No. 743,663. PATENTED NOV. 10, 1903.

J. SCHEIDL.

SURGICAL DEVICE FOR SETTING FRACTURED LEGS.

APPLICATION FILED JULY 24, 1903.

NO MODEL.

FIG. 1.

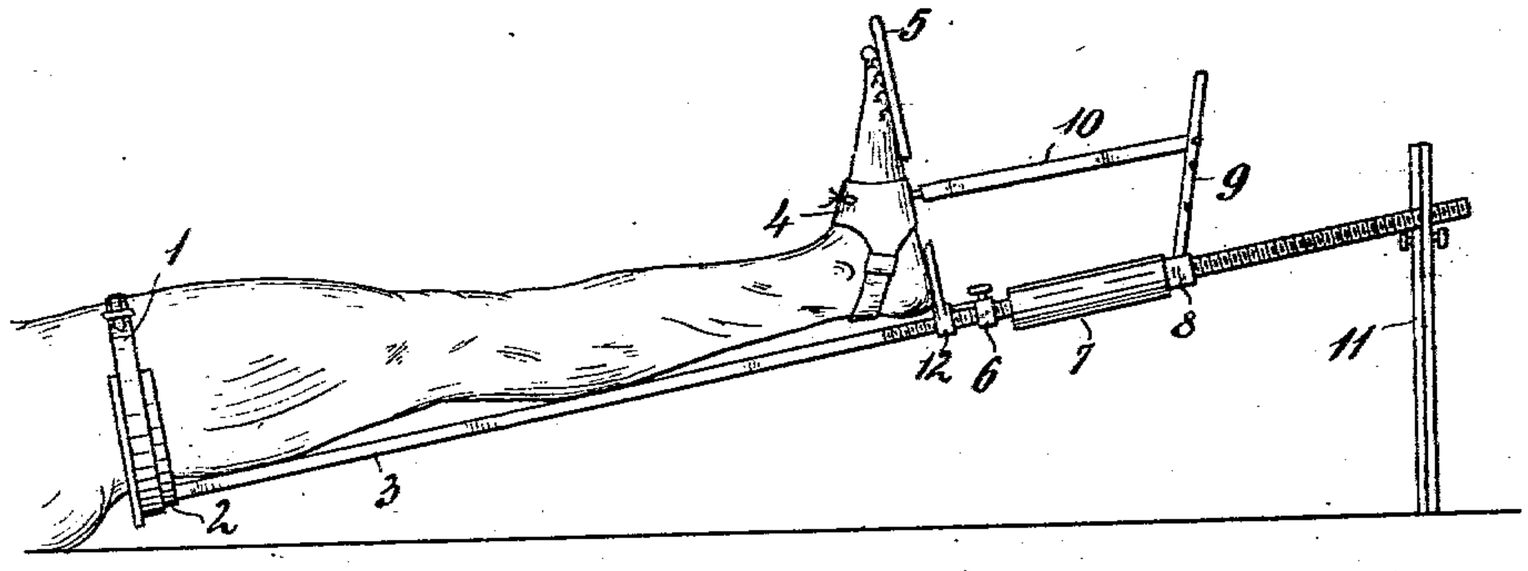
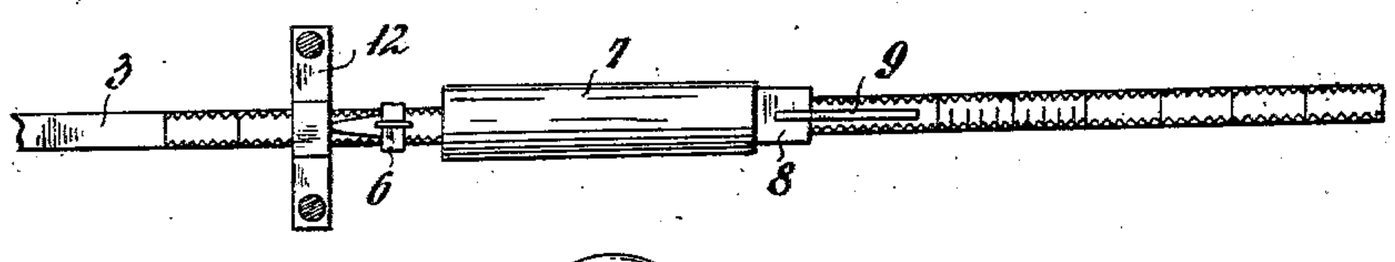


FIG. 2.



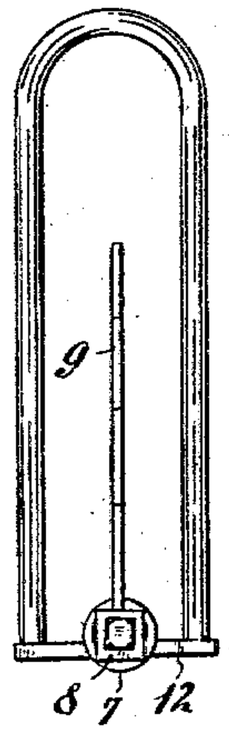


FIG. 3.

WITNESSES:
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No. 743,663. Patented November 10, 1903.

UNITED STATES PATENT OFFICE.

JOHANN SCHEIDL, OF FILIALE BADEN, NEAR VIENNA, AUSTRIA-HUNGARY.

SURGICAL DEVICE FOR SETTING FRACTURED LEGS.

SPECIFICATION forming part of Letters Patent No. 743,663, dated November 10, 1903.

Application filed July 24, 1903. Serial No. 166,888. (No model.)

To all whom it may concern:

Be it known that I, JOHANN SCHEIDL, doctor of medicine, a subject of the Emperor of Austria-Hungary, residing at Garnisonsspital No. 2, Filiale Baden, near Vienna, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in Surgical Devices for Reducing Fractured Legs, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to make and use the same.

This invention relates to a device for reducing fractured legs before the application of the plaster-of-paris or similar permanent bandage in order that a single doctor may be able without the aid of an assistant and without causing the patient excessive pain to bring all the members of the broken limb into their proper position and also to stretch the leg to exactly the right length, whereupon the plaster-of-paris or the like retaining bandage may be applied to the leg while extended in the appliance, the parts of which may, however, be then removed with the exception of a single member.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the appliance adapted to a leg. Fig. 2 is a plan view of a portion of the appliance, and Fig. 3 is an end elevation of the same.

Around the upper part of the broken limb is passed a strap 1 in such a manner that it is secured from displacement by the tuber ischii. Upon the foot a bandage 4, presenting three openings, is buckled or laced around the instep, heel, and the sole of the foot in such a manner that through the three openings the toes, the heel, and the ankle project, respectively. Thereupon a metal rod 3 is inserted in a metal socket 2, attached to the strap 1, in such a manner that it extends along the back of leg, which it serves to support. A bow-shaped part 5, which is adapted to slide upon the rod 3, but not to rotate thereon, is then pressed against the foot from the free extremity of the rod. This part serves as a support for the foot and should fit the sole as nearly as possible, so that at least two of these parts should be included with each appliance, one for the right and another for the left foot. This part 5 consists of a metal bar bent to a U shape, the portion lying upon the inner edge of the sole being suitably curved. The extremities of the U-shaped part are merely fitted with slight friction into holes in a cross-piece 12, adapted to slide, but not to rotate, upon the rod 3. Next the outer or under side of the part 5 is arranged an indicator 6, which is followed by a nut 7, engaging in a screw-thread formed upon the outer end of the rod 3, and finally by a socket 8, adapted to slide freely upon, but not to rotate around, the rod and provided with a projecting arm 9. When these parts have been passed upon the rod 3 in the manner above stated, a rod 10 is engaged on the one hand in the bandage 4 and on the other in the arm 9. Now the nut 7 is rotated in such a manner that it is displaced outward along the screw-thread, carrying the socket 8 and arm 9 with it. By means of the rod 10 the foot and the part 5 will also be displaced with it, and as the inner end of the rod 3 is retained by the socket 2, movement of which is prevented by the tuber ischii, the leg will be extended powerfully, but gradually, and therefore with the least possible pain to the patient. As the foot-bandage 4 is supported on the instep and on the heel-bone, the tractive effort will be exerted exactly in the direction of the longitudinal axis of leg, so that no distortion or twisting can take place during the stretching. By this means the fractured parts may be caused to occupy exactly the proper positions, and the leg may be submitted to any necessary further treatment. The limit to which the broken leg is to be stretched is defined by the indicator 6, which is adjusted on the rod in accordance with the length of the other leg and against which the cross-piece 12 finally bears. After the fracture has been completely reduced in this manner the leg is raised and supported by resting the outer end of the rod 3 in a suitable support 11 of any known kind. The plaster bandage is then applied in such a manner that it surrounds the rod 3, (with the exception of the socket 2,) the foot-bandage 4, and the part 5, with its cross-piece 12. As soon as the bandage has set the rod 10 is disengaged and removed, and the rod 3 is removed from the bandage in the direction of its length, which is attended with but little difficulty. The strap 1 is then re-

moved, the part 5 is drawn under the toes, and the cross-piece 12 laterally through a hole bored in the bandage, whereupon the hole in the bandage utilized for the withdrawal of the cross-piece is filled up. The foot-bandage 4 is allowed to remain in the plaster bandage, which is now complete.

It will be understood from what has been stated that the entire reducing of the fractured leg and the application of the permanent bandage may all be effected by a single doctor without the aid of an assistant and without occasioning excessive pain to the patient and that the operation may be performed very exactly and speedily.

In order that the supination or inward turning of the inside edge of the foot which is frequently necessary in the case of fracture of the inner ankle-bone may be effected, it is only necessary to arrange the cross-piece 12 obliquely on the rod 3, which may readily be done by obliquely placing the passage in the cross-piece through which the rod passes.

I claim—

1. In an appliance for reducing fractured legs before the application of the permanent plaster-of-paris or the like bandage, the combination of a rod adapted to lie against the back of the leg, with a socket adapted to be attached to the upper part of the leg and to support one end of the rod, an arm on the other end of the rod, means for adjusting the said arm along the rod, and means for preventing the said arm from turning on the rod, a foot-bandage attaching the bandage to the arm, substantially as described.

2. In an appliance for reducing fractured legs before the application of the permanent plaster-of-paris or the like bandage, the combination of a rod adapted to lie against the back of the leg, with a socket adapted to be attached to the upper part of the leg and to support one end of the rod, an arm on the other end of the rod, means for adjusting the said arm along the rod and means for preventing the said arm from turning on the rod, a foot-bandage adapted to be passed around the foot and means for detachably attaching the bandage to the arm, a bow-shaped part fitting the sole of the foot as nearly as possible, such bow-shaped part being adapted to be displaced on the rod without turning thereon, substantially as described.

3. In an appliance for reducing fractured legs before the application of the permanent plaster-of-paris or the like bandage, the combination of a rod adapted to lie against the back of the leg with a socket adapted to be attached to the upper part of the leg and to support one end of the rod, an arm on the other end of the rod, means for adjusting the said arm along the rod, and means for preventing the said arm from turning on the rod, a foot-bandage adapted to be passed around the foot and means for detachably attaching the bandage to the arm, a cross-piece adapted to move along the rod, but not to turn around thereon, holes in said cross-piece and a U-shaped metal bar adapted to enter such holes, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHANN SCHEIDL.

Witnesses:

T. GEORGE HARDY,

ALVESTO S. HOGUE.