrom, I can demonstrate that the heft and complication would more than counter-balance it. By repairing these side motion limbs, I have become thoroughly acquainted with the weak parts, and will mention some of the points of failure, and I think the most of those who have worn them will agree with me; there will be some exceptions, of course, as some of them have done tolerable good service, but as a general thing these lateral motion legs are too heavy and short lived. The ball being small, and having two sockets to play in, will naturally wear so as to let the leg sideward, backward, forward, and in fact most every way. This is caused by there not being sufficient bearing surface. Any one will see that by placing this small ball between the foot and leg, and by cutting away to allow the foot its vibrating motion, that only

a small bearing on the ball can be had; there being nothing to hold the foot to the leg but four cords passing up through the holes in the foot and through corresponding holes in the leg. Now what MECHANICIAN OR SCIENTIFIC man will believe that with all the walking, working and universal wrenching about that is required of an artificial leg, that those cords or the rest of the ankle joint can last for any considerable length of time? These are facts which should be borne in mind when comparing my drawings and illustrations with others.

Those wanting an artificial leg, and yet believe that a lateral or side motion in the ankle joint is useful or profitable, or has any advantages whatever, had better try the experiment for themselves and not take my word (as I am probably somewhat partial) or the experience of others, for the most certain proof is by practically testing it. But I would like to ask such a person, and have him answer satisfactorily to himself, if my patent limb were not really the best in use, how I could have succeeded in creating such a large and increasing demand for them in Detroit (the first city I opened a manufactory in) when the heretofore best limbs were as well known to the surgeons and those wearing them as mine are now? or how I could successfully compete with the older manufacturers in Cincinnati where the most lateral and side motion (or what they call the Ball and Socket or Anatomical) legs have been made and were well known and established before I opened my manufactory there? And why it is that the proprietor (Dr. Douglas Bly) now has to have it manufactured under some other person's name in localities where mine are being introduced? And why, in Cincinnati, where our manufactories are both on one street, he has had to change his salesman on an average of once a year (since I commenced to manufacture there) in trying to find a man that can now sell that kind of a limb (in competition with mine) which he once had a large demand for? Or how I could successfully compete with old established manufacturers in Philadelphia, which place was formerly known as the headquarters for artificial limbs?

An answer to the above questions (as I should give them) can be obtained by a personal interview with any of the vast number who are now using my Patent Union Limbs after having previously tried those made by other manufacturers.

Some might infer from what I have said about the necessity of having an artificial limb so constructed that it could be taken apart or repaired with as little trouble and expense as possible, that it was a complicated piece of mechanism and very liable to get out of repair; but that is not so, and I believe every manufacturer has tried his best to make them strong and durable, and have them put together as though they never intended them to be ever taken apart.

Some manufacturers lacking experience and judgment have made them unproportionately heavy in some parts while they are weak in others, consequently they get a very heavy limb and yet it lacks the very necessary element of strength, consequently the failure in a heavy one, so that if a person choses a heavy leg he is sure to have a burden to carry about while he uses it, but is not sure of its lasting long.

IT MUST BE BORNE IN MIND

That an artificial limb is a very nice piece of mechanism, and when a leg is made with all the joints, tendons, springs, &c., and large and strong enough to stand the hardships required for any kind of business or labor that might be required, and only weigh from three to five pounds, it must be well proportioned and very substantially made; and as I said before (page 71), that most of the artificial limbs made are for young laboring men (as they are the most exposed in dangerous occupations) who procure them so that they may resume their former vocations and earn a living for themselves and families, it cannot reasonably be expected that a limb furnished for such a person would last the remainder of his

natural life and never need be taken apart to clean or repair, for what thing earthly will last always! consequently a limb should be so constructed that if any thing about it should ever need a little repairing, it could be done in the most possible shortest time and at the least expense.

In the drawings and their explanations of my Patent Union Leg, I have endeavored to make them so plain that any one can see they are not as complicated and are less liable to get out of repair than any other limb manufactured, and if from any cause whatever any part should ever need re-adjusting, every piece or part of the leg that there is any possibility of ever getting out of order, can be taken out, repaired and replaced without defacing or injuring it in any way whatever. By this method most any one can do most any ordinary adjusting that it might sometimes need, as I furnish with every leg all the necessary tools for taking it apart.

In comparing my Patent Union Leg with others, and showing wherein I have made improvements in their utility, durability and the advantages it has to keep it in order, &c., I do not wish to be understood that I intend to detract one particle from the merits of the many that have been really good and useful substitutes, but as I said (on the eighth page) that the limbs which have gained the best reputation by their merits, were invented and patented a long time ago, and as art and science have made rapid strides in improving all other mechanical devices, I think it just to suppose that the improvement in artificial limbs should advance in the same ratio, and, as I said before (on the 7th page) I believe I possess the requisite and proper qualifications for making and testing such improvements.

Description of Apparatus for Shortened Limbs.

Apparatus for Shortened Limbs.

At the present time there are many on whom diseases have wrought its baneful results, which demands an appliance which shall alleviate their irremediable deformities and enable the sufferer to use and exercise the deformed limb in a manner likely to conduce to health, ease and beauty of dress. The deformed limb below the knee is inserted in a light case, accurately fitted to the shape of the leg and ankle; it is retained by soft leather bands, laced in front; the foot rests on an inclined plane, so as to reduce the anterior posterior distance from toe to heel; a boot or gaiter, full at the instep, may then be drawn over the whole, and pants of the usual shape and size can be worn and will utterly conceal the deformity. The artificial foot corresponds in size with the foot of the other leg. The artificial ankle joint obviates the excessive limping and physical strain experienced in the use of cork boots and stirrups; it also allows the patient to gain the natural length of step. It is light, strong and durable and when applied gives the patient the proper appearance in dress, length of limb and action of the foot, and enables him to walk a great distance without fatigue.

Repairing and Altering over Artificial Limbs Made by other Manufacturers.

Those having artificial legs made by the heretofore bust (or any other) manufacturers, and have been continually troubled with broken heel, side and foot cords, or feet, ankles, springs, or with loose, rattling ankle joints, (and the rest of the leg good), can have it cut off just above the ankle joint, and my PATENT UNION ANKLE JOINT and foot applied and warranted, at about half the cost of a new leg.

Those that have artificial limbs they cannot wear (caused by fitting or stump shrinking, or from any other cause), can have them newly and satisfactorily fitted or otherwise altered so they can be used with ease and comfort, by applying to either of my manufactories.

As my workmen are men that have had a long experience in working for the (heretofore) best artificial limb manufacturers in America, I am prepared to repair, fix (in any way or shape), or alter over all kinds of artificial limbs of every manufacturers' make, at short notice, on reasonable terms, and in the most durable and satisfactory manner, at either of my manufactories.

J. A. FOSTER.

James A. Foster's

ARTIFICIAL HANDS AND ARMS.

The attention of the ingenious before, and more especially during and since the war which we have passed, has often been directed to the construction of some substitute for a lost arm—something that would be beautiful, graceful, useful and substantial—the result of which has produced a large variety of artificial arms. Some have been good substitutes, while others have been entirely worthless. But as my mind and time has been continually occupied with the improvement and manufacture of my PATENT UNION ARTIFICIAL LEG since its invention and introduction, I have made no experiments in trying to produce an arm which I could call my own invention, consequently I have been a disinterested spectator, and can judge impartially of the merits or demerits of the different experimentors' productions, for I have had ample opportunities for witnessing their application since I commenced to manufacture artificial legs. Having attended many fares, Government examinations and conventions where artificial legs and arms were on exhibition, it gave me a great many additional opportunities to see a great variety of arms when new, when in use, and after they had been worn more or less, and with my practical mechanical judgement, I think I have good qualifications for selecting the best arm for general use.

The patentees and manufacturers of artificial arms have never been to the expense of so fully illustrating and explaining their advantages, &c., as the manufacturers of artificial legs, neither are they willing to pay others for doing it in order to increase their sale, which must be my excuse for saying so much about a leg and so little about the arm which I consider the best for all practical purposes and have made arrangements to manufacture and sell, consequently I will quote their own language in reference to their utility and how they are constructed :

"The arm is fastened to the body by straps attached to cords from the front and back of the arm, passing under and over the other shoulder and buckled. The cord attached to the rear strap is placed just back of the arm, and thence passing into a shell of the upper arm and down over a pulley at the elbow to a connection with the forearm, the contraction exerted by the simple throwing forward of the stump, or even the shoulder, elevates the arm. The cord attached to the strap in front enters the front shell of the arm and passes under a pulley at the elbow joint and thence passes midway through the forearm and connects with the thumb and one or all of the fingers. This power is the reverse of the raising cord, enabling the wearer to throw out the arm at any angle from the body. The thumb and fingers, which are kept closed by means of springs in the hand, can be opened at will, in any position, by the forward or downward motion of either shoulder.

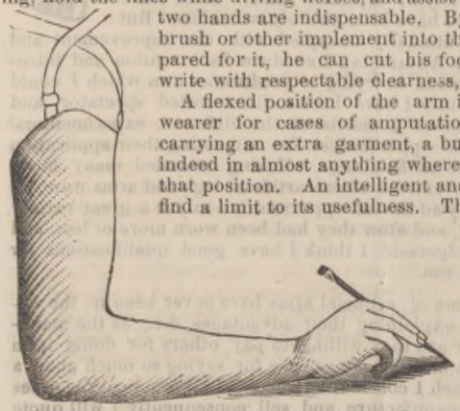
The lightness of this arm is a very important consideration, especially where amputation has left a very short stump.

The subject whose stump is three or more inches in length from the shoulder joint, and retains a healthy degree of force and rigidity, can, with this arm, at will,

raise the artificial hand to his mouth and forehead, and, in fact; he has perfect control of the elbow joint, to throw it forward and back at will, or to hold it in any position he choses.

Arm for Amputation below the Elbow.

The hand and fingers are made in such form as to imitate nature's work, and the wearer can pick up his hat, place it on his head, pick a cigar up from the floor and place it in his mouth, carry a pail of water, or a valise or overcoat in traveling, hold the lines while driving horses, and assist the other hand in carrying where two hands are indispensable. By securing a knife, fork pen, nail brush or other implement into the part of the hand which is prepared for it, he can cut his food and convey it to his mouth, write with respectable clearness, wash the remaining hand, &c.



is cut represents an arm for an amputation above the Elbow.

A flexed position of the arm is secured at the option of the wearer for cases of amputation above the elbow joint, as in carrying an extra garment, a bucket or basket in marketing—indeed in almost anything where the sound arm would be used in that position. An intelligent and persevering person will hardly find a limit to its usefulness. The inventor of these combitations lays great stress upon this feature of the arm, for it readily enables the wearer to use all the strength and ability he possesses to accomplish the various processes of useful labor.

The mechanism is strong and reliable, enabling the wearer to carry as much on the artificial as he would ordinarily wish to carry on the sound arm.

Should any wish to inquire of persons wearing arms furnished by me, I would respectfully refer them to George M. Pratt, Kalamazoo, Mich., whose arm is amputated near the shoulder (Mr. Pratt is a conductor on a passenger train running from Kalamazoo to South Haven, Mich.), John A. Apgar, Lebanon, N. J., whose arm is amputated below the elbow, or to J. R. Snyder, banker, of Chenoa, McLean Co., Ill., whose daughter I furnished with an arm for an amputation above the elbow.

STUMP ARMS.

It often happens that a poor man loses an arm and is not able to obtain the best kind of an artificial one, and wishes to get some cheap substitute, one that will stand the rough and tumble of every-day out door work. To such I would say that he can have a good substitute for considerable less cost. This is what we call a stump arm. It is made strong and durable, and so constructed that the wearer can insert any kind of an instrument for rough, heavy labor, such as becomes necessary for any out door laborer to perform.

JAMES A. FOSTER.

IT OFTEN OCCURS

That some ingenious person invents and patents a useful device, and from a lack of energy, or, perhaps, a pressure of other business, neglects to introduce it into general use, and wants such a remuneration for his invention that no one cares to buy and be to the trouble and expense of bringing it to the notice of the public on the terms the inventor is willing to give, consequently it rests in obscurity for a considerable length of time, and perhaps forever. Thus a great many very useful and valuable inventions are never known outside of the archieves of the patent office, the inventor, his attorney, and perhaps a few personal friends, while many very inferior inventions intended to answer the same purpose have been owned or purchased by more energetic men and vaunted before the public as being superior to anything known, thus causing large sales for the inferior while a much superior article rests in obscurity. Such has been the fate of a patent on an ARTIFICIAL ARM which I have recently bought the right to manufacture and sell.

The Special Advantages

Of this ARM is in the method of actuating the fingers, and its peculiar advantages for being converted from the most useful, desirable and exquisite dress arm, to a stump arm, thus combining all the advantages of a beautiful and dressy substitute as well as those of a stump arm, to which can be fitted any kind of tools which the wearer may find necessary to use in his daily occupation, thus rendering it not only a showy but a very useful substitute for a natural limb.

There are other artificial arms manufactured and so constructed that the hand can be removed for using tools, &c., but with them, when the hand is removed, the tendon which operates the fingers has to be unhooked and rehooked each time, besides loosening the catch which holds the hand to the arm, while the hand to the arm which I manufacture can be separated at the wrist by simply pressing on a knob, removing it without deranging the mechanism for actuating the fingers, which is a very valuable consideration.

Perhaps one of the most novel features about this arm is in imparting motion to the fingers (see Fig. 1, illustrating an artificial arm for an amputation above the elbow). The movement of the fingers are actuated by a pressure pad (as seen in cut) located above the elbow joint on the inside of the arm, which, being pressed against the chest, opens the fingers, and, by relaxing the pressure, shuts them again; yet this arm is susceptible of having the fingers operated in the usual way and retain the other advantages which it possesses.

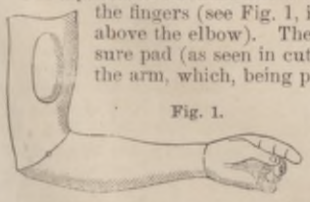


Fig. 1.

Fig. 2 represents a substitute for an arm amputated below the elbow. The mechanical movements are the same as those described in Fig. 1, although the pressure pad is not shown.

Fig. 2.

Fig. 3.

Fig. 3 is a view of a part of the mechanism of a hand, which is capable of all the various movements and purposes to which artificial limbs can be applied.

Fig 4.

Fig. 4 shows the arm with the hand removed, thus changing it from the dress, to a stump arm with a very ingeniously constructed self-adjusting grasping instrument attached for grasping such tools for hard labor as is required to be held more firmly than springs in a hand can be made to perform. It consists of a peculiarily curved fork, to which is jointed a third prong, the short arm of which is provided with a thumb screw for clamping the object to be grasped between the prong and the fork. This instrument can be removed by simply pressing on a knob (the same one used to remove the hand), and any number of tools and implements, such as chisels, screw-driver, knife, fork, hook, a brush for washing the other hand with, can be fitted, or indeed any tool or implement which the wearer may find useful in his daily occupation, thus rendering it capable of being applied to many uses, for which a mere dress arm from the delicacy of its parts is unfitted.

J. A. Foster

911 Chestnut St., Philadelyhia, Pa.
60 West Fourth St., Cincinnati, Ghio.
or 172 Jefferson Avenue, Detroit, Mich.

AN OLD SAYING.

An old saying that "necessity is the mother of invention," has proved a true one in regard to the invention of my

PATENT UNION ARTIFICIAL LIMBS,

for had I not been compelled to want one for my own use, and failing to find one to satisfy my expectation, the invention of my Patent Union Artificial Limbs would never have originated with me.

These limbs were offered in competition with all others then in use, some of which done good service and have been an honor to their inventors, but like all other articles which have been improved, artificial limbs invented and manufactured years ago, have to give way to the latest and most improved.

In the year 1858 I became convinced that I should sooner or later have one of my limbs amputated, on account of a white swelling on my knee. I then commenced to inform myself where I could get the best substitute,—see page 13.

In February, 1860, I had my leg amputated above the knee.

In June, 1862, I went to buy me an artificial limb, but for a good reason I did not.—See page 14.

In November, 1862, I made the first artificial limb I ever used.—See page 15.

In March, 1863, I went to serve my time with an artificial limb manufacturer, and while there in that capacity, repairing all kinds of artificial limbs, of every manufacturers make, and saw where they failed, and the result was the invention of my Patent Union Artificial Limbs.

In Novomber, 1864, I opened the first office and manufactory to manuture my patent Union Artificial Limbs, at Detroit, Michigan. No artificial limb manufacturer before ever met with such gratifying success, for in the short space of time which they have been in use, they are now in use in almost every State in the Union. As the demand for them increased I opened offices and manufactories to meet the exigency, until I now have manufactories at Philadelphia, Pa., Cincinnati, Ohio, Detroit, Mich., and am solicited by many to open offices in other places.

JAMES A. FOSTER.

JAMES A. FOSTER'S PATENT UNION LEG.

Fig. 1.

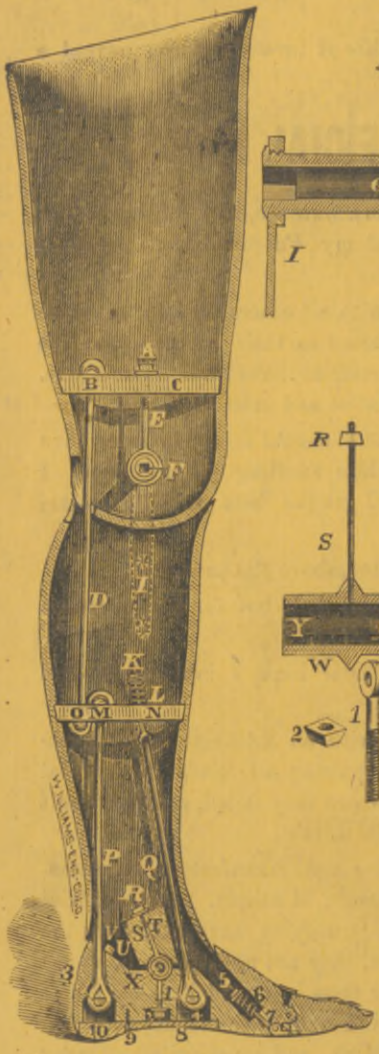


Fig. 5.

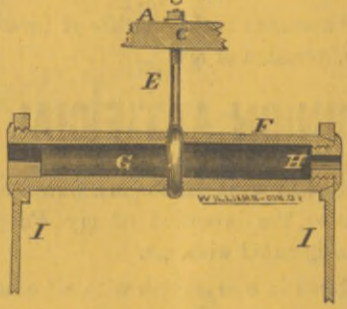


Fig. 2.

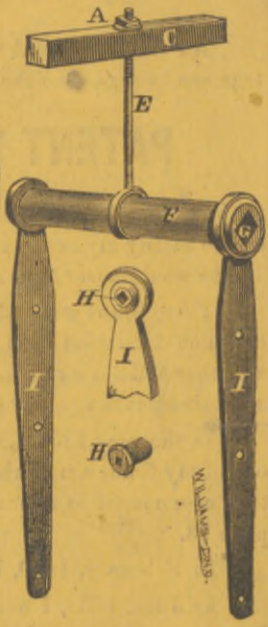


Fig. 6.

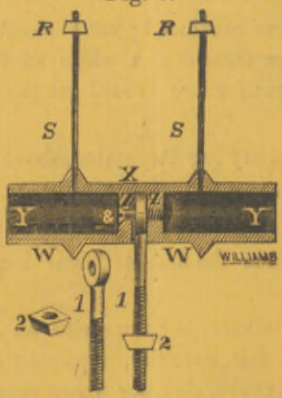


Fig. 3.

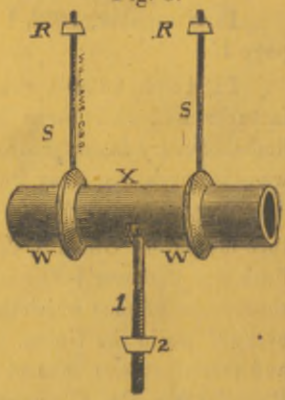


Fig. 4.