J. T. WOODS.

Fracture Apparatus.

No. 198,723. Patented Dec. 25, 1877.

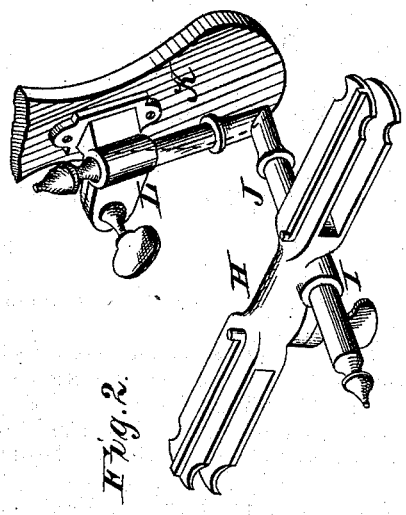

Fig. 2.

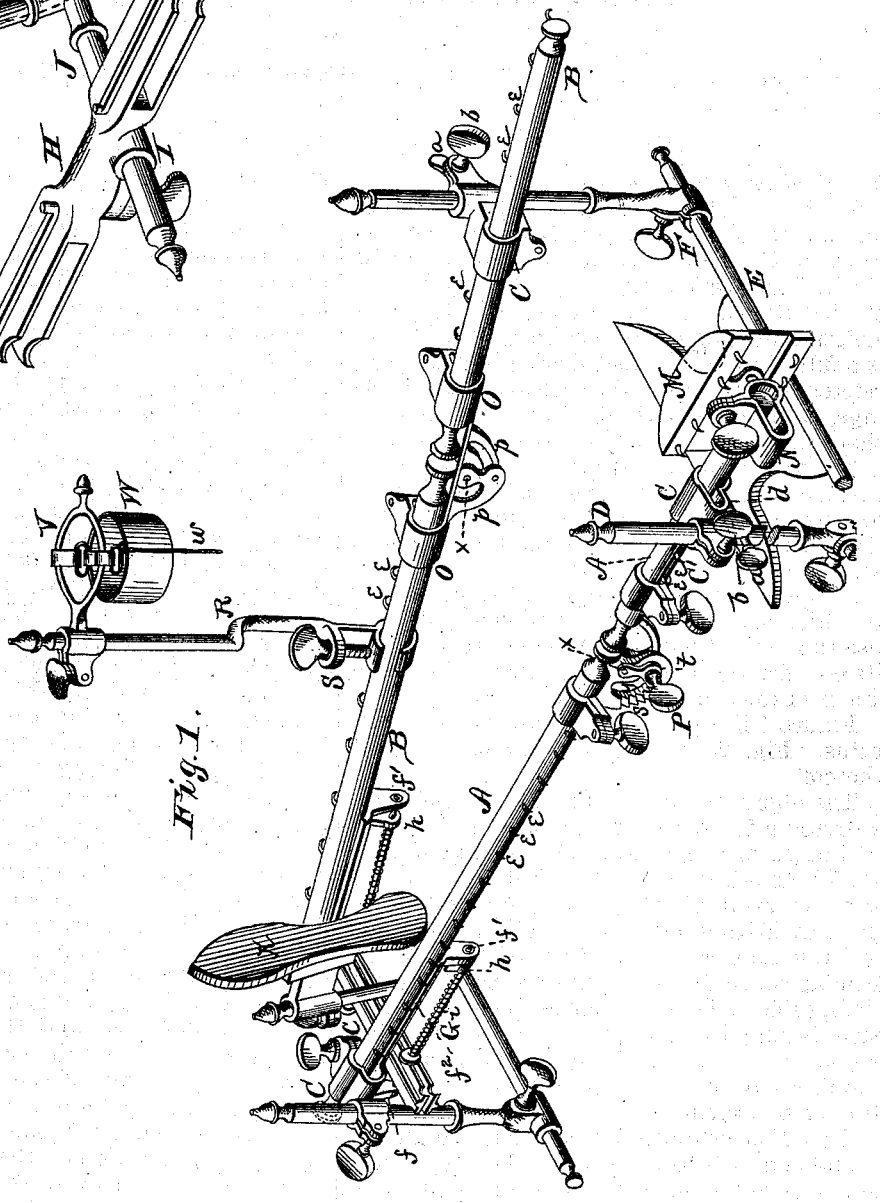

Fig. 1.

WITNESSES

Franck. L. Ouraud

Frank Gait

INVENTOR

Jos T. Woods

Alexander Munson

ATTORNEYS

UNITED STATES PATENT OFFICE.

JOSEPH T. WOODS, OF TOLEDO, OHIO.

IMPROVEMENT IN FRACTURE APPARATUS.

Specification forming part of Letters Patent No. **198,723**, dated December 25, 1877; application filed June 8, 1877.

To all whom it may concern:

Be it known that I, JOS. THATCHER WOODS, of Toledo, in the county of Lucas, and in the State of Ohio, have invented certain new and useful Improvements in Apparatus for Use in the Treatment of Fractures of the Leg and Thigh; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of an apparatus for use in the treatment of fractures of the leg and thigh, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a perspective view of my apparatus. Fig. 2 is a detailed view of a part thereof.

The object of my invention is to construct a dressing to be used in any form of fracture of the leg or thigh, in which the injured part shall be readily accessible and the aims of the surgeon attained without discomfort to the patient. To this end, in this appliance, all pads of bran and cushions of cotton, as well as bandages, are dispensed with, and the fractured limb, subjected to extension and counter extension, is supported in a web of cloth that is so adjusted and adapted that no movement of the dressings or limb is necessary for inspection or treatment.

This I accomplish by constructing an adjustable frame-work, in which the rod A A is adapted to the outside of the fractured limb, and extends from a point about five inches below the bottom of the foot to any desired point toward, to, or above the hip. A similar rod, B B, extends from a point about five inches below the bottom of the foot to the perineum. These rods A A and B B are held in position by being attached to uprights D by means of double clamps C C′, each clamp having one horizontal part, C, to go over the rod, and one vertical part, C′, to go over the upright, and said parts fastened, respectively, by means of screws *a* and *b*.

The uprights D D are so constructed as to slide on cross-rods E E, and to clamp securely at any desired point by means of the clamps and screws F, thus securing lateral, and by means of the clamps C′ perpendicular, adjustability.

The clamps C, surrounding the rods A and B, are firmly attached to the perpendicular clamps C′, and are constructed with a deep groove at *d*, so as to permit them to slide freely over the curved hooks *e*, that are inserted into the outside of the rods A and B, by which means longitudinal adjustability is effected.

The clamps C at the foot extremity of the apparatus have each attached to their lower front edges an ear, *f*, corresponding with a similar ear, f^1, projecting downward from a bar, f^2, attached to said clamp. In these ears is supported a rod, G, which is formed with screw-threads carrying a burr, *h*, and is surrounded by a coiled-wire spring, *i*, the tension of said springs *i* being controlled by the adjustment of the non-revolving burrs *h*.

H represents a cross-bar, constructed with a mortise or slot at either end, by means of which it is supported by and slides freely on the rods G G. In the center of this cross-bar is a clamp, I, in which is secured an angular rod, J, and to the upper portion of this rod is attached a foot-piece, K, by means of a clamp, L, a double adjustability by rotation being thus effected, and the parts secured at any desired point by the clamps I and L.

At the upper end of the long rod A A is a body-pad, M, capable of being fastened at any point by the clamp N, and made adjustable by a screw and slot or other suitable means.

The rods A A and B B are each made in two parts, and said parts attached together by means of a device that permits of their removal and the substitution of rods of any desired length. This device consists of a double clamp, O O, to the base of each of which is attached a plate, *p*. These plates overlap each other, and are united by a rivet at *x*, thus forming a hinge. On this rivet is hinged a catch, *t*, through which is passed a screw, P, through a slot, *y*, in one plate into the other

plate, the whole being so combined in action as to secure permanent adjustability at any desired angle by means of this screw P, which either relieves or presses the catch *t* into notches *s* in the slotted plate.

In the use of this instrument, after its adjustment to the length of the limb, a piece of muslin or other suitable material is attached by one of its edges to the hooks *e* on the outside of the rod A A, and by the other edge on the corresponding hooks on the rod B B, leaving enough material between them for the support of the limb as if in a hammock. At the upper extremity of the rod B B the cloth is cut across, so as to form it into the shape of an L, the shorter leg of the L being designed to pass over the body, and being attached, the hooks on the rod A A hold the body and apparatus securely together.

Extension is effected by pressing the cross-bar H against the springs *i i* and attaching the leg to it by proper means well known to surgeons, when the springs *i i* will effect the extension desired.

R is an upright rod, formed with a clamp and screw, S, at its lower extremity, by which it may be attached at any point to either of the rods A A or B B, and on its upper part it supports a hoop, V, which, being formed with a clamp and screw, is adjustable on the rod R. The hoop V supports a cup, W, from which irrigation is effected by a piece of cotton wicking, *w*, acting as a siphon.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The frame-work consisting of the rods, uprights, and clamps, constructed substantially as described, so that the frame-work is adjustable laterally, perpendicularly, and horizontally, to adapt it to variable lengths of limb, and also reversible to the right and left, as desired.

2. The curved hooks, in combination with the rods of the frame-work, for the purpose of holding the hammock in place.

3. The compound clamp, consisting of a horizontal clamp, C, for the rods, and a perpendicular clamp, C′, for the uprights, in combination with the rods A and B and uprights D of a fracture apparatus, substantially as and for the purposes herein set forth.

4. The combination of the clamp with bar and ears, supporting the screw-rod, the set-burr, and the coiled-wire spring, for the purposes set forth.

5. The combination of the cross-bar, slotted at both ends, the angular rod, foot-piece, and adjusting-clamps, for the purposes set forth.

6. The movable body-pad, with its adjustable joint, in combination with the clamp N and side rod of a fracture apparatus, as set forth.

7. The double attaching-clamp, with its rivet-hinge, catch, set-screw, and notches, in combination with the two parts of a divided side rod of a fracture apparatus, as set forth.

8. The adjustable irrigator, consisting of the upright, with clamp and adjustable hoop, in combination with a fracture apparatus, as set forth.

In testimony that I claim the foregoing I have hereunto set my hand.

JOSEPH THATCHER WOODS.

Witnesses:
P. A. McGAHAN,
J. T. NEWTON.