No. 792,407. PATENTED JUNE 13, 1905.

W. EMGE.

SUPPORT FOR THE TREATMENT OF INJURED LEGS.

APPLICATION FILED DEC. 6, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

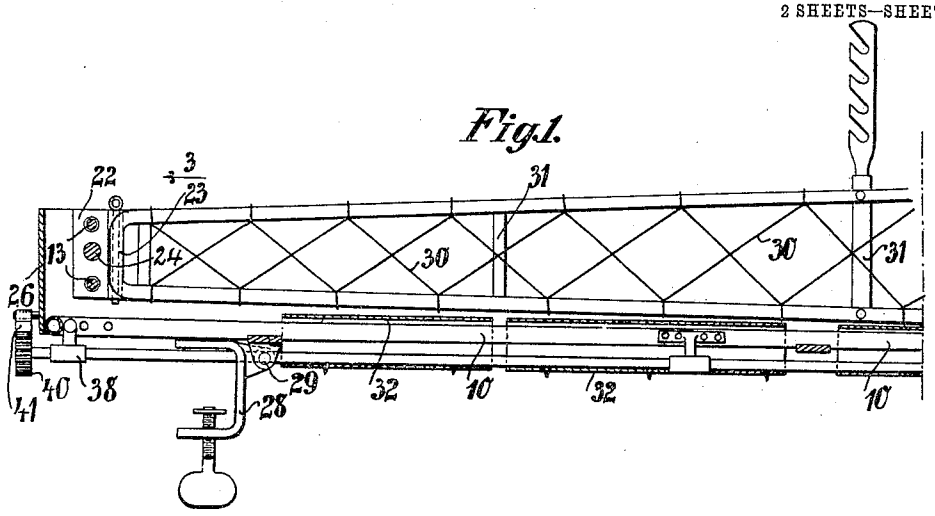


Fig. 2.

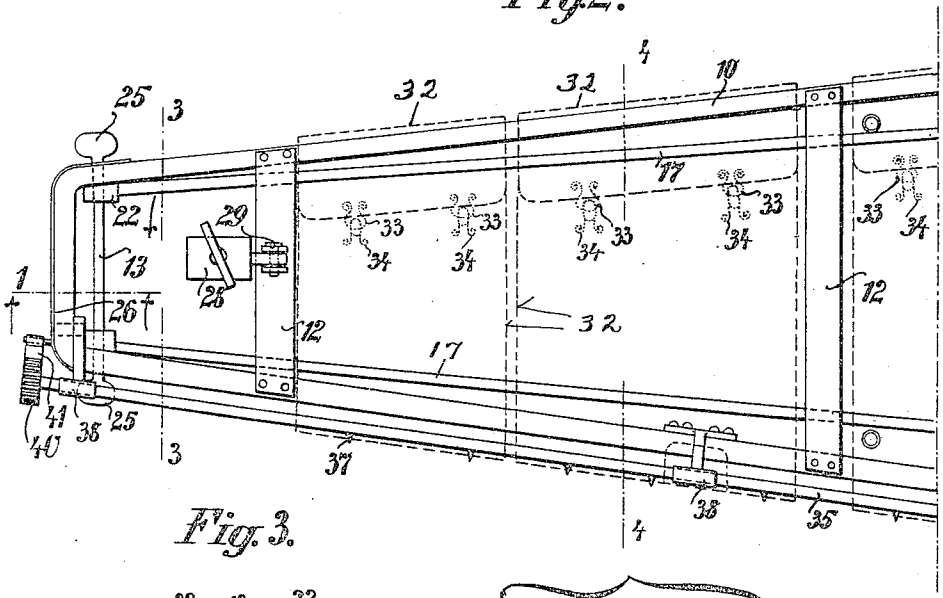
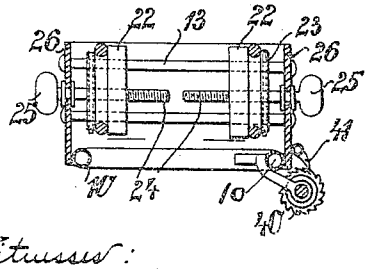


Fig. 3.



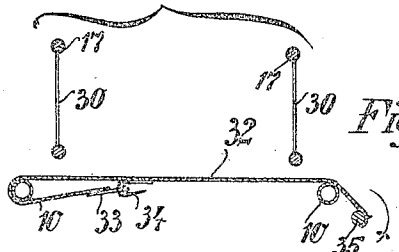


Fig. 4.

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APPLICATION FILED DEC. 6, 1904.

2 SHEETS—SHEET 2.

Fig. 1ª.

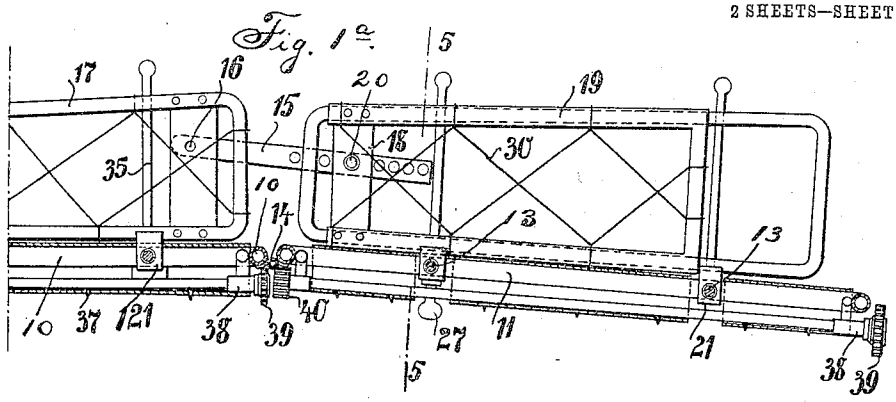
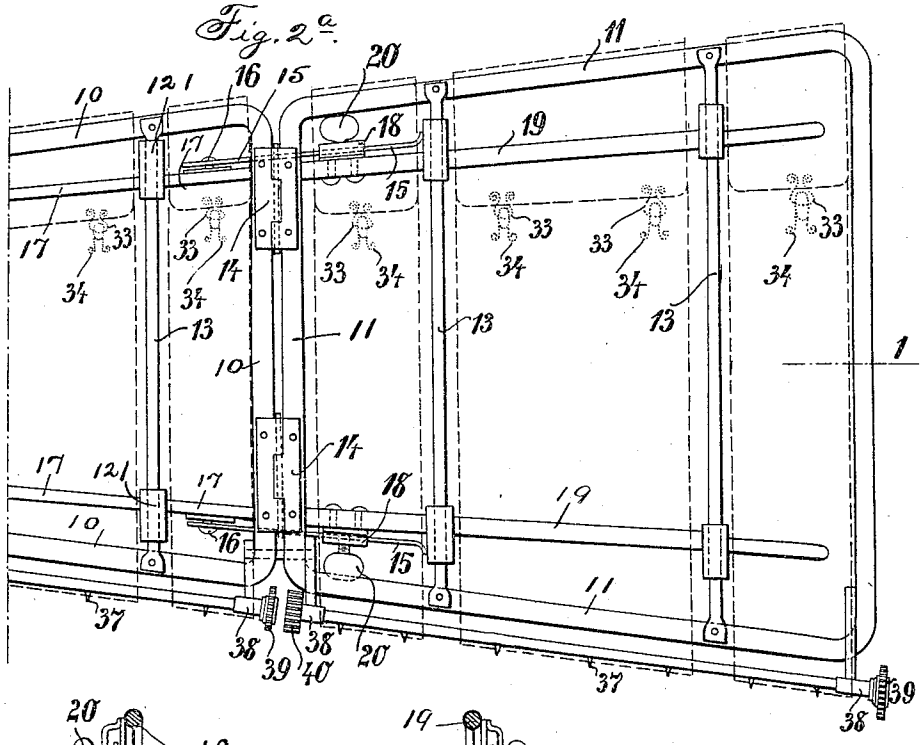


Fig. 2ª.



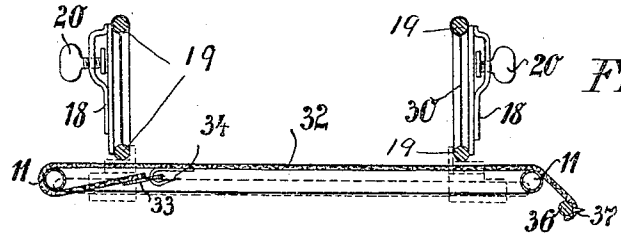


Fig. 5.

Witnesses:
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PHOTO-LITHOGRAPHED BY SACHETT & WILHELMS LITHO. & PTG. CO. NEW YORK

No. 792,407. Patented June 13, 1905.

UNITED STATES PATENT OFFICE.

WENDEL EMGE, OF HOHENTENGEN, GERMANY.

SUPPORT FOR THE TREATMENT OF INJURED LEGS.

SPECIFICATION forming part of Letters Patent No. 792,407, dated June 13, 1905.

Application filed December 6, 1904. Serial No. 235,753.

To all whom it may concern:

Be it known that I, WENDEL EMGE, physician, a subject of the King of Würtemberg, residing at Hohentengen, in the Kingdom of Würtemberg and Empire of Germany, have invented certain new and useful Improvements in Supports for the Treatment of Injured Legs, of which the following is a full, clear, and exact specification.

The subject of this invention is an improved surgical apparatus intended to serve as a support to a broken or seriously-injured limb, allowing at the same time a perfect inspection of the same.

The apparatus does not hamper the movements of the healthy limb, and it allows of treating the injured limb in a stretched or bent position, therefore allowing a limited bending or freedom of the knee or elbow.

The apparatus consists of two connected bottom frames respectively serving to support the upper and lower parts of the limb, each of these frames being provided with adjustable side frames which serve to keep the leg in the position prescribed by the physician and which can be shifted laterally, and said bottom frames are also provided with supporting-cloths, which may be stretched to any desired degree.

The accompanying drawings illustrate the preferred form of the apparatus.

Figures 1 and 1^a represent a longitudinal section on the line 1 1, Figs. 2 and 2^a, while Figs. 2 and 2^a represent a bottom plan view of the apparatus. Fig. 3 is a cross-section on the line 3 3 of Figs. 1 and 2. Fig. 4 is a cross-section on the line 4 4 of Fig. 2. Fig. 5 is a section on the line 5 5 of Fig. 1^a.

Similar figures refer to similar parts throughout the several views.

The two frames 10 and 11 may be of metal tubing, but should be as light as possible and may be strengthened by cross bars or struts 12 and 13. Said frames 10 and 11 are united at their adjacent ends by hinge-joints 14, so that the limb may be bent as desired.

The angle at which the two frames 10 and 11 are set may be made larger or smaller by means of the bars 15, which, for instance, are pivoted at 16 on laterally-adjustable side frames 17, attached to the front frame 10, while the other ends of bar 15 pass through guides 18, firmly united to the laterally-adjustable side frames 19 on the rear frame 11. By means of screws 20 passed through holes in the guides 18 and bars 15 these bars can be set so as to hold the frames secured in the position given to them and prevent undesirable turning of the two parts of the apparatus on their hinge-joints.

The laterally-adjustable side frames 19 and the rear ends of side frame 17 are supported on the cross-bars 13 by slide-blocks 21, which can be easily shifted on these bars 13. The blocks 21 are of course rigidly fixed to the lateral sides 17 and 19. The front ends of the sides 17 are united to slide-blocks 22 by hinge-joints to allow of the sides 17 being turned laterally. The hinge-joints 23 are indicated in Fig. 1 only by dotted lines, while they are shown in Fig. 3 in elevation. Through these slide-pieces 22 pass adjusting-screws 24, which can be turned by means of the heads 25 and are rotatably fastened in vertical side pieces 26, arranged at the front end of the frame 10 in such manner that they cannot get displaced lengthwise.

The screws 24 engage threaded apertures in blocks 22, and consequently the front ends of the sides 17 may be shifted sidewise or crosswise by turning the screws 24. The blocks 21, which secure the sides 19 in their upright position and also serve as a support to the rear ends of the sides 17, must rest somewhat loosely on the bars 13, so that they can be shifted easily and admit of a limited angular adjustment of the sides 17 on frame 10. In order to firmly secure the sides 19 and the rear ends of the sides 17 in any desired position, any suitable means may be provided. In the drawings ordinary adjusting-screws 27 are shown, which are screwed into the blocks 21 from below, and their points press against the bars 13, and therefore act as clamps.

The whole supporting apparatus composed of the two frames 10 and 11 and the sides 17 and 19 may be placed on the patient's bed,

and the front frame 10 can be fastened to the bed by means of the screw-clamp 28, united to frame 10 by the hinge-joint 29.

A wire net 30 or the like may be stretched across the side frames 17 and 19, and vertical bars 31 serve to prevent these side frames bending.

Bands 32, stretched across frames 10 and 11, support the limb and are held in the manner shown in Figs. 4 and 5—that is to say, these bands 32 are simply placed around one side member of frame 10 or 11 and held by hooks and eyes 33 34 in such manner that they cannot detach themselves. The other ends of the bands 32 pass over the opposite longitudinal member of the frame 10 or 11 to a roller 35 or 36, over the points 37, of which small eyes in the pieces of cloth 32 are hooked. The rollers 35 are supported in bearings fixed to the frames 10 and 11. Each roller carries at one end a button 39, by means of which it can be turned, and at the other end a ratchet-wheel 40, in which engages a pawl 41. By turning the rollers 35 the bands may be stretched or relaxed, as desired. In order to stretch or relax each piece of cloth separately, which, for instance, may be desirable if the apparatus is not only to be used to treat a broken leg, but also for external injuries on the back of the leg, each band may be provided with an individual roller.

What I claim as my invention, and desire to secure by United States Letters Patent, is—

1. In a support for the treatment of injured limbs, the combination of two bottom frames united by hinge-joints at their adjacent ends, and provided with transverse bands for supporting the limb, said bands being operated by independent rollers at the side of the bottom and upright laterally-adjustable side frames attached to each bottom frame and adapted to regulate the position of the injured limb, substantially as set forth.

2. In combination, two open bottom frames, a hinge connection therebetween, limb-supports attached to said frames; a pair of side frames attached to the foremost bottom frame having an adjustable hinge connection therewith at their front ends; a pair of laterally-adjustable side frames attached to the rear bottom frame, and adjustable connections between the adjacent side frames.

3. In combination, a pair of bottom frames arranged end to end, a connection therebetween; adjustable limb-supporting bands attached thereto; a pair of adjustable side frames attached to the foremost bottom frame, means for adjusting said side frames; a pair of side frames adjustably attached to the rearmost bottom frame, means for adjusting the latter side frames; and an adjustable connection between adjacent side frames on the bottom frames, substantially as and for the purpose described.

In witness whereof I subscribe my signature in presence of two witnesses.

WENDEL EMGE.

Witnesses:

CARL M. HERBECK,

FRANZ HR. BAUMANN.