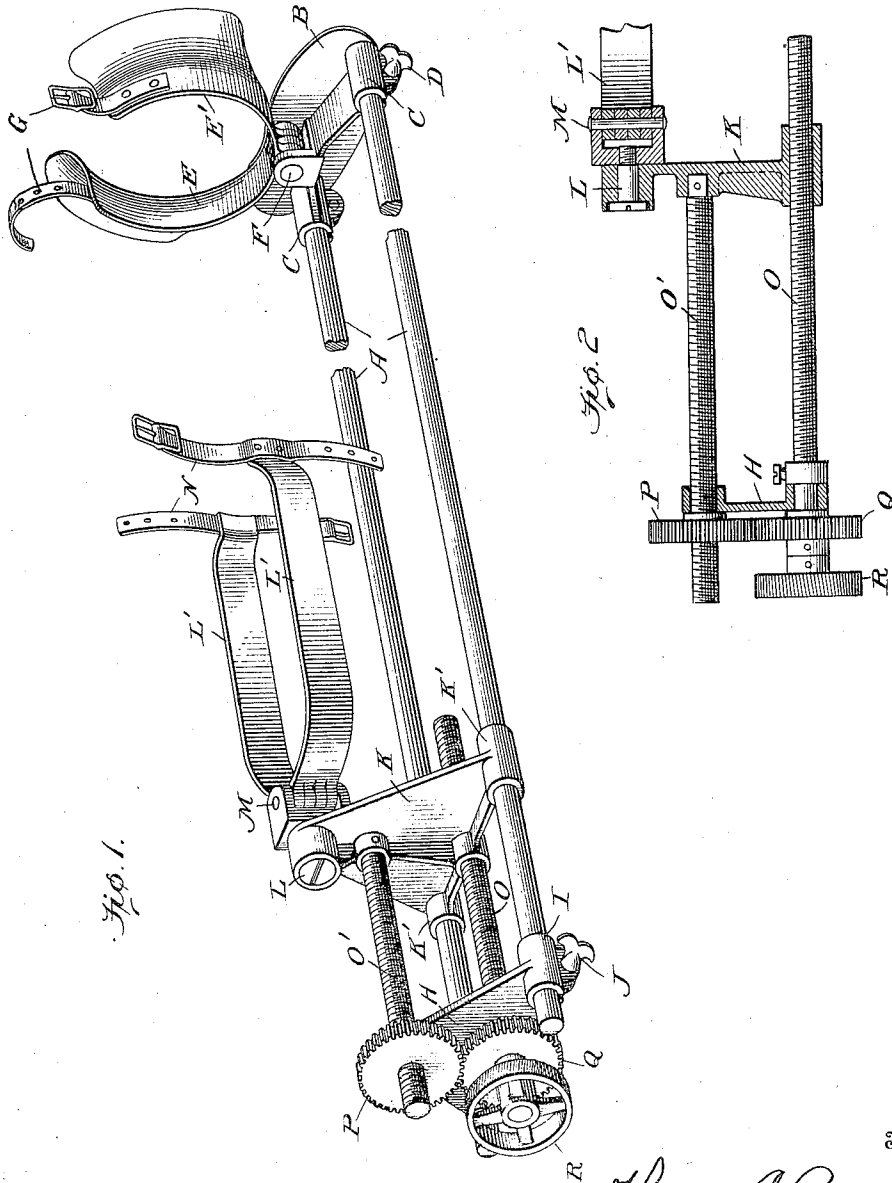


T. E. RODGERS.
SURGICAL APPLIANCE.
APPLICATION FILED SEPT. 29, 1909.

Patented May 24, 1910.

959,389.



Witnesses

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SURGICAL APPLIANCE.

959,389.

Specification of Letters Patent. Patented May 24, 1910.

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To all whom it may concern:

Be it known that I, THOMAS E. RODGERS, citizen of the United States, residing at Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Surgical Appliances, of which the following is a specification, reference being had therein to the accompanying drawing.

When an arm or a leg is broken or dislocated, the involuntary contraction of the adjacent muscles makes it difficult to extend and rotate the limb in such manner as to adjust accurately the fractured surfaces and more difficult to maintain such adjustment until proper splints and bandages can be applied.

To obviate these difficulties is the general object of this invention, and the object is attained by providing a rigid track having at one end a limb clamp and a plate to rest against the body alongside the limb, and at the other end a frame fixed to the track and provided with two screws which force along the track, always parallel to its initial position, a carriage bearing a second limb clamp parallel to the first and at some distance from the track, this second clamp being in alinement with the first and mounted to rotate upon its own axis which approximately coincides with the axis of the first clamp and that of the limb.

In the accompanying drawings, Figure 1 is a perspective view of apparatus embodying the invention. Fig. 2 is a section in the plane of two carriage operating screws.

In these views, A represents a track, shown in this instance as consisting of two parallel rods connected at one end by a plate B, adapted to rest against the body alongside the limb to be set and detachably fixed to each of the rods by a split sleeve C and a clamping screw D. To the plate at some distance from the track are secured two limb clamping members E, E' which are shaped to fit to some extent the surface of the body alongside the limb. Each member is pivoted upon an axis F parallel to the track, and the two are drawn together about the limb and secured by straps G. It is to be noted that the clamp as a whole may swing upon this axis to adjust its position with respect to the plate B. Near their opposite ends, the two rods are connected by a frame

means of split sleeves I and clamping screws J. Upon the rods between the frame and the plate B, and near the former, is placed a sliding carriage or clamp support K having long sleeve bearings K' and carrying a second limb clamp pivoted upon an axis L, nearly parallel to the track, having two jaws L' swinging upon a pivot M perpendicular to the axis L and adapted to be clamped upon a limb and secured by straps N. The carriage is forcibly moved along the track and held at all times at the same angle therewith by means of two equal and parallel oppositely threaded screw rods O, O', the first rotating freely, without advance, in the frame and in threaded engagement with the carriage through which it passes, and the second fixed in the carriage, passing loosely through the frame, and engaged by a threaded gear or gear nut P resting against the outer side of the frame and rotated by an equal gear Q fixed, alongside the frame, upon the shaft O. This latter shaft is rotated by means of a hand engaged device such as a milled wheel R.

From the construction it is obvious that the entire appliance is, in use, bound to the limb operated upon and is then free to swing with the limb in any direction, and it is also plain that rotation of the shaft O in the proper direction will draw the carriage forcibly toward the frame, always holding it at precisely the same angle with the track, so that there can be no binding at any point, nor any uncertainty as to the line in which the limb is extended, if it be properly clamped or held by both clamps. It is also evident that the frame and carriage may be adjusted in position to suit the length of any limb to be operated upon, and that the limb being at a convenient distance from the track, splints and bandages may be properly and quickly applied when the broken bone or dislocation has been brought exactly into place. The clamp upon the plate B serves merely to secure and maintain proper alinement and it need not in any case be bound tightly upon the limb. The other clamp is to grasp the limb firmly and it has long jaws so that it may fit limbs of different size and may allow any desired protection to be placed upon or around the limb.

Since certain variations from the exact construction shown are within the proper limits of my invention, I desire to claim

the invention without limitations other than such as appear in such claims as may be allowed.

What I claim is:

- 5 1. The combination with a rigid track provided at one end with a transverse plate to rest against the body alongside a limb to be operated upon, of a lateral clamp, adjacent to said plate, adapted to clamp the track to the limb, a second limb clamp supported from the track and rotatably adjustable about the common axis of the limb and the two clamps, and means for forcibly varying the distance between the two clamps while leaving the second free to be rotatably adjusted.
- 20 2. The combination with a rigid track having at one end a lateral limb clamp and a transverse plate to bear against the body alongside the limb, of a rigid frame adjustably fixed to the track at some distance from said end, an intermediate sliding carriage bearing a limb clamp rotatable about the axis of the limb held in the two clamps, and a screw connection between the frame and carriage for compelling the latter to move along the track.
- 30 3. The combination with a rigid track, of a limb clamp at some distance to one side of the track and rigidly connected with one end portion of the same, a rigid sliding frame adjustably fixed to the track at some distance from said end portion, an intermediate sliding carriage mounted upon the track, parallel screws unequally distant from the track and connecting the frame and carriage, means for rotating the screws in unison to advance the carriage without changing its angle with track, and a second limb clamp alining with the first and pivoted to the carriage to rotate in a plane transverse to the track.
- 40 4. The combination with the two parallel rods connected at one end by a transverse plate adapted to rest against the body of a

patient, of a limb clamp secured to the plate at some distance from the rods, a rigid, longitudinally adjustable frame connecting the rods near their opposite ends, an intermediate sliding carriage a second limb clamp alining with the first and pivoted to the carriage to rotate in a plane transverse to the rods, and two oppositely threaded rods connecting the frame and carriage and arranged for simultaneous rotation, substantially as set forth.

5. The combination with a rigid track having near one end a lateral clamp for securing that end to the limb to be operated upon, of a clamp support mounted upon the track at some distance from that end, a second clamp pivotally secured to said support to rotate about an axis approximately parallel to said track and including hinged clamping jaws and means for binding the free ends of the jaws against the limb, and means for forcibly adjusting said support along the track.

6. In limb setting apparatus adapted to be bound to the limb and to swing freely therein in any direction, the combination with a rigid track, of a limb clamp at one end of said track, arranged to rock laterally with respect to the same and adapted to bind that end of the track to the limb, a clamp support adjustable along a distant portion of the track, a second clamp borne by said support, rotatably adjustable about the axis of the limb, and adapted to bind the corresponding portion of the track to the latter, and means for forcibly adjusting said support along the track and holding it in any of its positions.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS E. RODGERS.

Witnesses:

WALTER GOODMAN,
PEARL WATSON.