(No Model.)

E. RAYNALE.

Fracture Apparatus.

No. 237,775. **Patented Feb. 15, 1881.**

Fig. 1

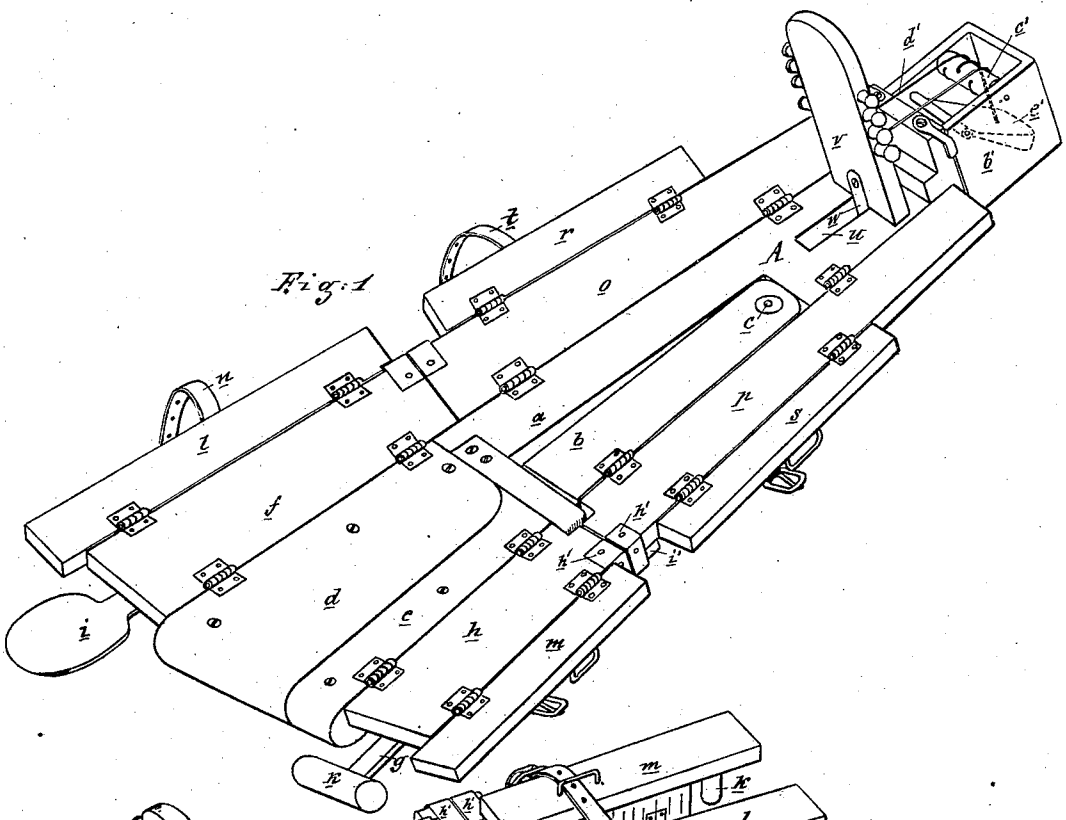


Fig. 2

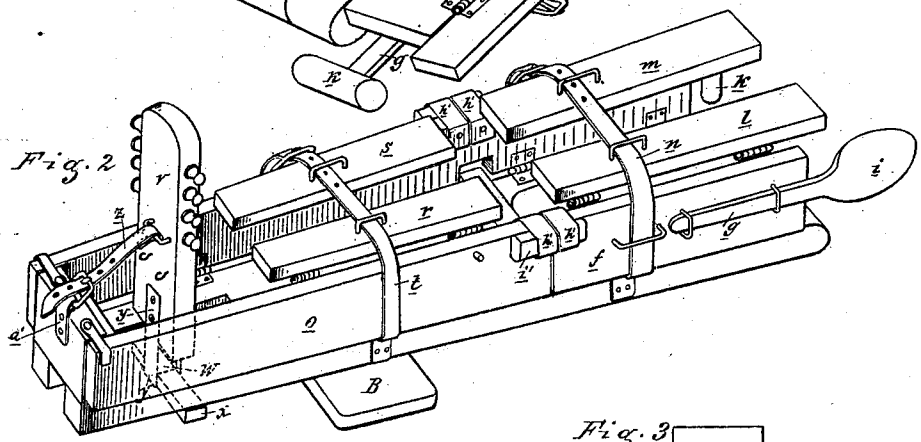
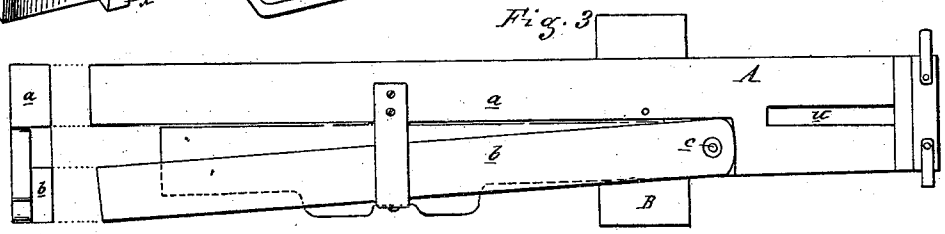


Fig. 3



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EBENEZER RAYNALE, OF BIRMINGHAM, MICHIGAN.

FRACTURE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 237,775, dated February 15, 1881.

Application filed July 12, 1880. (No model.)

To all whom it may concern:

Be it known that I, EBENEZER RAYNALE, of Birmingham, in the county of Oakland and State of Michigan, have invented an Improvement in Surgical Implements, of which the following is a specification.

The nature of my invention relates to certain new and useful improvements in that class of surgical implements employed in the treatment of broken or diseased legs.

The invention consists in the peculiar construction of the various parts and their various combinations, as more fully hereinafter described.

Figure 1 is a perspective view of my improved device open and ready to receive the limb. Fig. 2 is a like view of the same as employed to inclose the limb. Fig. 3 is a plan view of the central section with the end shields removed, showing the lateral adjustment.

In the accompanying drawings, which form a part of this specification, A represents the central section or bed, a portion of which is divided into two parts, *a* and *b*, the latter of which is pivoted to the former at *c* to allow the device to be expanded or contracted, as the size of the limb under treatment may demand. The ends of these two parts are covered by metallic shields *d* and *e*, the latter sliding within the former. To each side of this bed are hinged the parts *f h*, designed, when raised vertically, to inclose the sides of the leg from the thigh to the knee. Both these parts are provided with staples to receive and adjust the slides *g*, one of which terminates in a spoon, *i*, to cover and embrace the head of the thigh-bone, while the other terminates in a roll, *k*, adapted to fit the groin. To these parts *f h* are hinged the parts *l m*, which, when closed, form the upper portion of the box for inclosing the upper part of the leg, and suitable straps *n* are provided to secure the parts together. Other parts, *o p*, are in like manner hinged to the bed to form the sides for the inclosure of the lower limb from the knee down, and to these parts are hinged the parts *r s*, which form, when in place, the top of the box for inclosing the lower leg, and a suitable strap, *t*, secures the parts in place.

A slot, *u*, is cut through the bed, as shown, to receive and allow an adjustability to the post *v*, to which the foot of the limb is designed to be secured. This post terminates in a slide, *w*, which projects through the slot, where it is secured by a key, *x*, passing transversely through the strap *y* on the bottom of the slide. The lower side of this post is provided with a strap, *z*, by means of which and a buckle, *a'*, the post is adjustably secured.

A box, *b'*, is removably secured to the end of the bed A, and is provided with a pulley or winch, *c'*, which is provided with cords *d'*, which may be either secured to the post or directly to the limb under treatment, and a weight, *e'*, is adapted to extend the limb and prevent contraction.

B is a plate, secured to the bottom of the bed by a pivot-bolt, and adapted, when turned as shown in Fig. 2, to prevent any accidental roll of the device. When the implement is not in use this plate is turned out of the way lengthwise with the bed. The parts *r s* are cut away, as shown, over the knee, and the parts *o p* may be removably secured to the parts *f h* by means of the loops *h'* and keys *i'*, or by other suitable means.

What I claim as my invention is—

1. The combination, with the bed-pieces *a b*, horizontally pivoted together at *c*, of the metallic shields *d e*, secured to the ends of the bed-pieces, and one sliding within the other, substantially as described, and for the purpose set forth.

2. The combination, with the bed-pieces *a b*, pivoted relatively to each other, as shown, of the side pieces, *o p f h*, hinged to the bed, and the top pieces, *r s l m*, hinged to the side pieces, substantially as described, and for the purpose set forth.

3. In combination with the parts *f h* of a surgical implement, the interchangeable slides *g*, one terminating in a spoon, *i*, and the other in a roll, *k*, substantially as and for the purposes set forth.

4. The combination, with the bed A and side pieces, *f h o p*, hinged thereto, of the loops *h'* and keys *i'*, whereby any desired portion of the limb may be disclosed at will, substantially as described.

5. In a surgical implement, and in combina-

tion with the bed thereof, and removably secured thereto, a box or frame, *b'*, carrying a pulley or winch, and weight pivoted therein, with its free end provided with suitable cords for attachment to the limb under treatment, for the purposes specified.

6. In a surgical implement, and in combination with the bed thereof, the plate B, substantially as set forth.

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Witnesses:
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