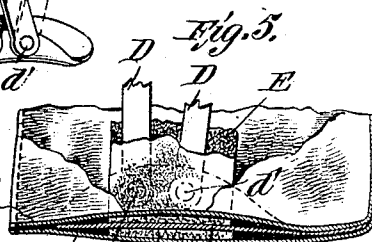
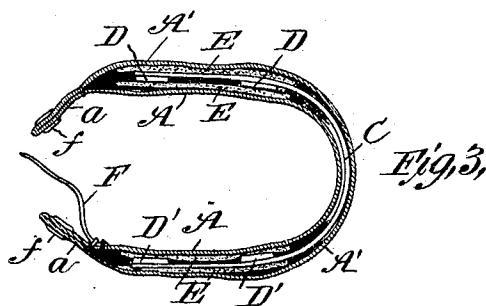
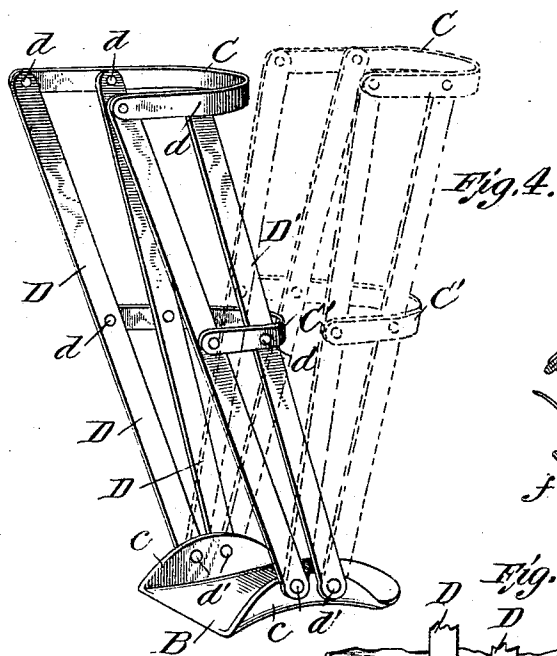
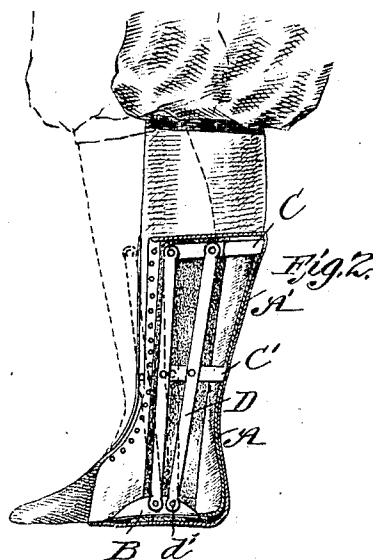
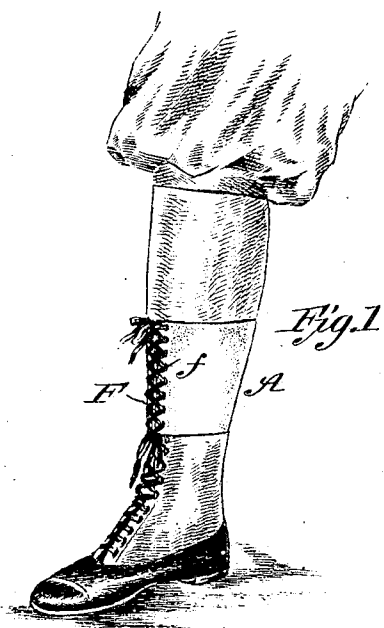


No. 830,894.

PATENTED SEPT. 11, 1906.

A. R. GARROD.
ANKLE BRACE AND SUPPORTER.
APPLICATION FILED MAR. 1, 1906.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ALBERT ROBERT GARROD, OF NEW YORK, N. Y.

ANKLE BRACE AND SUPPORTER.

No. 830,894.

Specification of Letters Patent.

Patented Sept. 11, 1906.

Application filed March 1, 1905. Serial No. 247,987.

To all whom it may concern:

Be it known that I, ALBERT ROBERT GARROD, a citizen of the United States, residing in the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Ankle Braces and Supporters, of which the following is a specification.

My invention relates to an ankle and leg supporter, the same being intended for use more particularly by children with weak legs and ankles, although it can be modified in construction so as to be worn by adults for bracing a weak ankle.

One object of the invention is the provision of a simple supporter which can be worn by a child with comfort inside of a stocking and a shoe for the purpose of preventing the leg from becoming "bowed," as well as for supporting a weakened ankle.

A further purpose of the invention is to provide a supporter of the class mentioned with means adapted to fit below the arch or instep of the foot, such means forming an integral part of the device.

A further object is to provide a supporter which may be drawn snugly around the leg and ankle of the wearer and in which the stiffening members of the supporter are kept from chafing and rubbing the flesh and skin of the leg, ankle, and foot.

With these ends in view I provide a supporter comprising a yieldable stiffening-frame, a foot member with which the frame has yieldable or pivotal connection in order that the frame may change its position and conform to the motion of the wearer, a casing for inclosing the frame and the foot member, said casing being open at the front and the top to enable it to be applied and removed easily to or from the limb, and means for drawing the casing and frame snugly around the limb and ankle.

The invention also consists in the novel construction of a supporter, as will be pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, wherein like characters of reference are used to indicate corresponding parts in all the figures.

Figure 1 is a perspective view representing a mode of using my improved brace or supporter. Fig. 2 is a vertical sectional elevation. Fig. 3 is a horizontal cross-sectional

view, on a somewhat enlarged scale, through the supporter or brace. Fig. 4 is an enlarged perspective view of the stiffening-frame and foot member, the casing of the supporter being omitted and the dotted line showing one position assumed by the frame in accommodating itself to the motion of the wearer. Fig. 5 is a vertical detail sectional view through the lower part of the supporter.

The supporter or brace of my invention contemplates the employment of a casing or jacket which is open on the front side and at the top end, the other end and the remaining sides of the supporter being closed. The casing is shown more particularly by Figs. 2 and 3, and it consists of the members $A A'$, the edges a of said members overlapping each other at the front open side of the supporter and united in any suitable way—as, for example, by sewing the parts one to the other. The lower end of the casing is closed by the end pieces $b b'$, which are in overlapping relation and are joined with the sections $A A'$ of the casing.

Within the closed end $b b'$ of the casing is arranged a foot member B , the same being made, preferably, from a single piece of sheet metal, which is stamped to the appropriate form and size. This foot member is preferably arched, and at its sides said member is bent or turned up to produce the flanges c .

Within the upright part of the casing is arranged a flexible frame which is adapted to materially stiffen the casing and give it sufficient rigidity to brace and support the leg of the user. This stiffening-frame consists of the transverse members $C C'$ and the longitudinal members $D D'$, the several parts being suitably spaced and connected one with the other, so as to permit the parts of the frame to have a limited movement relative to each other. I preferably make the members $C C'$ $D D'$ of thin pieces of flexible metal, although I do not desire to strictly confine myself to this special construction. The transverse members $C C'$ are bowed and arranged in substantially horizontal positions one above the other. The members $D D'$ are straight pieces which cross the members $C C'$, said longitudinal members being connected pivotally with the transverse members by rivets or other suitable devices d . The longitudinal members $D D'$ of the frame overlap the flanges c of the foot member, and said longitudinal frame members are connected pivot-

ally with the foot member by the rivets d' or their equivalents, all as shown more clearly by Fig. 4.

The stiffening-frame is arranged within the jacket or casing for the transverse members $C C'$ to extend part way around said casing, the open portions of the bowed members $C C'$ facing toward the open front side of the brace or supporter. The foot plate or member B is within the space inclosed by the end portion $b b'$ of said casing, whereas the longitudinal members $D D'$ extend through the casing and lie on the respective sides thereof.

It will be seen that the metallic reinforcing parts of the stiffening-frame are housed or contained within the casing so as to be concealed from view and to prevent the members of the frame from having contact or engagement with the flesh of the wearer. To prevent the stiffening devices from wearing away the portions of the casing with which they engage and to cushion the pressure of the frame upon the limb and ankle of the wearer, I prefer to employ pads or cushions $E E'$, which may be made of felt or any other soft material suitable for the purpose. The pads E are at the sides of the casing within the latter and next to the longitudinal members of the stiffening-frame, while the pads E' are disposed above and below the curved foot-plate B . (See Figs. 3 and 5.)

The construction of a brace or supporter with an open front side and open upper end allows the article to be readily slipped over the foot, ankle, and limb of the wearer or to be removed at will therefrom; but to make the device efficient in service I provide it with means whereby the casing and the stiffening-frame may be drawn or bound snugly around the ankle and the limb. Any suitable devices may be used for this purpose; but, as shown, the free edges of the casing are provided with rows of eyelets f at the edges along the open front side, said eyelets accommodating a suitable lacing F , as shown. After adjusting the supporter around the foot, ankle, and leg of the wearer the lacing F may be drawn upon so as to make the casing and frame hug closely to the ankle and the leg, the degree of pressure exerted by the supporter on the ankle and leg being regulated by the tautness of the lacing.

It will be observed that in the practical use of my device the stiffening-frame and the casing are adapted to bend or yield, and thus accommodate themselves to the movement of the walker. The stiffening-frame being pivoted to the foot-plate and the casing being made of pliable material, such as leather, the frame is free to assume the full and dotted line positions indicated by Figs. 2 and 4 when the wearer is walking. The foot-plate being arched or curved, it is adapted to fit snugly to the under side of the foot below the instep, so as to give the proper arch thereto.

My brace or supporter is intended to be worn next to the foot, leg, and ankle of the wearer, the supporter being made of such length as to extend from the ankle well toward the knee in order to brace the leg. The supporter is worn beneath the stocking and is intended to be thrust with the foot into the shoe.

The device being exceedingly compact, it can be worn with ease and be practically concealed from view by the stocking and shoe.

By extending the supporter well above the ankle it affords a brace for the leg below the knee, which is particularly desirable in the case of children, because it so braces the leg as to prevent it from becoming bowed.

My new supporter is not only simple in construction; but it is cheap of manufacture and efficient and reliable in service.

Changes in the form, size, proportion, and minor details in construction may be made without departing from the spirit of the invention or sacrificing any of the advantages thereof, and I therefore reserve the right to make such alterations and modifications as fairly fall within the scope of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a device adapted to be worn inside of a shoe and beneath the wearer's knee, a yieldable frame composed of upright members and a plurality of bowed transverse members, said bowed members being connected pivotally to said upright members, a foot-plate to which said upright members of the frame are pivoted, and means independent of the bowed members for drawing the frame around the limb of the wearer.

2. In a device of the class described, a casing open at one side and at one end, a foot-plate within the closed end of said casing, a stiffening-frame also within the casing and connected yieldably to the foot-plate, and means for drawing the casing and the frame around the foot and ankle of the wearer.

3. A supporter or brace comprising a casing open at one side and at one end, the other end of said casing being closed, a foot-plate housed in said closed end of the casing, a skeleton frame within an upright part of said casing, pads between the casing, the foot-plate and the frame, and means for drawing the edges of the casing toward each other.

4. In a support of the class described, a plate adapted as an instep-support and provided with upwardly-extending side plates or members, a plurality of strips pivotally connected with said side members and a plurality of U-shaped members secured to said strips whereby a skeleton framework is produced having an unobstructed front opening.

5. In a support of the class described, a foot-plate, a series of upright strips pivotally

attached thereto, and a U-shaped strip connecting said members above the plate, whereby a skeleton frame is produced having an unobstructed opening in its front, and means
5 for securing said frame to the limb of the user.

6. In a support of the class described for wear inside of a shoe, a plate adapted to rest under the instep and heel, a series of yield-
10 able upright strips pivotally attached to said plate, and a U-shaped strip connecting said members above the plate, whereby a skeleton

frame is produced having an unobstructed opening in its front, and a flexible casing enclosing said frame and adapted to be secured 15 around the leg of the wearer.

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

ALBERT ROBERT GARROD.

Witnesses:

CORNELIUS J. HEALY,
THOMAS JOSEPH FITZHARRIS.