

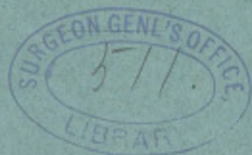
BROOKE (J. B.)

AN IMPROVED FRACTURE-BOX

*For the Repair of Injuries of the Lower Extremities Requiring  
Extension and Counter-extension.*

BY

JOHN B. BROOKE, M.D.,  
OF READING, PA.



FROM

THE MEDICAL NEWS,

June 16, 1894.



[Reprinted from THE MEDICAL NEWS, June 16, 1894.]

**AN IMPROVED FRACTURE-BOX**

*For the Repair of Injuries of the Lower Extremities  
Requiring Extension and Counter-extension.*

BY JOHN B. BROOKE, M.D.,  
OF READING, PA.

THERE is, perhaps, no more successful method of treating fractures of the lower extremities in their continuity than by the ever-ready sand-bag, pulley and weight, which have largely supplanted the more pretentious measures adopted years ago, including the various appliances for extension and counter-extension from the axilla and perineal appliances, which were always more or less painful, difficult of adjustment, particularly in compound injuries, and always tedious to be borne for any great length of time. Whilst, however, this apparatus answers the purpose for which it is employed, and generally effects most admirable results, it is nevertheless, by its size and weight, inconvenient to handle, requires frequent adjustment, and, in hot weather, adds greatly to the warmth and discomfort of the patient, necessarily increasing nervous irritability and restlessness, and, as a consequence, protracting the recovery. Besides, to make the treatment effective, the sand-bags on the inside and outside of the limb must be firmly adjusted and strapped to it above and below the knee. Holding it thus in a vise as it were, extension is made along the leg, but not always with success, for no one who has had much experience with this form of dressing can fail to recall many instances in which it was almost impossible to keep the foot from deflecting to one



side or the other. To this objection, too, must be added that of increasing greatly the weight of the extremity by the attachment to it of the bags, and necessarily requiring increased weight to effect the desired extension. This excessive weight, besides producing abrasions of the instep and heel, with the attendant pain and soreness, adds, also, to the strain upon the adhesive strips, creating irritation beneath them. There is a still further objection. By the combined weight of the sand-bags and limb, the bed, unless a very hard one, will, immediately under them, become so much pressed down into a hole, if you please, that it will act as an obstacle to the sliding forward of the leg and the consequent separation of the fragments.

To do away with the objections to the use of the sand-bags in whole or in part, I present to the profession an improved fracture-box, which I devised some months ago whilst treating an intra-capsular fracture of the femur. It has been in very successful use since then. It presents the following advantages over the sand-bag treatment: It is, under all circumstances, easily adjusted to the injured limb; it is not hot and confining; there is less pain and uneasiness in extension in consequence of less than one-half the weight being required by its use for a given amount of traction; injuries are readily examined, and above all, the surgeon has perfect control of the position of the limb.

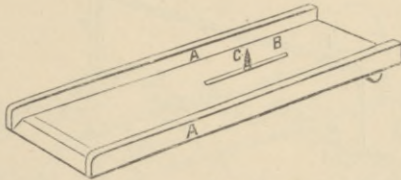
In the construction of the box little skill is required, the only care demanded being in the proper selection of well-seasoned wood, particularly for the piece on which the box proper rests and rolls. Unless this is of the best material it will warp, and prevent the easy to-and-fro motion of the box, upon which the success of the whole apparatus depends. I may add that the bed upon which the patient rests should be of hair, and the bedstead at least one foot longer than those usually made for hospital use. With these precautions the fracture-



box will always be firm, and the traction upon the limb at the best.

This improved fracture-box consists essentially of two parts. The first, as shown by Figs. 1 and 2, is nothing but a flat board, 8 x 22 inches, and a half-inch thick,

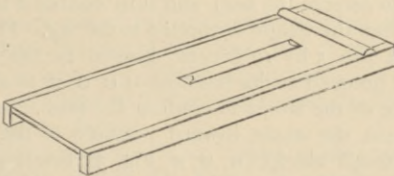
FIG. 1.



Upper aspect of track.

guarded on the long sides by a strip one-quarter inch thick by one inch broad (A, Fig. 1), to keep the box properly in place and to allow it to move freely on its base. This latter is perforated in its center by a slot, B, six

FIG. 2.

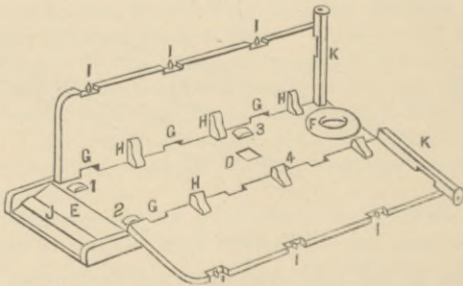


Inferior aspect of track.

inches long, and wide enough to admit of an inch screw (C, Fig. 1), which, entering a little block of lignum vitæ (D, Fig. 3), confines the box loosely to the base. This latter, at its back end, is slightly bevelled, to afford greater ease to the limb. The box proper (Fig. 3) consists of three pieces, viz., a bottom board one-half an

inch thick, and large enough to run easily within the sides of the base. This is also bevelled, as seen at E (Fig. 3), in continuation of the base, and is perforated by four openings for rollers, 1, 2, 3, 4. The front end

FIG. 3.

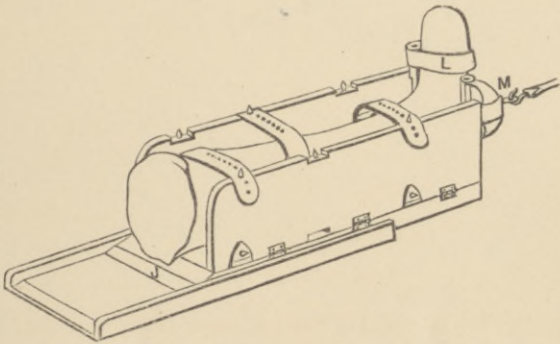


View of fracture-box, open.

has a circular opening two inches in diameter, which is covered rather loosely by a piece of chamois leather, and surrounded by a hair cushion, F, of the same material, to receive the heel and thus enable it to move the box when the weight is applied to the leg. The sides of the box are 5 by 19 inches, hinged to the bottom board and notched at the base, as at G, G, G, to admit of the passing of the straps to confine the limb. As these sides sustain the whole inward pressure of the straps, there are small blocks (H, H, H, Fig. 3), firmly glued to them to antagonize this force. At the top of the sides, and on a line with the lower notches, are similar ones to keep the straps in position and to receive the turned pins, I, I, I, made of steel or brass, which hold the straps and thus do away with the use of hooks or buckles. To avoid the pinching of the skin when the box is drawn back, a doubled strap of chamois leather is placed on the bevelled edge (J, Figs. 3 and 4). The posts, K, K,

firmly fastened to the front of the sides of the box, are topped by pieces of copper—pennies, answer an excellent purpose—turning eccentrically about a screw, so that the guiding strap of the foot (L, Fig. 4), may be removed at will without opening the buckle.

FIG. 4.



View of fracture-box, extended.

The straps are of soft leather, perforated at one end by one hole the size of the pins, and at the other by a number to admit of proper adjustment. Over each of these a pad slides so that pressure upon the limb can be applied when desired.

The play of the box is six inches, as indicated by the length of the slot in the base. In conclusion, I may add that the free ends of the traction plaster-strips pass around a segment of a ball 2 by 3 inches, the eyed screw, to receive the hook of the extension cord (M, Fig. 4), passing through the plasters, and into the ball, thus confining them the more firmly.











*The Medical News.*

*Established in 1843.*

A WEEKLY MEDICAL NEWSPAPER.

*Subscription, \$4.00 per Annum.*

---

---

*The American Journal*  
OF THE  
*Medical Sciences.*

*Established in 1820.*

A MONTHLY MEDICAL MAGAZINE.

*Subscription, \$4.00 per Annum.*

COMMUTATION RATE, \$7.50 PER ANNUM.

LEA BROTHERS & CO.  
PHILADELPHIA.