Thomas Jackson M.D.
with the Author's respects

PLAIN REMARKS

ON THE

NATURE AND CURE OF

RUPTURE;

A DESCRIPTION OF

The only well adapted and perfectly effectual Instrument.

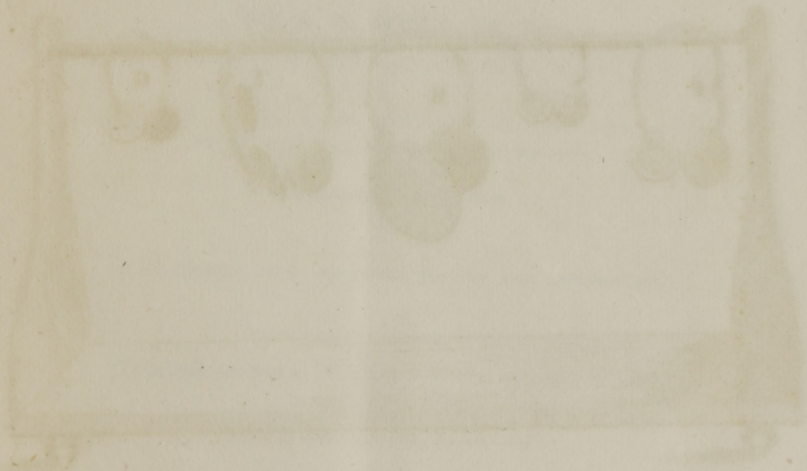
BY A. G. HULL, M. D.

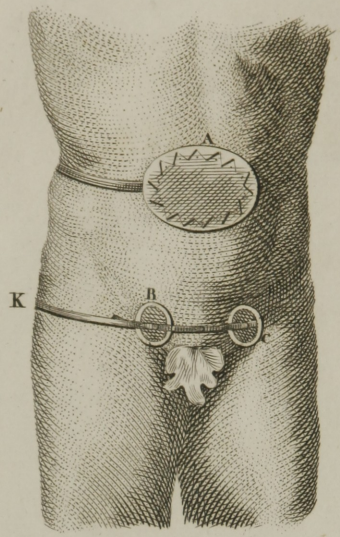
INVENTOR AND PATENTEE,
PERMANENT MEMBER OF THE STATE MEDICAL SOCIETY, AND LATE PRESIDENT OF THE ONEIDA MEDICAL SOCIETY,

109 *Fulton-Street, New-York.*

NEW-YORK:
H. SPEAR, PRINTER, 119 FLY-MARKET.
1826.

The above Trusses is sold by Ebenezer Wright
Milk (opposite) Federal Street Boston

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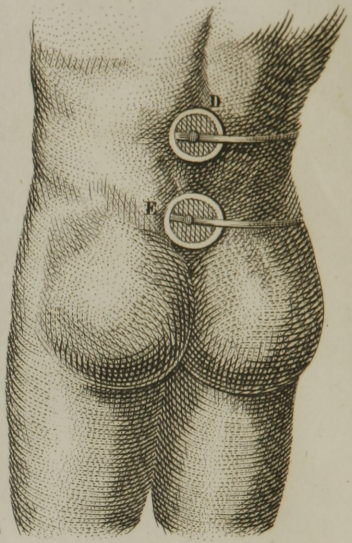
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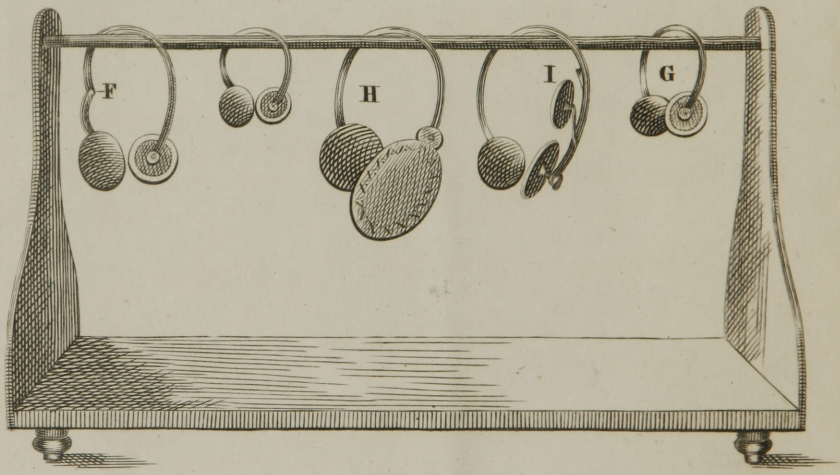
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PRACTICAL ELUCIDATION

OF

THE NATURE OF HERNIA,

TOGETHER WITH SOME REMARKS ON THE

Unfit Instruments

HITHERTO USED FOR ITS CONFINEMENT,

WITH AN EXPLANATION OF

The experience, utility and effectual cures,

OF THE

INSTRUMENT NOW RECOMMENDED.

BY A. G HULL, M. D.

INVENTOR AND PATENTEE,

PERMANENT MEMBER OF THE STATE MEDICAL SOCIETY, AND LATE RESIDENT OF THE ONEIDA MEDICAL SOCIETY.

THIRD EDITION WITH ADDITIONAL MATTER AND TESTIMONIALS.

He maketh sore and he bindeth up; he woundeth, and his hands maketh whole.—JOB.

NEW-YORK:

H. SPEAR, PRINTER, 119 FLY-MARKET.

1826.

PREFACE.

The author of these few practical observations, during twenty-five years' practice in surgery, having witnessed the dreadful consequences incident to ruptures, the indescribable agony attending them, and the loss of many valuable lives, of both sexes, almost uniformly the result of bad and ineffectual Trusses, or neglecting to use any—was prompted by feelings of humanity, professional duty and pride, to devote a share of his time and attention (during the last seven years) to the disease of hernia, and the construction of an instrument for the different species of that disease, and without arrogating to himself superior powers, or intelligence, he is now satisfied that he has brought into successful operation an improved Truss, happily adapted to all cases of ruptures, of both sexes. By his own experience, and that of many others, he does not hesitate to announce to the world the efficient powers combined in his contrivance. The benefits already derived to thousands by the use of this instrument, has given the inventor gratification better felt than can be expressed. The use of this instrument is no longer a subject of doubt or experiment; for the excellency of any useful innovation is always known by its effects. The author feels satisfied in having given to the world an important alleviator, as well as a probable cure, of a disability or disease, which hitherto the pride of professional science has unwittingly too much neglected: and he feels a conscious pleasure that he has not derogated from scientific surgery by making use of mechanical skill. Hereafter surgeons may do more in various other diseases or casualties: with regard to rupture, it is believed, that now all is done that can be even desirable; that which has never been contemplated—a complete cure.

Every benevolent heart will sympathize and rejoice with the author and inventor for a surgical improvement now known and acknowledged as an efficient remedy on the plan of prevention and the only cure of a dangerous and distressing disease, one so common and so little attended to by scientific men that misery instead of comfort has been the result, from want of skill and ingenuity in adapting an instrument. One is now offered and fearlessly declared to be the desideratum of ages and the proved cure of hundreds.

Whatever effect ignorance or prejudice may have upon the minds of individuals, the enlightened part of the profession will acknowledge, as an important acquisition to the healing art, an improvement which has already received the sanction and patronage of many of our most distinguished citizens: and whatever should hereafter be the fate of the improvement, it will ever be to the author a source of conscious pleasure, that it has already relieved much of the distress of his fellow-men, and no doubt preserved to their friends and the community many valuable lives.

TRUSSES.

Among the various causes of human misery, few are productive of so much distress as the disease of Hernia. So long baffled in their attempts to cure the complaint, surgeons appear to have abandoned it to mechanics, and to have confined their research to the best mode of reduction and operation, without thinking it possible to obviate, almost entirely, the necessity of so difficult, dangerous and painful a resource. For the purpose of confining the viscera within the parietes of the abdomen, many differently constructed instruments have been invented, but all without any reference to the anatomy, or physiology of the parts concerned; and it has been a subject of serious regret that they have hitherto proved not only ineffectual, but, in their application to the body, distressingly inconvenient. If we investigate the cause of these difficulties, we shall find them to have resulted necessarily from the method usually employed to fix the pad in a given position, and from the form of this part of the instrument. It must be obvious to every individual, who is in the least acquainted with the mechanical operations of the human body, that any mode of fixture by an encircling belt, must be entirely inefficient; since it must be sufficiently tight to overcome the contractions of the muscles, and impede the motions of the body, or be liable to vary its pressure, and be flung from its position by their alternate contraction and relaxation. Not only the circular belt, but other straps or fastenings are required to retain them upon the rupture opening. These always excoriate and inflame the parts to which they are applied, and with all their complication are inadequate to secure the protruding intestine.

These remarks are particularly applicable to the Truss recommended by Dorsey and Cooper, nor are they the only objections which may with propriety be urged against it. The cushion being immoveable, except with the motions of the spring to which it is attached, is liable to be flung from the aperture in different positions of the body, particularly by those motions which call into action the muscles upon the outer part of the pelvis. The viscera are thus suffered to escape, and are liable to be caught and bruised between the pad and the resisting parts of the body. This has been acknowledged by surgeons of ex-

perience, to be a very frequent cause of the most obstinate strangulation. To these objections, however, the ingenious instrument of Salmon, Ody. & Co. are an exception ; and from the honourable mention they have lately received, are deserving of particular attention. In their mode of application they are similar to those we have presented to the public, and by some have been thought to be not essentially different : but a little attention to their construction, with a knowledge of their effects derived from experience, will be sufficient to convince any rational mind, that notwithstanding they retain their position with a uniform pressure, they still exhibit a train of objections which ought for ever to prohibit their application. The pad of this truss, it will be recollected, is connected to the spring by a ball and socket joint, which is almost unlimited in the extent of its motion. This renders the pad which is oval and convex in its figure, liable in particular motions of the body and aided by the force of the protruding intestines, not only to be rolled on its axis like a wheel, thereby losing its intended position, but to be rolled upon its edge. The gut is thus not only suffered to escape, but the integuments are bruised and injured by its frequent occurrence. This is not mere supposition of what may happen, but is what does actually take place ; and we have seen a most irritable excrescence produced by the edge of the pad, thus bruising the integuments, keeping them constantly inflamed, the patient in torture, and subjected to the danger of strangulation. There is another difficulty which this instrument possesses in common with all others hitherto used, which, if possible, is still worse than that already described : I allude to the convexity of the pad, which resembles the bowl of a spoon, and is mechanically designed, though erroneously, to press into the rupture opening ; thus constantly dilating the aperture, and increasing the difficulty it was intended to remedy. The convexity of the pad of this truss is greater than most others in use, and is on that account proportionably objectionable. When this Truss has been applied, and great pressure was required, we have seen the ring dilated almost to the full size of the pad. It will be further observed, that a greater pressure is necessary to secure a rupture with this form of pad than with one which is flat or concave : for the intestine always searching for an opening, meeting with this convex surface, is reflected from the centre, and when it can find the least aperture between the pad and the walls of the abdomen, will operate upon the principle of the wedge to roll the pad upon its edge. With all these objections apparent, it is somewhat singular, that a learned annotator in this country (though not a native) should have given the preference to this instrument.

We are unwilling to think it was through any predilection for the inventions of his own countrymen, but suppose it to have originated from an entire want of reflection upon its pernicious tendency, and of experience in the proper mode of its application. This we are more inclined to believe, as he does not appear to be aware of the evil consequences resulting from a convex surface applied to the ruptured part, and from the circumstance of the awkward manner in which these trusses are usually applied.* This instrument, invented by Salmon Ody & Co., is, we humbly conceive, intended to extend from the centre of the spine, round one hip, to the rupture opening upon the opposite side, and not, as most persons suppose to apply upon the nearest ring, with the spring playing loosely upon the hip, or turned up over the spine of the ilium, and "resting upon the soft muscles of the abdomen." A truss applied in this manner is not only extremely awkward, but useless: awkward, because the form of the spring would be rendered more visible through the dress, and very troublesome in certain positions of the body: useless, because, without embracing the swell of the abdomen it would be constantly slipping from its position. The double Truss of Salmon Ody & Co. is applied in a different manner from their single. It consists of two springs attached to a single pad which rests upon the centre of the spine. The rupture pad of each spring applies to the nearest abdominal ring. To retain them in this position, it is found necessary to connect the two pads by means of a strap passing from one to the other. This prevents their receding from each other, which any person can perceive would evidently be their tendency, from the slope of the parts upon which the pads are placed. The same would be the tendency of the single Truss, if applied in the manner usually recommended.

I cannot here omit to mention the restless efforts of mechanics, who, while totally ignorant of the object to be attained, are torturing their inventions to discover ingenious principles of mechanical action, the result of which however is invariably an exposure of their ignorance. With a view to obviate all preceding difficulties and to render the rupture pad less liable to slide from its position, Mr. Charles Reade of this city, some 10 or 15 years since, affixed the spiral spring very ingeniously between the pad and belt, for which he procured a patent. Since which, Mr. John Beath of Boston made some improvement on Mr. Reade's

* It is proper to notice that this gentleman having since the first edition of this work, obtained a knowledge of the true merits of this instrument has most ingenuously acknowledged his conviction of its superior advantages.

spiral spring,* and in fact spiral springs variously modified, have been used from the days of Benjamin Bell to the present time; and, in the opinion of the author, arrived to their maximum in the hands of Mr. Reade. But spiral springs fixed to rupture plates, must, if they are allowed any action at all, inevitably tilt them upon their edges, than which nothing can be farther from answering the above intentions; for the equal centre pressure looked for in them, is uniformly defeated by their constant liability to be thrown from it by the slightest impulse made upon one side: a fact well known and confirmed by the complaint of ruptured persons who have worn them, as might naturally be expected in certain attitudes of the body and motions of the muscles. All which complicated mechanism, vague in intention and effect, hazardous and distressing in its progressive use, may now be dismissed for one based on experimental pathology, simple yet appropriate in construction—and at once palliative and curative in its progress; an instrument possessing the utmost perfection of mechanical principles for the treatment of hernia—and at this time of day predicated on the unprejudiced, authentic and highly successful experiment of medical men; and thousands of sufferers, both scientific and uneducated.

It is ascertained beyond the possibility of doubt, that the patentee's form of pad has been lately adopted by the first Surgeons in London, and Trusses of his invention are now manufactured and sold in London, as the *American Truss*. This it is conceived he may name, as a just source of national and professional gratification.

It is a matter of the deepest regret, that circumstances of so much consequence to an unfortunate class of our fellow-men should have been so little attended to in the construction and application of the preventive means for the different species of Herniæ: and that Trusses, combining so few of the principles which lead to the prevention of this calamity, and many of them evidently calculated to increase the difficulty and danger of the patient, should have obtained such general use, and been recommended in so many works of merit, which but tends to propagate error, and to perpetuate that obstinacy of prejudice for which the faculty are already but too justly distinguished.

* A most flagitious attempt has quite lately been made to revive the spiral spring as used by Mr. Beath, by a mechanic of Norwich, in this state, calling himself Bela Farr. Now it seems that this Mr. Farr has added Reade's spiral spring, precisely on the plan of Mr. Beath, to my entire truss; thinking, no doubt, by this subterfuge to cover a silly misbegotten claim to originality! in which he has so far succeeded as to obtain a patent. The venal nature of this transaction will be readily seen by reference to Thatcher's Modern Practice, page 661.

It was witnessing the above enumerated defects of all Trusses, and the dreadful effects attendant upon rupture, which first led us to reflect upon the nature of the complaint, and to search for some more efficient means to mitigate the distress, and preserve the lives of our fellow-men. As a compensation for our research, is the gratification that we have thus far been enabled not only to secure every instance of reducible hernia, but to restore to perfect health a great proportion even of very aged sufferers. In the almost innumerable cases of children when this instrument has been applied, not a single instance has occurred, (within our knowledge,) which has not been cured in less than eighteen months, and few have exceeded six.

In opposition to the opinion of all surgeons, it is found by experience, that there is no necessity for continuing the application of the Truss during the night.* On the contrary, we have thought a cure was hastened by the rest which the muscles obtained while the patient is in a recumbent posture. In this position there is little chance for the descent of the bowel, and even if such an occurrence take place, there is no more foundation for the assertion of Mr. Cooper, "that all hope of a radical cure is destroyed in a moment," than there was formerly for the opinion, that the least motion of a fractured limb would destroy the whole progress it had made in uniting.

The qualities we have united in the Truss, are equally applicable to every species of Hernia, and we can say, without the fear of contradiction, that the proportion of cures it has effected is altogether unparalleled. It may, perhaps, be an interesting inquiry to some, how this instrument produces its effects; and we think, after considering its construction, this question can be answered to the satisfaction of every rational mind. It will be observed, that this Truss presents a concave surface to the rupture opening. The concavity of the plate is occupied by an elastic cushion, the resistance of which is sufficient to reduce the protruding intestine while it is prevented escaping to any considerable distance by the pressure of the metallic plate. Which pressure being greatest at the circumference and diminishing toward the centre tends constantly to approximate the hernial parieties and afford them rest and mechanical support. It is therefore obvious that nothing is suffered to intervene between the lips of the opening, as is the case when the intestine protrudes, or a convex pad is applied, but a fair opportunity is presented for the fibres to recover their tone, or to heal; when any laceration has been produced by violence done to the parts.

*For the safety and convenience of those who may fancy it necessary to wear any thing in the night, the author has invented a Nocturnal Truss, so modified as to maintain the same principle.

It is a law of the animal economy, particularly noticed by Dorsey, that all hollow parts of the body, have a tendency to adapt themselves to their contents.

For the cure of Hernia then, it is only necessary to remove every obstacle which counteracts this tendency. This indication is certainly very far from being answered by the convex pad, and we think it can only be fulfilled by one which shall reduce the bowel without dilating the ring; with this view, we have applied the concave pad, which has more than answered our expectations, in preventing a decent of the gut, and in restoring the fibres, which it undoubtedly greatly facilitates by its constant, uniform and approximating mode of pressure. But without investigating the *modus operandi*, it is sufficient for the patient, and for all practical purposes, for the physician to know, that with this instrument Hernia may always be secured. If applied in cases of umbilical, or congenital Hernia in children, it will in every instance, remove the necessity of an operation. In cases of congenital Hernia, it should be applied before adhesion takes place but not until the testicle has made its decent. If this particular, period should be more carefully observed by surgeons, and the application of the Truss, (instead of being abandoned to mechanics) receive a greater share of their attention, they might be instrumental in obviating much of the distress which has been entailed upon the world.

It is a fact well known to the profession in the County of Oneida, and has been a subject of congratulation in their Medical Society, where the Truss was invented and first brought into use, that from the year 1800 to 1819 from three to five persons were annually the subjects of operations from strangulated Hernia: and that from the year 1819 to 1822, not a single case had occurred within the knowledge of any individual member of the society. This surprising alteration was attributed, solely, to the general use of the instrument now under consideration.

With all these facts before the public, we are sorry to observe, that many of the faculty are still determined to be sceptical, and to persevere in giving the preference to the convex pad. It is a knowledge of this fact, and we trust, a just sense of the duty we owe to the public, which has induced us to make so many observations in recommending our own improvements. We are not unconscious that the malicious may attribute it to a less worty motive; but as we have thus far, (in introducing what we consider a valuable instrument,) had the mortification to encounter the sneers of our brethren, and the independence to disregard them, we shall not probably at this late period, shrink from the task assigned us, "*through fear to cope malicious censure.*"

A. G. HULL

MODE OF APPLICATION.

After having stated the manner in which we conceive this Truss produces its effects, and the authority in testimony of its superior utility, we deem it important to make a few remarks, particularly regarding its application. This is the more indispensable, since surgeons, who alone are sufficiently acquainted with the different species of the disease, the anatomy of the parts, and the proper adaptation of the Truss, have abandoned their charge to apothecaries, and men entirely ignorant of the complaint. We also find that the most ingenious surgeons, misguided by the instruments formerly in use, and forgetting the important principle, that the pressure should be made perpendicular to the rupture, have very frequently applied them upon the wrong side of the patient. In this manner the spring projects some inches beyond the body, (unless it is much smaller than it should be when properly applied) making a very unseemly appearance, and by flinging the pressure upon the edge of the pad, destroys the principle of the instrument. For the purpose of rendering these instruments less liable to be wrongly applied, these remarks are accompanied with a plate representing them as adapted to the different species of Hernia.

H—represents the umbilical truss;

A—the situation of the rupture pad in umbilical Hernia, resting with its centre directly over the rupture opening. The spring of the pad passes close to the side, as represented by the plate.

D—represents the situation of the back pad upon the centre of the spine in corpulent persons, but a little beyond on spare or emaciated.*

I—is a representation of the Double Truss, when upon the body the principal part of the pressure is made upon the end

* Except in cases where the greatest pressure is required, the counter pad should be made to rest on the muscular cushion on each side of the spine.

pad, C; that should, therefore, be applied to the worst rupture. The degree of pressure upon the second pad, B, is regulated by a cork wedge, which is made to slide between the main spring, and small spring, to which the second pad is attached. The application of this Truss is represented by the letters K B C. The back pad resting upon the sacrum, as shown by the letter E. The rupture pads should apply immediately over the rupture opening, the lower edge just touching the edge of the pubis. The spring should pass in a horizontal line, and be neither so large as to be inconvenient, or so small as to press upon any part of the body. The force of the spring should be sufficient to keep the gut always reduced. The greater pressure the patient can bear, the more perfect is his security and the greater prospect of radical cure.

G—represents the single Ing. Truss; it differs in no respect from the double, without the addition of the secend pad. If the rupture be in the right groin, this Truss comes on from the left side, as represented by K. And the same Truss reversed for a rupture in the left groin.

Fig. F—represents the instrument as applied in fermoral Hernia. The curve in the spring at F, is for the purpose of dropping the rupture pad lower in the groin, while the back pad retains the position E. In these cases it will be generally found necessary to turn up a little the upper and lower edge of the pad to prevent its chafing the integuments of the abdomen and thigh.

If proper attention is paid, it will not be difficult to mistake the application of this instrument. The one first applied may not be the best adapted, but the opportunity afforded of trying the several degrees of pressure will at least secure the rupture, if it does not go to the extent of cure.

PERSPECTIVE VIEW OF THE TRUSS.

The great desideratum in all improvements of mechanical instruments, is to make a paramount combination of simplicity of structure and facility of effect.

The Patentee respectfully invites the attention of all persons versed in the surgical anatomy of the parts concerned, to the fol-

lowing brief exposition of the distinctive merits of this Truss.

Firstly. The concave internal surface of the rupture pad; from its pressure being greatest at the circumference, tends constantly to approximate the hernial parieties, affording them rest and mechanical support.

Secondly. The combined hinge and pivot mode of connection between the *spring* and *pad*, by means of a tenon and mortice so constructed as to preserve a double hinge and limited joint, acting in every direction, thereby securing the uniform pressure of the spring on the pad, and sustaining the same nice coaptation of the pad and rupture opening, as well under the varied ordinary desultory muscular actions, as when the body is in a recumbent posture.

Thirdly.—The graduating power and fixture of the pad to the spring, rendering, as will be readily perceived, the position of the pad perfectly controllable, even to nameless minuteness. Also resulting from this mechanism, is the advantage of accommodating a large truss to a small person: hence the *facility of supplying without disappointment, persons at a great distance.*

Fourthly.—The Double Inguinal Truss; being simply the addition of another pad, attached to a short elastic metalic plate; this plate with its pad move on the main spring by the same power of adjustment and fixture as the first pad, the pressure of the pads being graduated at pleasure by an intervening cork wedge.

Thus, dismissing all the complicated mechanism of straps, belts and spiral springs hitherto used, and but too often ineffectually used, is this distressing class of hernia managed with the same ease and certainty of success as the single rupture!

In the investigation of the virtues of this instrument, it is with the utmost assurance that we advert to several years successful experiment, the only true basis for assertion:—

And hence the Patentee hesitates not to affirm, that, in combining its qualities, such advantage has been taken of mechanical principles, as to leave neither necessity nor possibility of improvement. Late accounts from professional men, as well as my numerous agents, together with my own experience, warrant the highly interesting and auspicious conclusion, *that the complete cures which are effected on persons from* 40 *to* 75 *years of age—may with safety be computed at an average of* 1 *in* 3—AND UNIVERSALLY ON CHILDREN!

The Patentee is truly gratified that the success of his Truss has given them an introduction to the navy and army of the United States. The approval and recommendation to general

use by the Medical Societies of the State of New-York, and by many of the most respectable Medical Institutions, as well as medical practitioners in this and most other states, should be sufficient.

Extract from the Minutes of the Medical Society of the City and County of New-York, May 10, 1824.

FELIX PASCALIS, M. D. from the committee, (consisting of VALENTINE MOTT, M. D. JAMES R. MANLEY, M. D. JOHN C. CHEESEMAN, M. D. and J. KEARNEY RODGERS, M. D) to whom was referred Doctor A. G. HULL's communication and Trusses, reported favorably of the same, and a copy of said report was ordered to be furnished to Dr. Hull on application.

COPY OF REPORT.

The Committee to whom was referred the communication of Dr. Hull, respectfully report.

That they have examined with a considerable degree of attention various models of the Truss of Dr. Hull, submitted to their inspection, and give it as their opinion that this new kind has the following advantages over all other Trusses, known to your committee, viz : It has a *hinge* motion in place of the simple pivot motion which obtains, in all the most approved of the kinds. The shape of the pad itself being rather concave than convex, presents advantages that must be obvious to the attentive surgeon, inasmuch as its pressure is made upon the side of the ring rather than upon the centre of the Hernial Tumour itself, but perfectly safe ; and in case of double Hernia requiring double pad in one Truss, the fixture of a wedge spring in order to graduate the pressure of the nearer pad has hitherto been considered a great desideratum in all kinds of Trusses, and gives to this a manifest advantage over all others that have been or continue to be in use. All which is respectfully submitted.

(Signed) FELIX PASCALIS, Chairman.

New-York, May 7, 1824.

Extract of a letter from Dr. Caleb Samson, enclosing the certificate of the members of Oneida Medical Society, and other well known gentlemen, whose names have been given in recommendation of the Instrument.

New-Hartford, March 24th, 1821.

Dr. A. G. HULL—Dear Sir—Having known several complete cures effected by your *Hinge Truss*, I cannot conscientiously omit

any endeavours to extend its use. It unites, to a degree hitherto unknown, the useful qualities required in an instrument of this kind.

The enclosed certificates of the members of the Medical Society of this county does not derive its value from its number, but from the worth of the signers; to which I add with great pleasure, the concurrent opinion of many of our most distinguished citizens, and am with sentiments of esteem and respect,

obedient,

CALEB SAMSON, M. D.

Certificate of the members of Oneida Medical Society.

We, the undersigned members of the *Medical Society of the County of Oneida*, sensible of the indefatigable exertions of our President, Dr. A. G. Hull, in inventing and bringing into use his valuable Truss: and repeated instances having come within our knowledge of its effecting radical cures on very aged people, who had been ruptured the greater part of their lives, render it, in our opinion, superior to any other introduced in Europe or America. We most sincerely congratulate the public on an improvement so well calculated to relieve the distressed, and to save the lives of many valuable citizens.

ARBA BLAIR, *V. Pres't.*
LAURENS HULL, *Del.*
SETH S. PECK, *Secretary.*
SETH HASTINGS, Jun. *Tr.*
ELNATHAN JUDD, }
CHARLES BABCOCK, } *Censors.*
EZRA WILLIAMS, }
JOSIAH NOYES, *Prof. of Chem. Ham. Coll.*
SEWALL HOPKINS,
MARCUS HITCHCOCK,
SETH CAPRON,
CALEB SAMSON.

Certificate from the Hon. Ezekiel Bacon, Hon. Morris S. Millen, Hon. Nathan Williams, Hon. Thomas R. Gold, Hon. W. Kirkpatrick, and the Rev. S. C. Aikin.

We are happy to join with the above gentlemen of the faculty, in congratulating the public on an invention so beneficial to the community as Dr. Hull's Truss—are gratified to state, that we are acquainted with the fact, that a number of aged and respectable citizens of our vicinity, from the use of this instrument have experienced radical cures; and that the unfortunate class of people labouring under the distressing disease of rupture, are presented with flattering prospects of relief and cure, from the use of the same.

EZEKIEL BACON,
MORRIS S. MILLER,
W. KIRKPATRICK,
THOMAS R. GOLD,
NATHAN WILLIAMS,
S. C. AIKIN.

The following is from the undersigned Professors of the College of Physicians and Surgeons of the Western District, Fairfield, New-York.

This certifies, that we have examined the Patent self-adjusting Hinge Truss, invented by Doctor Hull and have no hesitation in stating, that in our opinion it is far superior to any now in use. A simple mode of application, a constant, easy, and an effectual pressure on a given point, without liability to be displaced, or to impede the free motions of the body, are qualities which it unites. These are qualities not to be found in the ordinary kinds, and which entitle his invention to the entire approbation of physicians, and to the notice of the public.

College of Physicians and Surgeons of the Western District.

JAMES HADLEY, *Prof. Chem. &c.*
WESTEL WILLOUGHBY, *Prof. Obstets.*

Extract of a certificate from Nathan Smith, M. D. C. S. M. S. London, Professor of the theory and practice of Physic, Surgery, and Obstetrics, Yale College.

This may certify, that I have examined Dr. A. G. Hull's self adjusting Patent Hinge Truss, and have applied it in several cases of Hernia. From my knowledge of the principle on which it acts, and from its effects, I do not hesitate to give it a decided preference to any thing of the kind I have ever seen.

NATHAN SMITH.

Extract from the published transactions of the New-York State Medical Society—SESSION 1823.

"The Committee report, that from an examination of Dr. A. G. Hull's Truss, that they have no hesitation in stating, that from the entire new principles on which it acts, with the effective qualities which it unites, it is far superior to any other in use, and, in their opinion, is entitled to the entire approbation of Physicians, and the encouragement of the public."

Doct. JAMES THACHER, of Plymouth, Massachusetts, author of the American Dispensatory and Modern Practice, has politely furnished the patentee with a high encomium of the superior efficacy of this Truss, on his own person, as well as others, and requested of the patentee an article on the subject for his new Edition of Modern Practice, for which polite attention and

frank acknowledgement, Dr. Thacher will please to accept this public acknowledgement of Dr. Hull's thanks.

Since the above, the following has been received.

"In compliance with your desire I hereby inform you that I have for several years *experienced* the great utility of Dr. Hull's hinge Truss. It is in my opinion well calculated to effect all the valuable purposes to be expected from any instrument of that kind. Its facility of adjustment, firmness of support, ease and convenience in all the attitudes of body, are properties by which it surpasses all others which have fallen under my observation; and I feel it incumbent on me to recommend to all who may be afflicted with Hernia, to have recourse to this *invaluable* instrument as a safeguard against accidents of a fatal tendency."

I am your friend, &c. JAMES THACHER.

Plymouth, Dec. 14, 1825.

Medical review and Analetic Journal for April, 1825, *conducted by John Eberle. M. D. Member of the Am Phil. Society; of the Med. Chirurg. Society of Berlin; of the Academy of Nat. Sciences Philadelphia, &c. and George M'Clellan, M. D. Lecturer on Anatomy, Physiology and Surgery.*

Dr. Hull on Hernia. About 10 months ago, the attention of one of the editors of this Journal was called to Dr. Hull's New patent hinge truss by the following circumstance: An eminent merchant from Charleston had been under our care, during a few weeks, for an affection of his head. On taking leave he observed that he thought it a duty which he owed to the interests of humanity to make known to us the great advantages he had experienced from the use of "the New-York truss." He had been afflicted with an inguinal hernia several years, for which he had consulted many surgeons in this country and in Europe, and applied every kind of truss that could be obtained without being able to prevent the disease from returning on the slightest exertion. A few months before he came under our notice, he had consulted Dr. Hull, in New-York, who applied the new hinge truss with such perfect success that no descent of the hernia had ever afterwards occurred. The most interesting circumstance in the case, however, was, that no inconvenience had been experienced from the use of the instrument, which the gentleman recommended to us as by far the most excellent one that had ever been applied on his person. The warm and urgent recommendation of our patient induced us to procure a number of the instruments thus alluded to, for the purpose of giving them a fair trial under our own immediate

observation. We have since that time applied them upon eight different patients, two of which were afflicted with double scrotal hernia. The results of our experience have been so satisfactory that we cannot avoid offering our testimony in favour of the new truss, which we consider as altogether the best which, we have as yet been made acquainted with.

The New-York Medical and Physical Quarterly Journal, No. 15 for Sept. 1825, edited by John B. Beck, M D. Fellow of the College of Physicians and Surgeons of New-York, and corresponding member of the Medical Society of London, &c. &c. Daniel L. M. Peixotto, M. D. and John Bell, M. D. Professor of Anatomy and Physiology in the University of Vermont, and Surgeon to the New-York Eye Infirmary.

We take some share of reproach to ourselves for not having before this noticed the very great improvements made by Dr. Hull in the construction of trusses. The truth is, it is only recently that our attention was particularly directed to the subject; and we were surprised to find how vastly superior the invention of Dr. Hull was to any instrument of the kind which had heretofore come within our knowledge. The principle on which it is constructed, appears to us to be equally just and original, and the very gratifying success which has attended its application, abundantly confirms the soundness of the theoretical principles by which it was suggested.

Amos G. Hull, M. D.

Dear Sir—Since our interview at my house, I have the satisfaction to inform you that I have been cured of a rupture of 15 years continuance by the use of your Truss. I found on the first trial that it was more effectual in retaining the bowel than any instrument I have ever used. I soon found that a favorable change had taken place and I supposed myself cured. About this time I was reduced very low with Typhus fever, as I began to recover I again found appearance of the rupture. I applied the Truss again and in a few weeks found myself cured. I continued the instrument about one year when I left it off and for the last three years have been quite free from the complaint. I am respectfully your Friend and Sevt.

SAMUEL B WOODWARD, M. D.

Wethersfield, (Conn.) June 1, 1824.

Dr. A. G. Hull,

Dear Sir—My partner, Dr. Nash, has been ruptured from his infancy up, and found no effectual means of relief till he applied your Truss, and says it has been one of the greatest comforts of his life, and to all appearance has effected a cure.

DAVID HULL, *Fairfield, Con.*

The patentee is gratified, as well on his own account, as for the credit of medical science and the utility of the public, to be able to add to former certificates, the following depositions; which, together with oral testimony of many surgeons, obtained for him a verdict, under Judge Thompson,* of the United States Court, on an action brought by the patentee against Lee and Hopkins, of Hartford, Con. of whom he recommended damages, for selling Farr's Trusses, so called, made in imitation of his truss, much to the expressed satisfaction of judge, jury and auditors. The result of this trial it is hoped, will be a warning to all invaders, and a caution to medical men and medical societies against giving countenance to imposition and fraud, by encouraging with their recommendations, mechanics and pretenders, much to the discredit of the profession, in the sale of mutilated instruments, made in imitation of the patentee's Truss. as in the late instance of the pirated instrument of Bela Farr.

I VALENTINE MOTT, of the city of New-York, Doctor of Medicine, do affirm, that I have, for several years past, paid much attention to the construction and use of Trusses; and it gives me pleasure to state, that the Truss, invented by Dr. Amos G. Hull, possesses in my opinion both in structure and principle, qualities and advantages, which are entirely original, and which render its application, in all cases, an efficacious remedy to prevent a descent of the bowel, and that in most cases it may be applied with a reasonable prospect of cure. These advantages and qualities consist in the concave form of the rupture pad towards the diseased part; in the limited mobility of the hinge and shoulder joint; in the new mode of regulating and adjusting the rupture pad on the spring by means of a mortice or eye, with its accompanying screw, without perforating the spring, and in the great advantages of the double truss in applying Dr. Hull's principle to a rupture in both groins, and regulating the position and pressure of the additional pad, by means of its moveable graduating spring and cork wedge. I can confidently say, and do confidently say, that I consider the above enumerated qualities and advantages original and peculiar to Dr. Hull's Truss, never having seen or read of them, or either of them before the invention and introduction of that instrument.

The great and signal benefits which are produced by this

* Judge Thompson in his charge to the Jury, expressed a strong opinion upon the facts in favour of the novelty and importance of the invention, and remarked that there were meny patents obtained for trifling purposes, but that this was highly important and meritorious, and deserved the proiection of the community, and that in his opinion, the invention was well described in the specification.

Truss result from its strict subservience to and accordance with scientific and surgical principles. Its mechanical adaptation to the parts, the simplicity of its construction, the limited motion nicely graduated by experiment to the different attitudes of the body, and to the action of the muscles; the permanency and security of its location on the body, and its pressure in the circumference of the abdominal ring, are qualities, the tendency of which is to strengthen and restore the weakene parts, to contract the aperture, and ultimately to accomplish a cure of the disease.

The operation and effect of this Truss is therefore directly the reverse of all trusses formerly in use, which being convex, tended to enlarge the dimensions of the rupture opening.

Until I was acquainted with Dr. Hull's instrument, I was in the practice of using Salmon Ody & Co's Truss; but the unlimited ball and socket motion, as well as the convex form of the rupture pad, render that truss in many cases ineffectual to secure the hernial protrusion, in consequence of which, its use is always injurious, or at least unsafe. These defects are well overcome by the principle embraced in Dr. Hull's invention, and experience has confirmed me in the great and superior utility of his instrument, which I have recommended to general use, and adopted in my own practice to the exclusion of all others.

I am of opinion that the union of physical design and mechanical structure in this instrument render it what has long been the desideratum of practical surgeons in Europe and America. And that the structure of this instrument, and the principle embraced in its mechanism, are new in their application to the disease of Hernia, and originated with Dr. Hull. And further saith not.

VALENTINE MOTT, M. D.

Samuel L. Mitchill, deposeth and saith as follows, viz. Having been requested to give an opinion concerning the Truss invented by Dr. Amos G. Hull, I state it as my belief, that he hath succeeded in making a valuable and important improvement in the construction of that piece of remedial apparatus. On examining the same, and considering the language of his letters patent, under the authority of the United States, it seems to me that it possesses qualities different from any other instrument or thing called by the same name, or employed for a similar purpose.

Among its excellencies and peculiarities, I mention the concavity of the rupture pad, the manner in which it is connected with the spring, the mode of adaptation to the diseased part, the ease and flexibility of its various motions, and the two-fold or

double form of it wherever the patient's case requires the employment of a rupture-pad to each groin. It appears to me, that in these several points or particulars, there is something so different from the other trusses I am acquainted with, that the patentee may really be considered as having discovered what was not known before, and therefore entitled to the benefit of an invention as secured to him under the act of congress, granting exclusive privileges for a term of years, pursuant to the provision of the constitution of the United States.

Upon full consideration of the matter, I view this invention, discovery and improvement, under the modification and construction of the said patentee as fairly and fully his, as any thing of the kind can be made, under the patent law and his specification. And further saith not.

SAMUEL L. MITCHILL, M. D.
Physician in the City of New-York, and a Professor in the University.

I, JOSEPH EVANS, of the City of New-York, being forty-five years old, do affirm and say, that about seven years since I became ruptured, and I applied to a celebrated physician, Dr. Philip Sing Physick, at Philadelphia, who informed me I *could never be cured*, but that I could get a truss, which would keep up my bowels; accordingly procured one, which I discovered to be Dr. Hull's patent Truss, altered by the seller of it for an improvement but which I found after wearing it, quite insufficient even to make me comfortable; with no prospect of any *cure*, I then applied to Dr. *Hull* in person, who furnished me with one of his late patent hinge Trusses, and after wearing about three months, I found myself entirely cured, so much so, that I can walk about with *safety*, without wearing the truss: in fact, after wearing the truss as mentioned six months, I considered myself cured complete, and in my *opinion*, it is one of the greatest blessings and improvements to mankind that is known; and I am much pleased to give this certificate in favour of the worthy inventor of said *truss* in question, and I do most confidently believe that Dr. Amos G. Hull is the sole inventor of the truss in question.

JOSEPH EVANS, 35 *Ferry-street.*

I, SAMUEL AKERLY, M. D., practising Physician of the city of New-York, and Member of the County Medical Society of the same place do depose and say, that I have examined the trusses made and invented by Dr. Amos G. Hull, late of Utica, but now of the city of New-York, and consider them an improvement on all former trusses, and admirably well adapted to the different forms of Hernia or rupture. I further depose that I approve

of the report made to the Medical Society, in May, 1824, by a committee, consisting of Drs. Pascalis, Mott, Manley, Cheeseman and Rogers, in which report the said committee gave the preference to Dr. Hull's Trusses over all others which they had seen or examined; and I believe that the opinion of physicians in this place is generally in favour of the same. The deponent further saith, that in August, 1824, he made drawings of the several forms of Dr. Hull's Trusses, and the several parts thereof, to accompany a specification for a patent to embrace a former patent and all his subsequent improvements, whereby the deponent became acquainted with the minutiæ and detail of the invention of Dr. Hull and the improvements which he claimed as his own. Among these are, firts, the pressure of the pad upon the rupture, by means of a hinge motion, and not that of a pivot as in other trusses; second, the shape of the pad-plate and the pad itself, both of which are concave. This concavity of the pad of Dr. Hull's Trusses is a new and important principle, and appears to be peculiar to him and to belong to his invention. By the concavity of the pad, the pressure made by the spring of the truss is applied to the sides of the hole or opening through which the intestines descend, thereby tending to cure the Hernia, by closing the opening; whereas by the pads of all other trusses being convex, they press into the opening and enlarge it or prevent its closing. Third, the pressure of Dr. Hull's Trusses is regulated by a moveable spring and a sliding wedge attached thereto, and this may be applied to the single or double Hernia or rupture, but is particularly well adapted to a rupture on both sides. There are other improvements by means of the application of screws, &c, especially for umbilical Hernia, which Dr. Hull claims as his own, but those above mentioned are the principal and most important, and the deponent verily believes them to be the invention of the said Dr. Amos G. Hull, and further he saith not.

SAMUEL AKERLY, M. D.

I Felix Pascalis, of the city of New-York, M. D. a member of the county Medical Society of New-York and a censor of the State Medical Society, depose and say, that in the month of May, 1824, I was by a resolution of said Society appointed with Valentine Mott, M. D. James R. Manley, M. D. John C. Cheesman, M. D. and J. Kearney Rogers, M. D. as a committee, and directed to examine into the merits of a certain mechanical Truss invented by Amos G. Hull, M. D. of this state, and to report to the aforesaid Society thereupon. That having as Chairman of the said committee convened the same and several times examined various specimens of the said truss, and having heard many persons who had been relieved by the use of the

same, state the operation and benefits of the same, it was resolved and unanimously agreed to submit to the said society the following testimonials as to the advantages and merits of the truss invented by Dr. Hull, and which had not been seen, or heard of before by the said committee, in any kind of Truss, known to them.

1st. That it possesses a hinge motion in place of the pivot motion, which obtains in approved trusses before in use.

2d. That the shape of the pad itself being concave, and not convex, causes a pressure on the ring, and not on the hernial Tumor, the peculiar advantage of which is, that it promotes the closing of the rupture, and which before, had never been provided for.

3d. That the truss of Dr. Hull for double Hernia, requires double pads, has the fixture of a wedge spring, in order to graduate or equalize the pressure of the one to that of the other, which is a real desideratum that had never been attended to before, in the construction of Trusses.

Which report was accepted and approved of by the said Medical Society, and ordered to be inserted in the minutes of the day for the use of Dr. Hull.

The deponent also says that on further examination of Dr. Hull's Truss, he finds it to be so ingeniously constructed, that by a fixture on the pad, it can not only be adjusted on the main spring, at minutely variable points, but that it can be made by another fixture, controlable by certain movements of the trunk or the pelvis. And he further saith that he has known and witnessed the successive improvements by which Dr. Hull the inventor, has brought his Truss to its present state of perfection, since he first presented and submitted the same to the said Society, at Albany in the year 1818, and believes him to be the sole inventor of the whole. And further saith not.

FELIX PASCALIS, M. D.

I William Whitely, of Utica, in the county of Oneida, and State of New-York, being of lawful age, do depose and say, that I have been employed by Dr. Hull, (the plaintiff) to manufacture the hinge and pivot Truss claimed by and patented to him, since its first introduction to public use. And that I have been acquainted with all the improvements and alterations in the construction and mechanism of the said Truss heretofore made by the said Amos G. Hull. And I do further depose that I am well acquainted with the said Truss as described in Dr. Hull's Patent, bearing date the 19th day of August, 1824, which patent I have read, and compared with a model of the said Truss. And further that it is my opinion from my knowledge of the instrument and its use, that the said Truss as described in that

patent is a perfect instrument being so arranged and constructed as entirely to answer the purposes of its invention. And I do further depose that since the invention of the said Truss, Dr. Hull has paid out large sums of money and been at great expense and devot d much time in improving the said Truss and bringing the instrument to its present state of perfection, which could only be accomplished by long use and experiment. And I do further depose that from my acquaintance with the said Truss, and its invention, and the successive improvements in its construction, Dr. Amos G. Hull is to my knowledge and belief, the inventor of the said Truss, as described in the said patent. And further saith not.

WILLIAM WHITELY.

I CHARLES CARPENTER, of Harrison Town County of West-Chester, and State of New-York, of lawful age, do affirm and say that for a number of years I was severely afflicted with a rupture or pushing out of the bowel in each groin, and finding no means of relief, and my complaint daily increasing, I went to the city of New-York, and obtained a Truss called the Ball and Socket Truss of Salmon Ody & Co. London, made specially for me, and for which I paid ten dollars, which I applied, and from its fitttng me well, I hoped to find relief. This was in March 1823. I continued to wear this Truss eighty or ninety days, and after giving it a fair trial and using every effort to make it answer my purpose, I found it to fail in keeping the bowel secure, and that it occasioned great pain by the pads rolling on their edges and the bowel slipping out through the aperture. I found also that the pad, from its convex shape, and its unlimited motion, passed into the rupture as it would open by the motion of the body, and also, that it would turn round on the ball, roll on its edge, and catch the gut between the pad, and the sides of the rupture, and the consequence would be great pain and torment, and I was often obliged in the course of a day, to stop and adjust it. At the end of about three months, having heard of the improved Truss of Dr. Amos G. Hull, the plaintiff, I applied to him for one, and on its application, I was immediately gratified and surprised to find the difference between the effect of the convex and concave pad, the latter being used by him, and which I immediately found kept up the bowel with ease and quietness, and in less than a year from the commencement of using it, I found myself nearly well. I found that the Truss of Dr. Hull was perfectly regulated by its simple mechanical arrangement, and that it kept in its place and performed its office of keeping up the bowel in all or any of the positions in which the body is usually thrown in a laborious employment, that of a farmer, and in which I suffered scarcely any inconvenience, and no sensible pain whatever. CHARLES CARPENTER.

I JOHN CONROY, of the city and State of New-York, Machinist, being of lawful age, do depose that for about four years past I have been occasionally employed by Dr. Amos G. Hull as a mechanic in constructing the models of the various plans and improvements projected by him from time to time in the formation of his Truss. And I do further depose that he invented the concave rupture pad, with its combined fixtures together with the metallic plate and cork wedge attached to the double inguinal Truss, agreeable to the specification contained in the letters patent granted by the United States to the said Hull on the 19th day of August, 1824, which letters patent I have read. And I do further depose that Dr. Hull has at intervals during the above mentioned period been employed in the city of New-York, in improving the mechanical structure of the Truss for the relief and cure of rupture, and that from time to time he this deponent has been employed by the Doctor to make the improved alterations, until it was brought by him to its present state, which he the deponent thinks very complete, and does not think it could be made better. And that his having been employed by the Doctor from time to time as aforesaid, is the reason of his belief that the plaintiff is the inventor of the said improvements, and of the instrument for which he has received a patent as above mentioned. The deponent further saith that he has often seen patients at the office of Dr. Hull in the city of New-York who had applied for relief under the disease of Rupture or Hernia, and has in a great many instances heard them while under the Doctor's hands express their satisfaction at the relief they felt from the application of this Truss. The deponent further saith that for the relief of the above mentioned disease, there are many trusses of different constructions which have been invented and brought into use by other persons, and that none of these correspond in mechanical structure and principle with the Truss, as inserted and used by the plaintiff, and described in his patent as above mentioned. And the deponent further saith that from his acquaintance with the subject matter of the present deposition he fully believes that the plaintiff is the original inventor of the Instrument described in his aforesaid patent. And further saith not.

JOHN CONROY.

City and county of New-York, ss. THOMAS W. HUNTER of the said city physician and surgeon, being duly sworn doth depose and say that he is a member of the faculty of physicians and surgeons of Glasgow, and also of the Medical Society of the city and county of New-York, in which latter place he has resided and practised during the last eight years, previous to

which he had resided and practised in the aforesaid capacities, about seven years, in Port Glasgow. That his experience in the use of Trusses during many years practice in Glasgow aforesaid, and also in New-York, has made him acquainted with the superior advantages of Dr. Hull, the above plaintiff's patent Truss, over those of all others, which he has seen or heard of. He has long witnessed the application of the Racket Truss approved by Dr. Lawrence an operator in surgery of great eminence, and by many others, which fails in preventing the descent of the bowel in most cases, especially where much exercise of the body is necessary He is also well acquainted with the Ball and Socket Truss of Salmon Ody & Co. of London, and has frequently witnessed its inefficacy to secure the bowel, and has frequently witnessed the complaints of patients under the pain they have suffered on this account. Two very interesting cases of scrotal Rupture, (which is of the worst and most difficult kind) to which this deponent was called about five years ago, one in this city, and the other in Brooklyn, gave him a particular opportunity to ascertain the merits of the plaintiff's Truss, after the total inadequacy of Salmon Ody & Co's. Truss was apparent, and had in fact proved injurious ; and in both these cases the plaintiff's Truss was worn with perfect comfort, and effected a complete cure in less than twelve months. He further saith, that the mechanism of the plaintiff's Truss is novel in principle and construction, and combines the advantages leading to comfort and cure, which are so extremely desirable, and have never before, to the knowledge or belief of this deponent, been adopted. The deponent further saith, that the Truss invented by the plaintiff is approved of by the most eminent physicians and surgeons in Europe and in the United States, particularly by the celebrated Dr Astley Cooper of London. The deponent further saith, that from his reading, and also from his experience and observation, he is satisfied that the Truss of the plaintiff is in its structure, a new and original invention, and highly useful. The deponent further saith, that Dr. Hull's mode of constructing the double Truss, by means of the second spring, to which the second pad is attached, and the cork wedge, used to graduate its pressure more exactly, with the slide and screw, is, in the opinion of this deponent, entirely new and original, and renders the Truss highly useful. The deponent further saith, that he has seen the pamphlet attached to the deposition of Dr. Samuel Osborne taken in this cause, and that the invention of Dr. Hull is very well described in the 16th, 17th and 18th pages of the said pamphlet. And further saith not.

WILLIAM HUNTER.

I CYRUS PERKINS, of the city, county and State of New-York, doctor in medicine, depose and say that I have been a practitioner of physic and surgery for twenty three years last past, and that I have been long conversant with the disease called hernia; which is a tumor occasioned by the partial escape of a bowel or some other portion of the contents of the belly, through a rupture or breach of its side. And with a view to afford the relief best suited to the nature of the disease, I have for many years been in the habit of examining and applying at different times a variety of instruments called trusses, with a view after returning into the belly the protruded part, to oppose a force, at the breach, sufficient to prevent the re-escape of the bowel. In all the instruments for this purpose which I have used, seen or read of, till the one for which Dr. Amos G. Hull has obtained a patent, the pressure was made by applying to the rupture part the convex surface of a pad—which pad was either firmly fixed to the part by a spring and strap—or else it had a free ball and socket motion as in the instrument sold in the shops under the name of Salmon & Ody's Truss. The Trusses with fixed pads were, for the most part, extremely uncomfortable to the wearer and often quite insupportable. Salmon & Ody's Truss on the other hand, owing to a too free motion of the pad would occasionally allow a protrusion of the bowel and thereby greatly endanger the safety of the patient. The tendency of all convex pads is to increase the disease by forcing their way, like a wedge, into the opening, and thereby increasing the size of the breach. Whereas the Truss invented by Dr. Hull, and described in his pamphlet, entitled "Observations on Hernia and Trusses," acts on an entire different principle. It has a plane pad, fixed on a concave plate, so that instead of the strong pressure being made by the centre of the pad (as is the case in all Trusses) this of Dr. Hull's makes the strong pressure by its circular margin, and a diminished pressure by its centre. It thereby not only prevents the escape of the bowel, but approximates and often seucres in contact the ruptured part, so as eventually, in many cases, to effect a radical and permanent cure.

This appears to me to be the great excellence of Dr. Hull's Truss and is sufficient in my opinion to give it a decided preference over all others with which I am acquainted.

There are several other peculiar points of excellence in this Truss; the most important of which is the introduction of the combined motion of the pivot and hinge, between the pad and spring; so as to graduate the quantity of motion in the most desirable manner.

And indeed the combination of mechanical principles adopted in the construction of this Truss is so different from that used

in the formation of any other that it may be fairly considered a new instrument. I furthermore believe that Dr. Amos G. Hull is entitled to all the privileges and immunities of the author of a useful invention, as the inventor of this instrument.

CYRUS PERKINS.

I Daniel D. Walters, of the city of New-York Physician and Surgeon, do depose and say that I have been in the practice of my profession for more than twenty five years last past, and for many years have been concerned in a druggist store, and in the sale of Trusses, and am well acquainted with them. That I am acquainted with the Truss claimed by the plaintiff, Dr. Amos G. Hull, as his invention, that I consider it constructed upon principles different from any hitherto in use, and the only Truss with which I am acquainted, that, in my opinion is calculated to effect a cure of rupture, and the same, as far as my knowledge extends is an original invention of the said plaintiff. That it embraces advantages not to be met with in any other Truss, and is well described by Dr. Beck in his deposition in this case, which I have seen, in the following language to wit: "1st. The peculiar shape of the pad, which in the Truss of Dr. Hull is *concave*, instead of *convex*, as it is in other Trusses. 2d. The peculiar connection between the spring and pad, being a combination of the hinge and pivot joint. 3d. The peculiar application of the pad and parts connected with it, and the spring by means of the slide motion, and the facility with which the pad may be fixed to any part of the spring. 4th. The peculiar construction of the double inguinal Truss, being simply the addition of another pad, attached to a short elastic, metallic plate. This plate with its pad move on the main spring by the same power of adjustment and fixture as the first pad, the pressure of the pads being graduated at pleasure by an intervening cork wedge."

And I further say that I have seen the plaintiff's Truss in use, in many instances, during the last three or four years, and am satisfied from my own observation, that it affords more protection to the patient, by preventing with greater certainty the descent of the contents of the abdomen, than any other Truss hitherto in use, and is the only Truss in my opinion, calculated, from its principles and construction, to effect a cure of rupture. And the said Truss is applied and worn with more ease and safety than any other Truss. And further saith not.

DANIEL D. WALTERS, M. D.

I, John B. Beck, of the city and county of New-York, of lawful age, depose and say, that I am a Doctor of Medicine, and a practitioner of Physic and Surgery in the city of New-York;

that I am acquainted with the Truss claimed by Dr. Amos G. Hull, as his invention ; that I consider it as constructed upon principles different from any truss hitherto in use, and as far as my knowledge extends, perfectly original ; that it embraces advantages not to be met with in any other truss, being, 1st. The peculiar shape of the pad, which in the Truss of Dr. Hull, is *concave*, instead of *convex*, as it is in other trusses. Second, The peculiar connection between the spring and pad, being a combination of the hinge and pivot joint. Third, The peculiar application of the pad and its accompaniments to the spring, by means of the slide motion, and the facility with which the pad may be fixed to any part of the spring Fourth, The peculiar construction of the Double Inguinal Truss, being simply the addition of another pad attached to a short elastic, metallic plate ; this plate, with its pad, move on the main spring by the same power of adjustment and fixture as the first pad, the pressure of the pads being graduated at pleasure by an intervening cork wedge.

For a more particular description of these advantages, see pages 16 and 17 of thisp amphlet.

And further, I depose that from facts which have come to my knowledge, I am convinced that Dr. Hull's Truss has proved successful in accomplishing cures of Hernia, in several cases where the ordinary trusses as well as the truss of Salmon, Ody & Co. had been faithfully used without effect. For the greater certainty of description, this deponent refers to the various models of trusses appended to the deposition of Dr. Samuel Osborn, in this cause.

JOHN B. BECK, M D.

I, JOHN F. GRAY, practising Physician and Surgeon of the city and county of New-York, do depose and say, that I have been acquainted with the application and use of Dr Amos G. Hull's Truss for three years and more. I have been acquainted with the mechanism, use, and results of various trusses employed previous to the invention of Dr. Hull's, parliicularly the truss of Salmon, Ody & Co. The defects of Salmon, Ody & Cos. truss, with others previously used, are as follows .—a convex rupture pad ; the effect of which is, to distend the rupture opening, and either an unlimited motion of this pad between the spring or belt, and the abdomen ; or an immoveable fixture of the pad to the spring or belt ; the evils of either of which modes are to render the position of the pad *in* the rupture opening insecure and uncontroulable ; thereby frequently allowing the intestine to escape and endangering the delicate parts adjacent. All which defects and evils are obviated by the Truss of Dr. Hull, in the following manner :—1. The rupture pad of Dr. Hull's Truss is

concave, pressing around the circumference of the Hernial parietes, and urging them to a closure of the rupture opening, which is covered by the cushion in the concavity of the rupture pad-plate; the resistance of this cushion being just sufficient to reduce the protruding gut or bowel. 2. The motion of the rupture pad between the spring and abdomen, is regulated by a joint, with a mortice and tenon, which tenon has a shoulder, so graduated, as to allow of motion in all directions with the body, yet limited to such an extent as will effectually secure the position of the pad on the rupture opening, thereby preventing the escape of the gut or bowel, or injury of the adjacent parts with certainty, under all circumstances. 3. The position of this pad and joint, with its said tenon and shoulder, or any given point of the spring, is secured by means of a vertical screw, perforating the button-like head of the tenon, but not perforating the spring. The peculiar advantage of which mechanism consists in adjusting the position of the pad on the rupture opening, with perfect accuracy, on persons of various sizes, but quite nearly alike: a point is hereby attained, which is all-important to the security of the gut or bowel, in very many instances, where all other modes of fixture necessarily fail of the desired effect.

Furthermore, another advantage of Dr. Hull's invention, consists in securing a rupture in each groin, or double inguinal rupture, with the same facility and certainty as a single rupture. This is effected by means of his compound or double inguinal Truss, which consists in attaching another rupture pad to the circular spring, by means of a short elastic metallic plate; or smaller spring slightly curved; this pad, with its accompanying plate on spring, moves on the main spring, in the same manner as the rupture pad, in the single truss above described, and its position on the second rupture opening is regulated by the same power of adjustment and fixture: the degree of pressure of the second pad is increased or lessened at pleasure, by means of a moveable cork wedge, placed between the lesser and greater, deriving the ultimate and efficient pressure of both pads from the greater or main spring entirely.

Furthermore, I have witnessed numerous instances, in which other trusses have been laid aside after proving hurtful and inefficient, and exchanged for the Truss of Dr. Hull, which has in all these cases effectually and comfortably secured the rupture, not unfrequently effecting a perfect cure of the disease.

This superior efficiency depends, in my opinion, upon the surgical principle embraced by the invention of Dr. Hull, as an associate, whole and unembraced by any other truss.

This combination of mechanism, I believe to be original with Dr. Hull.

JOHN F. GRAY.

I, Samuel Osborne, of the city and county of New-York, of lawful age, Physician and Surgeon, do depose and say, I have been in the practice of physc and surgery, thirty years, and do still practise the same. During thirty years, I have had much experience in the disease called Hernia or Rupture, and frequently had occasion to lament the inadequacy of trusses to confine the intestine, and also frequently to witness the injurious effects resulting from their improper structure.

A few years since, (four or five,) having become acquainted with the Truss invented by Dr. Hull, it was with astonishment I found that what was hitherto a desideratum in surgery, was absolutely obtained by his truss, viz.—A certain and easy confinement of the intestine in all cases, with a reasonable prospect of cure in most. In the construction of all trusses previous to Dr. Hull's, the object of the surgeon had been limited to the confinement of the intestine, and this, in many cases inadequately, in all with great inconvenience to the wearer, in many with injurious and even dangerous consequences. The inadequacy, injurious and dangerous tendency of all hitherto known trusses, resulted from their mechanical structure upon false surgical principles; they were so constructed as to press into the opening, thereby enlarging it, and rendering callous its edges; whereas the principle upon which the Truss of Dr. Hull is made to act, is a well known surgical principle, but never before called into successful operation in this disease, viz—pressure disposing to contraction, approximation and cohesion; the consequence of which is, in this disease, frequent cure by Dr. Hull's Truss, as known to the deponent. Dr. Hull's Truss is so constructed, that the concave surface (of the rupture pad,) next to the body, giving the greatest pressure to the circumference, tends to approximate the parts through which the intestine has protruded, and affords support and ease The hinge and pivot connecting the spring and pad, is so constructed with a tenon and mortice as to preserve a double hinge limited joint, securing a uniform, easy and effectual pressure of the spring on the pad, and the pad on the opening and surrounding parts. The power of graduating the spring and fixing the pad to any minuteness, is a hitherto unknown convenience, enabling the surgeon, or even the patient, without the presence of a mechanic, to adapt a large truss to a small body. The great mobility of other trusses—their painful pressure on the edge of the ring as well as the integuments, often occasions inflamation, and where suffered to have such play as to be any way easy to the wearer, the gut is very liable to protrude, and in that state from the improper construction of the truss, the gut become strangulated and inflamed.

Well acquainted with all the trusses hitherto used, I more particularly refer to the Truss of Salmon, Ody & Co., as that

against which less objection lies than to any preceding, and that which has of late years been more generally recommended by the profession. Dr. Hull's Truss answers all the good intentions of any hitherto known truss, and obviates all the objections which obtained against them. The Truss of Salmon, Ody & Co., or what is called the Ball and Socket Truss, marked Brevet Salmon, 33—82; annexed to this deposition, exhibits truly Salmon & Ody's Truss. This truss, and the objections to its use, are truly and correctly set forth and described by Dr. Hull, in his pamphlet, hereunto annexed, pages 6, 7 and 8. The Truss invented by Dr. Hull, and described in his patent, dated 19th of August, 1824, is that desideratum we have been so long wanting, and which in subjecting mechanical ingenuity to surgical design, is entirely new, and belonging exclusively to Dr. Hull.

Some parts of Dr. Hull's instrument are, in appearance, similar to some others; but as a whole in mechanical structure, surgical design, certainty of aim, convenience, economy and curative properties, hitherto unknown. In Dr. Hull's Truss, the concavity of the pad towards the body, the combined hinge and pivot joint limiting the motion of the pad-plate, and securing its own proper position according to the varied motions of the body, together with the mode of varying the position of the pad in relation to the spring, by means of a screw to press on the spring without a hole, are points peculiar to his truss. In relation to the double truss, there are these points appertaining to Dr. Hull's Truss, and not to any preceding truss. Dr. Hull's Truss obviates the necessity of straps, by possessing the same power of fixture as the single truss, to which a second pad is added, attached to a short metal spring, and the pressure of the pads graduated at pleasure by means of an intervening cork wedge.

I have known Dr. Hull's Truss worn with perfect comfort where other trusses were very tormenting, or totally unbearable; and I have known several cures effected by Dr Hull's Truss, where it would have been impossible to attain the same result from any other known truss.

While in the army of the United States, I procured the discharge of several soldiers, because I was unable, with any known truss, to effectually secure the rupture; with Dr. Hull's Truss, I am satisfied I could have rendered them useful to the government, comfortable to themselves, and in many cases effected perfect cures.

SAMUEL OSBORN.