

J. S. McClelland.

Treating Fractures & Displacements

N<sup>o</sup> 72215

Patented Dec. 17, 1867.

Fig. 2. A

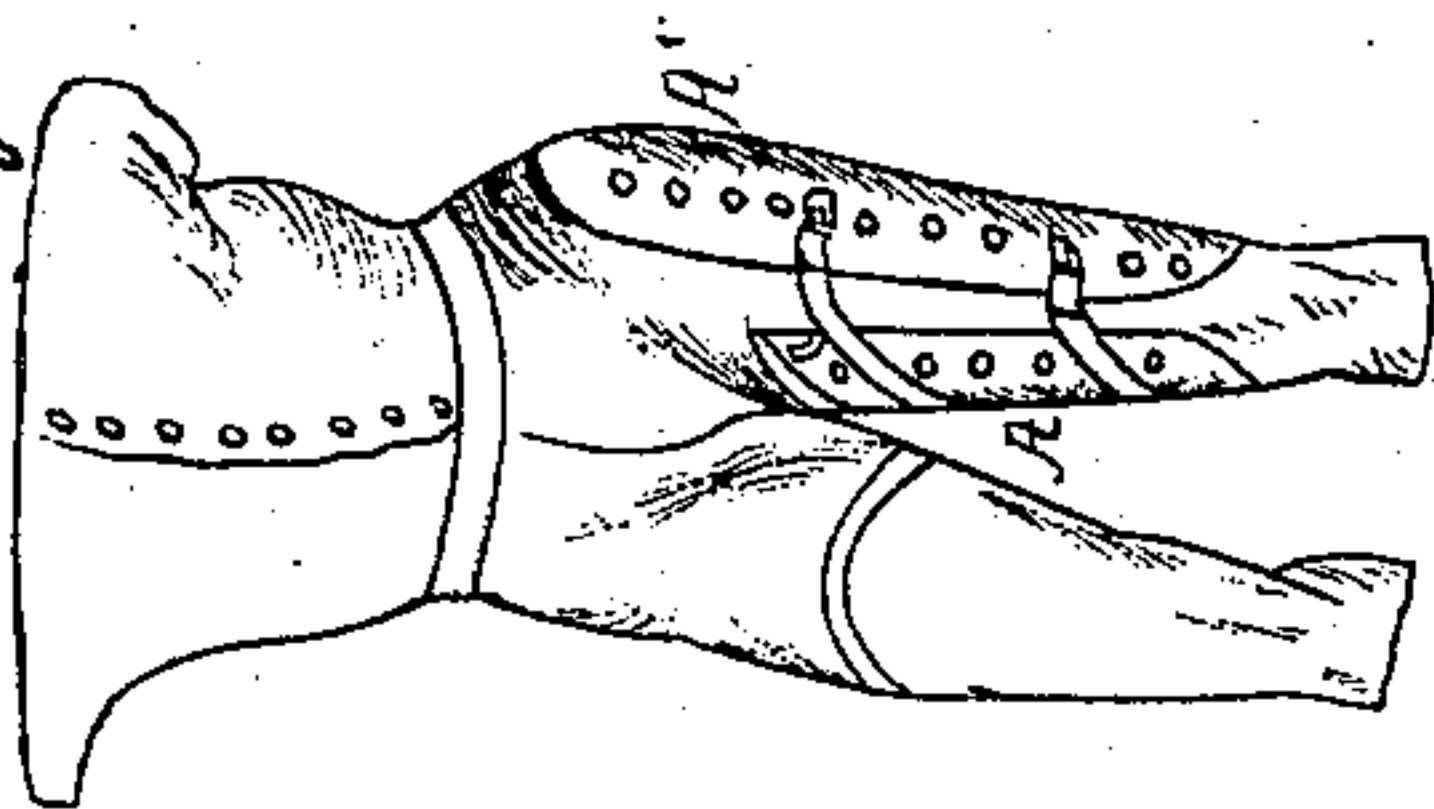


Fig. 2. B

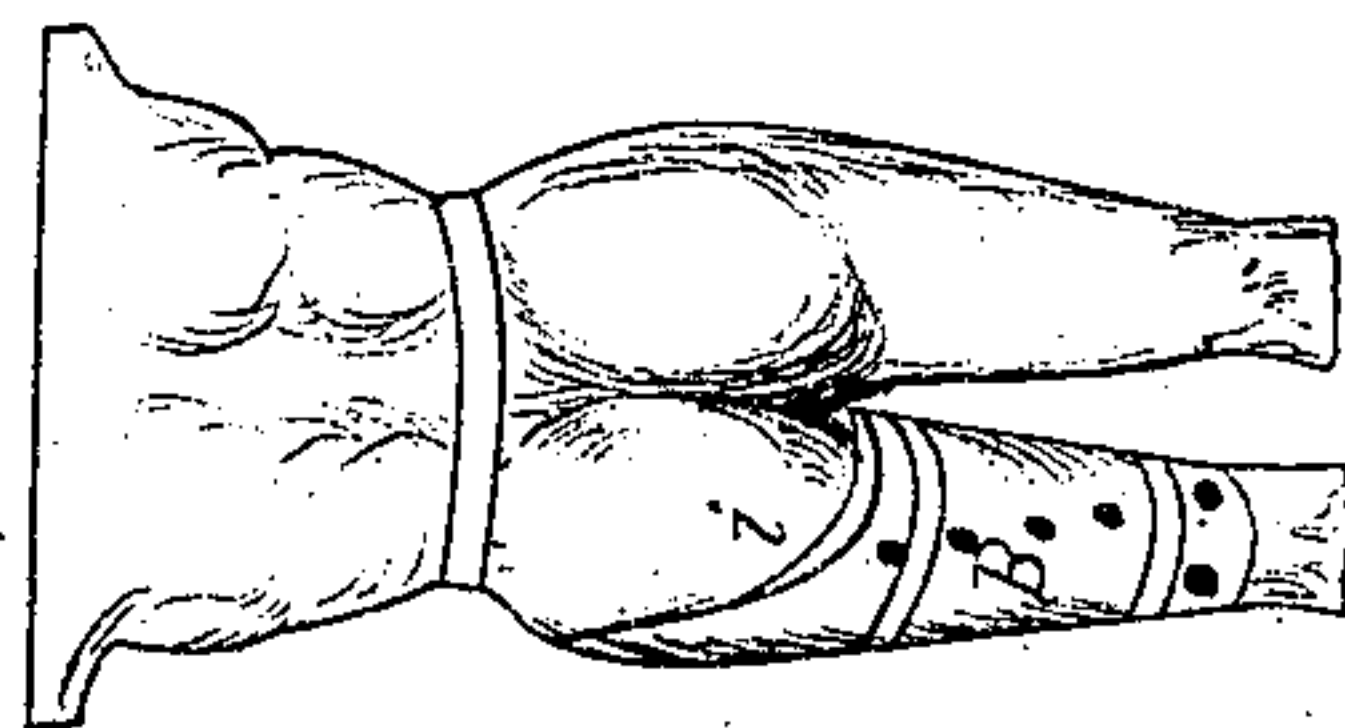


Fig. 1

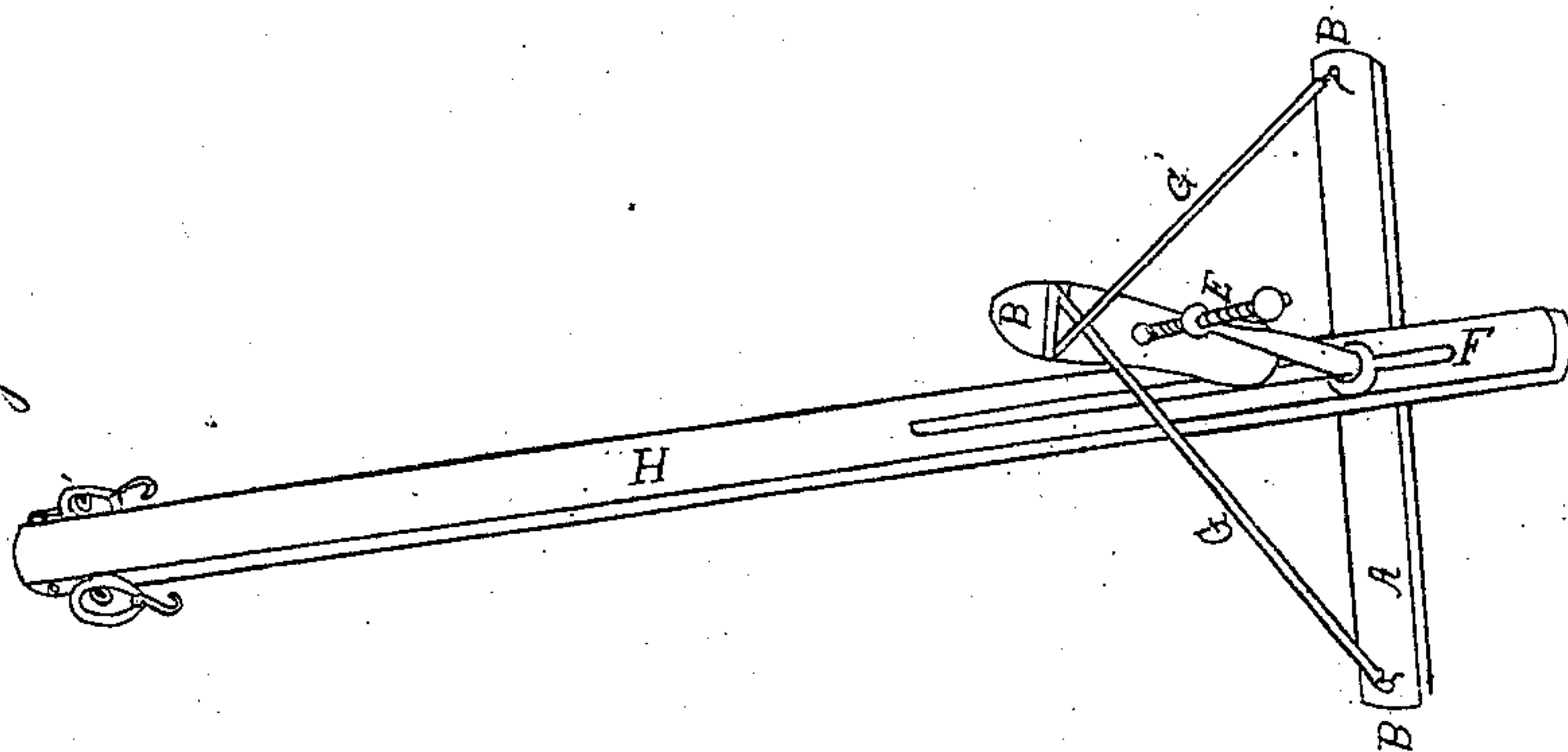
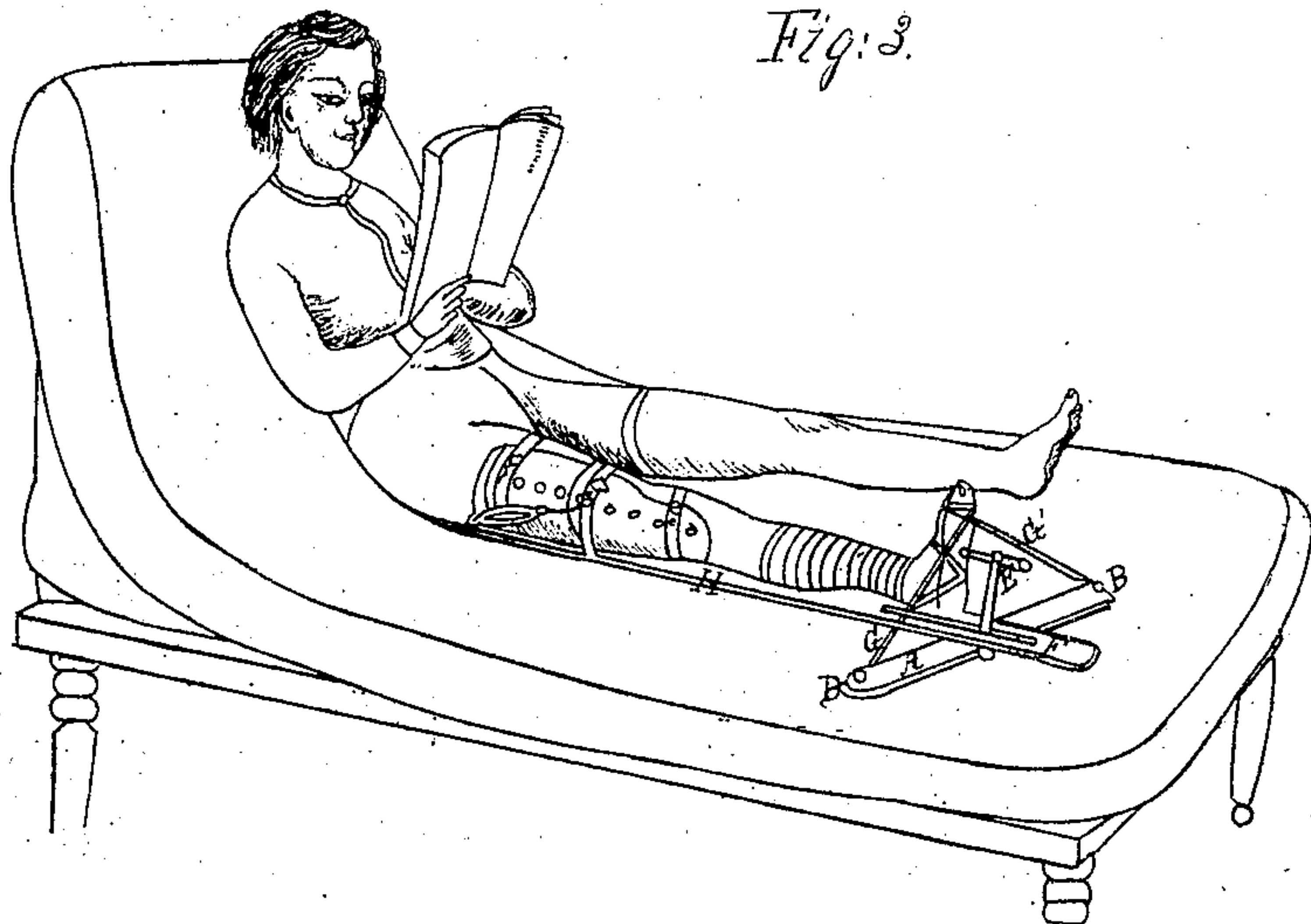


Fig. 3.



WITNESSES

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## IMPROVED APPARATUS FOR TREATING FRACTURES AND DISPLACEMENTS.

Specification forming part of Letters Patent No. 72,215, dated December 17, 1867.

*To all whom it may concern:*

Be it known that I, JAMES S. McCLELLAND, of Crawfordsville, Montgomery county, and State of Indiana, have invented a new and Improved Apparatus for Treating Fractures and Displacements of the Limbs; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents top view of my improved apparatus for treating fractures and displacements of the limbs. Fig. 2 represents front and back views of my metallic splints, with peculiar shape of same. Fig. 3 represents my improved apparatus for treating fractures and displacements of the limbs as applied, showing extension and counter-extension in a fracture of middle third of thigh.

Similar letters indicate like parts.

My invention has for its object to furnish an improved apparatus by means of which fractured limbs may be treated with greater ease, safety, and convenience to the patient and surgeon; and it consists in the arrangement of certain devices, as will be hereinafter more fully described.

H in Fig. 1 is the extension-board of the apparatus; F, the slot in extension-board, and is made from ten to twelve inches long, for the purpose of adjusting the extension-screw and foot-piece, applicable to a limb of any length; A, the cross-piece, fifteen inches long, with rings B B', for the purpose of fastening tape-line G G', for the purpose of maintaining the foot in any position required; D, foot-piece; E, extension-screw, for the purpose of adjusting foot-piece and giving required tension to limb; C C', counter-extension rubber rings with metallic hooks attached, as shown in drawing. A A' in Fig. 2 A represent front view of metallic splint, with peculiar shape of same. Numerals 1 and 2 represent adjusting belts or bands of same. I in Fig. 2 B represents cushion of back view of metallic splint, also perforation of same. 1, 2, and 3 in Fig. 3 represent belts or bands of splint, as applied in fracture of middle third of thigh, with extension E D and counter-extension C C'.

The advantages claimed for the counter-extension metallic splint are, first, facility of application; second, lightness and portability; third, security to the fracture in movements of the patient or limb; fourth, facility of fully

examining the fractured part without moving the same, by unbuckling the straps and springing the splints apart while an assistant makes counter-extension in place of the rubber rings which are then unhooked from the splint; fifth, ability to compare the injured limb with its fellow at all times, so as to note the length and position; sixth, perfect extension and relaxation of the muscles of the injured limb by the contracting power of the rubber rings; seventh, full and complete support to the limb before dressing and after swelling, by the ease with which the splint can be tightened or loosened by the use of the straps or bands and buckles surrounding the same; eighth, extension being kept up by the elasticity of the rubber rings during the absence of the surgeon, even should the patient by his movements loosen the dressing; ninth, comfort to the patient by allowing greater freedom of motion both to him and the injured limb, the latter being able (in all fractures below the neck of the bone) to be freely moved in all directions without the least pain or danger of displacement of the fracture, the extension and counter-extension remaining perfect during such movement; tenth, the elastic counter-extension being applied to both sides of the limb, thus rendering the action of the extending-screw attached to the foot-piece, said foot-piece being attached to the foot and leg by adhesive straps equal upon all the muscles of the limb; eleventh, the splints used are cut of a suitable form from sheets of zinc or other similar metal, in a shape to exactly envelop the limb, (said sheets of metal being perforated for ventilation and the attachment of the hooks attached to the rubber rings.)

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

The device of a fracture-adjusting apparatus herein described, consisting of the use of rubber counter-extension C C', Fig. 1, extension-screw E, board H, with cross-bar A, the peculiar shape and design of thigh-splint, (Fig. 2 A,) A A' and (Fig. 2 B) B B', substantially as herein set forth.

The above specification of my invention signed by me this 24th day of September, 1867.

JAMES S. McCLELLAND.

Witnesses:

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