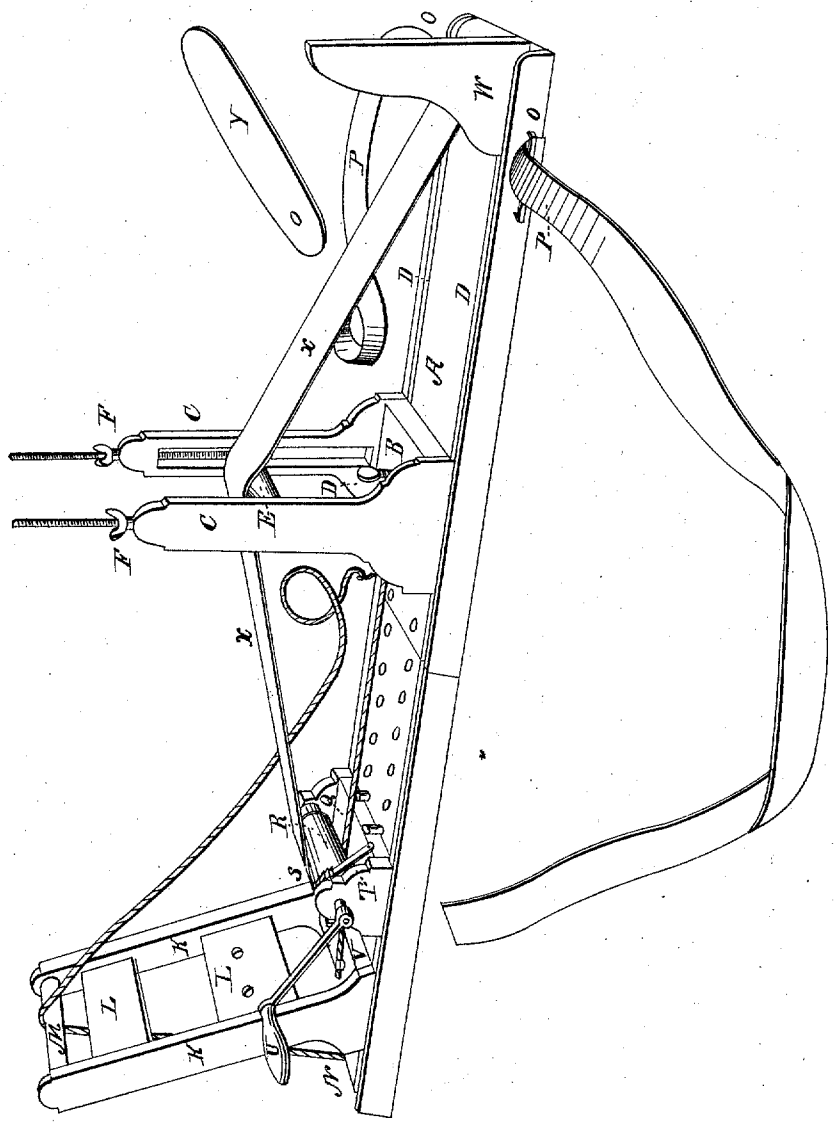
9720X

J. H. Willard,

Fracture Apparatus,

Patented June 11, 1836.



AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS.)

6/11/1836 9720X

a 12

Pat June 11. 1836 545

James H Willard
Bellas Patent

The Schedule referred to in these Bellas Patent and making part of the James containing a description in the words of the said James H. Willard himself of his improvement in the apparatus for setting the bones of fractured limbs.

Be it known that I James H. Willard of Brownhelm in the County of Erain and State of Ohio have invented a new and useful improvement being an apparatus for setting the bone of fractured limbs which invention is described as follows reference being had to the accompanying drawings. Said apparatus consists of a board A of suitable length and breath having two grooves D. D. running the entire length of the board A for the reception of slides and a joint near the centre. N. N. A slide B. with two erect standards C. C. having a groove in each through which pass long metallic screws attached at their lower extremities to a cross bar E. with thumbnuts F. F. resting upon the upper extremity of the ground piece C. C. at the bottom of slide B. is a thumb screw D. 2nd A slide Q. with a roller R. a cog wheel S. a cog T. and a crank U. 3d a slide V. with two oblique standards W. W. two flat cross bars L. L. the former having two perforations and there is a roller M. at the top of the standards W. W. 4th a slide W. called a cleat. At the upper end of board A. and on the under side is attached a broad strip of webbin X. which passes over the cross bar E. on the slide B. and is attached to the roller R. in slide Q. At the lower extremity of A is a pulley N. At the upper end of the board on both sides are two staples O. O. through which passes a strap P. Y. thus board splint. In the application of this apparatus I claim certain new grounds. In the first place the gravitation of the body is kept from the apparatus thereby preventing

6/11/1836 9720X

ing the necessity of any counter extending force. In the second place the flexor and extensor muscles are balanced or antagonized by keeping the limb in a flexed or bent position.

In the third place the extension is made directly in the axis of the broken bones the apparatus commands the whole limb. It dispenses the necessity of tight lacing, and prevents all eyceriation from unequal pressure. It admits of the limb being dressed without a possibility of moving or misplacing the bones. which makes it of great importance in all comminuted fractures. It prevents the contraction of the muscles and consequent misplacing of the bones. by keeping up a gradual and permanent extension thereby procuring the greatest possible degree of safety and convenience. The apparatus places the limb in a situation the most favorable for a free circulation of air around it in every direction. To apply the apparatus in case of fractured femur. a bandage called a roller should be attached to the webbing at its upper extremity. The cross bar B. in slide B. should be brought by means of the screws to such a point of elevation as the length of limb requires. The slide A should then be placed at such a distance from the groin as to permit the head to just rest over the roller R. The webbing should now be made tight. The slide B must be placed a little short of the length of the sound thigh. The slide W should be placed in that groove which will correspond with the inside of the fractured thigh brought down to the slide B. and there left. The operator must then take a handkerchief or fillet above the condiles of the knee, and give the limb into the hands of an assistant in a flexed position. and the assistant will slide the apparatus under the limb and apply and secure till the upper extremity of the apparatus rests firmly upon the tuberosity of the Ischium. The outside or slide W should now be brought up on the groin and firmly pressed against the pubis and secured by the screw. b. the limb should then be placed

placed upon the ancle, taking care that the hollow of the hammer sits directly over the cross bar B. The limb will now be fastened to the cross bar by means of the strap or fillet. Such extension should then be made as is necessary to bring the bones in proper position and the slide B. fastened by the thumb screw. An assistant will now be directed to clasp the limb with both hands and draw the muscles from above downwards as in the manner of dressing a stump after amputation. While the Operator brings the bandage after his hands, till he comes to the knee including the ancle, when he should cross the bandage once or twice over the knee and under the cross bar in the form of a figure 8 then apply the splint X on the top of the thigh and carry his roller back to the starting place. Additional extension can be made at discretion by attaching the cord of pulley N. to the projecting extremity of splint X. and letting it pass over the pulley M in slide V. What I claim as my invention and which I desire to secure by Letters Patent consists in the apparatus for setting and securing the bones of fractured limbs as before specified and described

Witnesses
Wm. P. Elliot
Edmund S. Cook

James H. Wellborn

996 wds

(Patented 11 June 1836)

Drawing