G. GASSETTE.

SURGICAL OR ORTHOPEDIC APPLIANCE FOR THE TREATMENT OF THE ANKLE.

APPLICATION FILED MAR. 3, 1919.

1,383,928. Patented July 5, 1921.

2 SHEETS—SHEET 1.

Fig. 1.

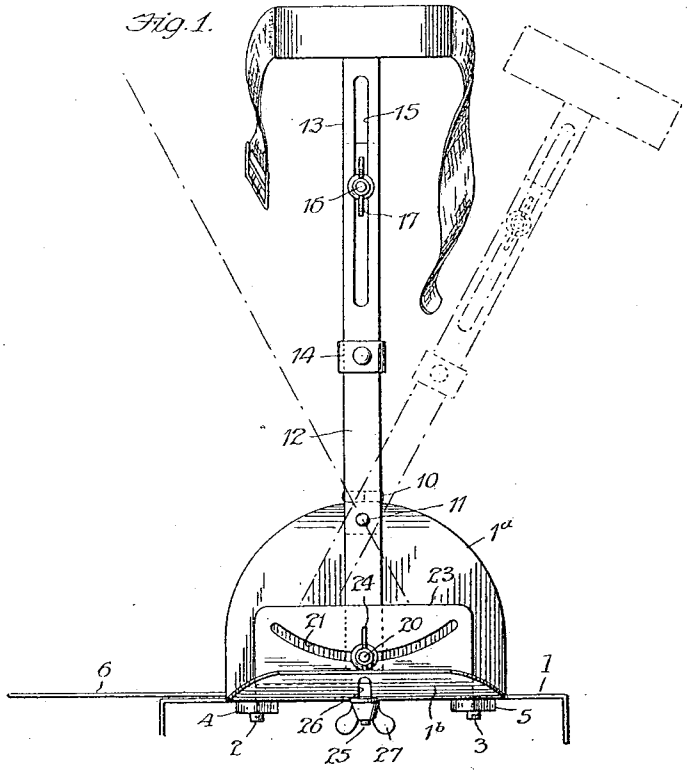
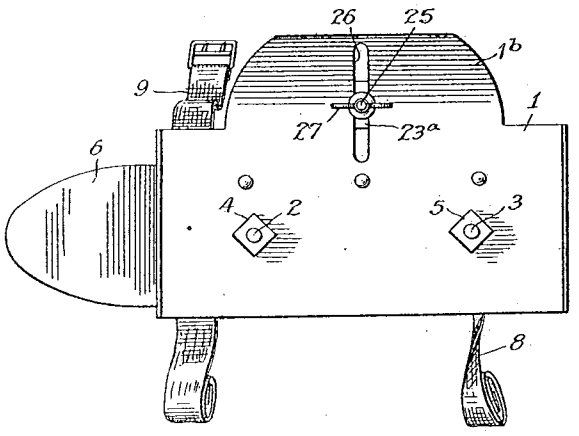


Fig. 2.



Witnesses
Martin H. Olsen.
Fidelis Maichen

Inventor
Grace Gassette
By Reeter, Hibben, Davis & Macauley
Her Attys.

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2 SHEETS—SHEET 2.

Fig. 4.

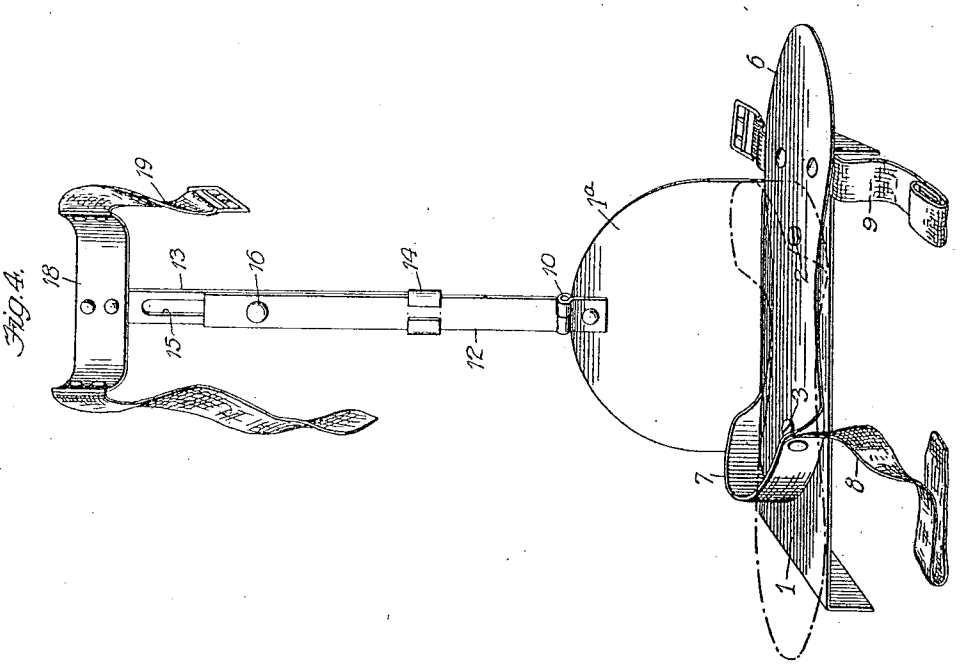
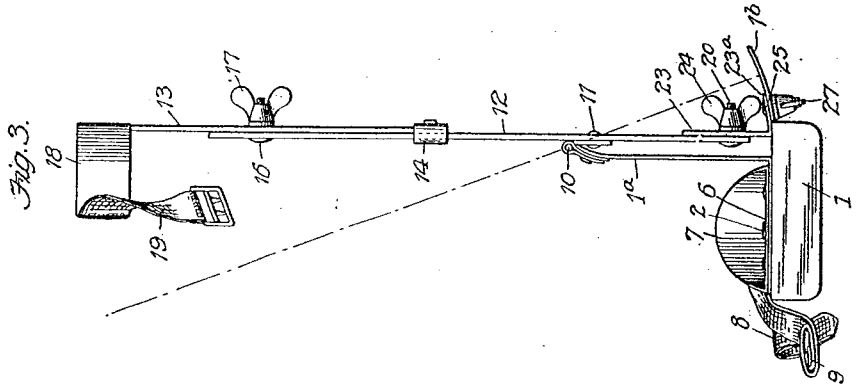


Fig. 3.



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UNITED STATES PATENT OFFICE.

GRACE GASSETTE, OF CHICAGO, ILLINOIS.

SURGICAL OR ORTHOPEDIC APPLIANCE FOR THE TREATMENT OF THE ANKLE.

1,383,928. Specification of Letters Patent. Patented July 5, 1921.

Application filed March 3, 1919. Serial No. 280,221.

To all whom it may concern:

Be it known that I, GRACE GASSETTE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Surgical or Orthopedic Appliances for the Treatment of the Ankle, of which the following is a specification.

My invention relates to an articulated device for holding and supporting the ankle in any desired position as a means of curative treatment in cases of fracture or ankylosis of the ankle, or for the remedy of muscular deviations and abnormality in the position of the ankle. The object of my invention is the production of a useful and efficient mechanical device, well designed and adapted for the ends in view and by means of which the foot may be immobilized and supported in the desired position for any length of time, and through which, if desired, a progressive treatment may be carried out by making changes of adjustment from time to time as the treatment progresses. With this general purpose in view I have devised and invented the novel appliance for treatment of the ankle hereinafter described, and my invention consists in the novel combination and arrangement of cooperating parts of such structure, as more particularly pointed out in the appended claims, it being understood, however, that the particular structure hereinafter described and shown in the accompanying drawings is susceptible of various variations and modifications without departing from the substance of my invention or the scope of the claims.

In the drawings Figure 1 is an elevation of the outer side of my novel appliance; Fig. 2 is a bottom plan view of the same; Fig. 3 is a front elevation of the appliance; and Fig. 4 is a perspective showing the inner side of the same.

The same reference characters indicate the same parts in all the figures of the drawing.

My supporting appliance may be stated generally to consist of a rigid sole plate upon which the foot to be treated is firmly secured, the sole being rigidly connected to a vertical side piece to which, at the height of the ankle, is hinged a splint or leg support extending upwardly to just below the knee. This support has a pivotal connection with the hinge leaf, whereby the leg support (to which the leg is secured) may be angularly adjusted with respect to the sole and side plate, at about the level of the ankle joint, both sidewise and in a forward and rearward direction.

Describing now in detail the construction of the particular embodiment of my invention shown in the drawings, upon the metallic base 1 of the appliance and secured to it by means of a pair of screw bolts 2 and 3 cooperating with nuts 4 and 5 there is arranged a metallic sole piece or plate 6 provided with a curved vertical heel abutment 7 at the rear. Straps 8 and 9, riveted to the sole piece are provided for holding the foot of the patient firmly in place upon the sole plate.

The base 1 has secured to it a vertical side piece in the form of a plate 1^a which extends upwardly to the level of the ankle joint of a foot resting upon the sole plate. At this point a hinge 10 is riveted to the plate, and upon a headed stud 11 fixed to the outer movable leaf of this hinge is mounted an extensible splint or leg support consisting of the lower pivoted member 12 and an upper slidable member 13, which latter is secured to the part 12 through a clasp 14 fixed to its lower end and embracing the part 12 and a screw bolt 16 carried by the member 13 and passing through a longitudinal guide slot in the part 12 a winged clamping nut 17 being provided for rigidly securing the lower and upper members together in any desired position of adjustment. The member 13 of this leg support carries at its top a transverse arcuate socket piece 18 equipped with a strap and buckle 19 for securing it to the leg.

The base 1 of the appliance is formed with a side extension 1^b which is curved concentrically with the axis of the hinge 10. Adjustably mounted on this extension is an upwardly extending adjusting plate 23 formed with an approximately horizontal base 23^a slightly curved to fit such extension, this base being equipped with a headed screw-bolt 25 passing through a slot 26 cut transversely in the extension 1^a, and a winged nut 27 being provided to clamp the base of the adjusting plate rigidly to the extension.

The adjusting plate 23 in any position of adjustment lies in a plane radial of the axis of the hinge 10, and when placed near its innermost position is parallel with the side plate 1^a. A curved slot 21 is cut in this adjusting plate 23, concentric with the axis of the pivot 11, which is carried by the mov-

able hinge leaf and upon which the leg support member swings, and the lower end of such leg support member is equipped with a bolt 20 arranged to engage such slot, a winged nut 24 being provided for clamping the lower end of the leg support rigidly to the adjusting plate at any position of the bolt in the slot.

By means of this organization and arrangement of coöperating parts of the appliance, the leg support 12 may be turned about the pivot 11 and rigidly secured in position by adjustment of the clamping bolt and nut 24 in the slot 21, and such support, together with the adjusting plate 23, may be swung laterally upon the hinge joint 10 and secured at any desired point by adjustment of the clamping bolt and nut 27 in the slot 26. The hinge 10 and the headed stud or pivot 11 thus provide a universal articulation between the leg support 12 and the base member 1ª at the height of the ankle joint, and by a combination of these two adjusting movements the leg support may be placed in any desired or needful position with respect to the base 1 or the sole plate 6, and a foot attached to the sole plate will therefore be caused to assume a greater or less inclination, to the front or rear, or laterally, with respect to the leg secured in the leg support 12. The appliance may be placed interchangeably upon the inner or outer side of the leg, and the same appliance may be applied to the right or to the left leg, it being necessary in any case only to place the sole plate 6 in proper position with relation to the base 1. The sole plate may be secured by the screw bolts 2 and 3 either in the position shown in full lines, or in the reversed position shown in dotted lines in Fig. 4, and may therefore be changed as necessary.

It is to be understood that in practice the various parts of the appliance which come into contact with the foot or leg are covered or padded with felt, cotton, leather, or similar materials, as may be necessary to hold the members comfortably and in a proper position.

I claim:

1. In an appliance of the character described, a sole plate arranged to be secured to the foot of a patient, a side piece rigidly connected with said sole plate, a leg support universally articulated with said side piece adjacent the ankle joint and arranged to be secured to the patient's leg above said joint, and means for rigidly securing said leg support in any position of adjustment.

2. In an appliance of the character described, a base, a reversible sole plate removably secured to said base, a side piece rigidly fixed to said base, a leg support universally articulated with said side piece adjacent the ankle joint, and means for rigidly securing said leg support in any position of adjustment.

3. In an appliance of the character described, a sole plate, a side piece rigidly connected with said sole plate, a hinge member having hinged connection with the upper portion of said side piece adjacent the ankle joint, a leg support pivotally connected with said hinge member, and means for rigidly securing said leg support in any position of adjustment.

4. In an appliance of the character described, a sole plate, a side piece rigidly connected therewith, a hinge member having hinged connection with the upper portion of said side piece adjacent the ankle joint, a leg support pivotally connected at an intermediate point with said hinge member, a side extension rigidly connected with said sole plate, an adjusting plate laterally adjustable on said extension, and means for clamping the lower end of said leg support to said adjusting plate at any desired position of angular adjustment of such support about its pivotal connection with the hinge member.

5. In an appliance of the character described, a sole plate, a side piece rigidly connected therewith, a hinge member having hinged connection with the upper portion of said side piece adjacent the ankle joint, a leg support pivotally connected at an intermediate point with said hinge member, a side extension rigidly connected with said sole plate and curved concentrically of the axis of said hinge, a laterally adjustable adjusting plate arranged to be secured to said extension, a clamping member mounted on the lower end of said leg support and arranged to clamp said adjusting plate and leg support together at any point in a curved path concentric of the pivotal connection of such support and said hinge member.

6. An appliance according to claim 5 in which the curved extension is formed with a lateral slot and the adjusting plate is formed with a curved base, and a clamping bolt engaging said base and said slot in the extension is provided for securing said plate to said extension.

7. An appliance according to claim 5 in which the adjusting plate is formed with a curved slot concentric of said pivot and the lower end of the leg support is equipped with a screw bolt engaging said slot and coöperating with a clamping nut.

8. An appliance according to claim 1 in which said leg support comprises members extensibly secured together and the upper member is equipped with a transverse arcuate socket piece.

9. An appliance according to claim 1 in which the side piece consists of a vertical plate extending longitudinally of the sole plate and adjacent thereto.

10. An appliance according to claim 5 and including a base integral with the side extension, and in which the side piece is secured to said base and the sole plate is removably mounted on such base.

11. An appliance of the character described and comprising a base, a sole plate secured thereto, a vertical side plate also secured to said base, a hinge member having hinged connection with the upper portion of said side plate adjacent the ankle joint, a leg support pivotally connected at the intermediate point with said hinge member, a side extension projecting laterally from said base and curved concentrically of the axis of the hinge, an adjustable plate arranged to be adjusted laterally on said extension and secured thereto, and means for securing the lower end of said leg support to said adjusting plate at any portion of angular adjustment of such support about its pivotal connections with the hinge member.

12. An appliance according to claim 11 in which the adjusting plate is formed with a curved base and is adjustably secured to the extension of the base by means of a clamping nut and a bolt passing through a slot in such extension and in which said adjusting plate is formed with an upright wall formed with a curved slot and said leg support is secured to such plate by means of a clamping nut and a bolt passing through such slot.

GRACE GASSETTE.