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Dec. 14, 1948. G. A. BURROWS 2,456,046

LEG BRACE

Filed March 24, 1947

Fig. 1.

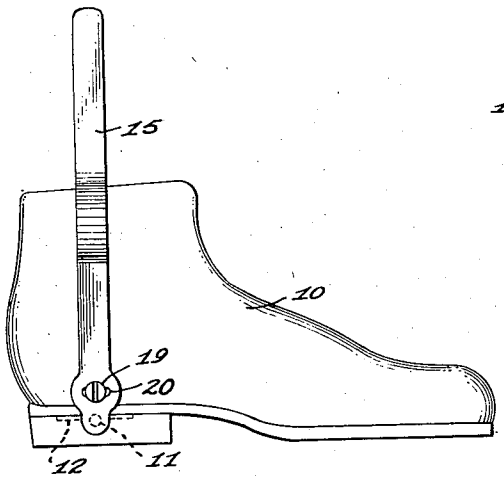


Fig. 2

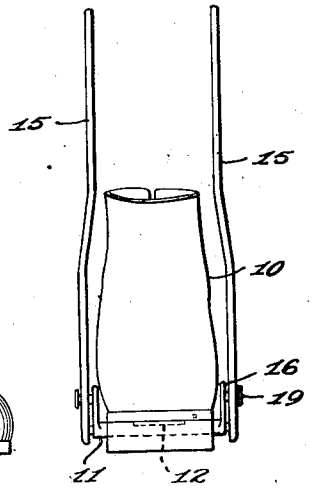


Fig 4.

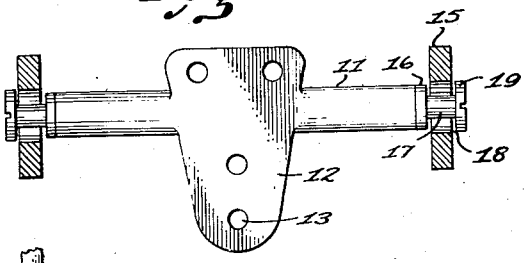


Fig. 5

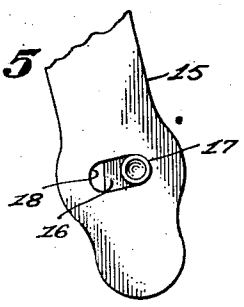


Fig. 3.

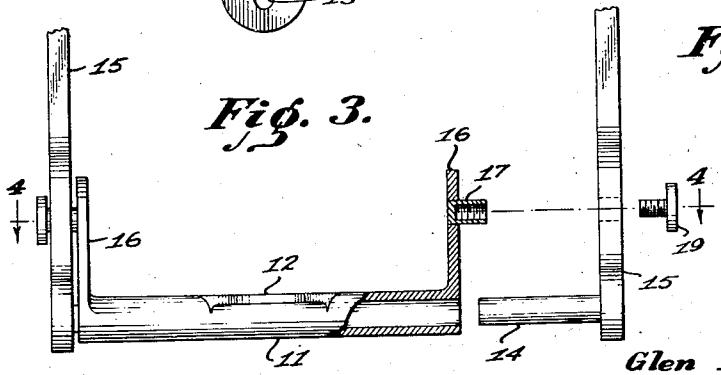
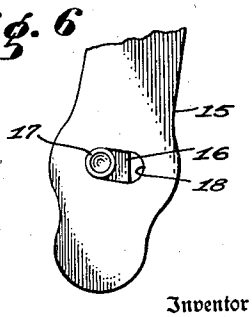


Fig. 6



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LEG BRACE

Glen A. Burrows, Charlotte, N. C.

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4 Claims. (Cl. 128—80)

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This invention relates to leg braces, and more specifically to an improved type of leg brace adapted for supporting crippled foot members in cases of paralysis and the like.

In such cases, control of the paralyzed foot member is impaired so that the foot cannot be manipulated properly in walking. And while it is usually desirable to allow some ankle movement during walking for exercise of the affected foot member, unless some means is provided for controlling this ankle movement, the toe of the foot member will drag as it is brought forward for each succeeding stride, and walking will consequently be difficult.

The leg brace of the present invention is adapted to avoid this difficulty so that ankle movement may be allowed while at the same time preventing toe drag. An important feature of the invention is an improved type of stirrup barrel adapted for attachment to the heel of a shoe or the like, and arranged so that the side arms of a leg brace may be easily assembled and detached from the shoe. This arrangement makes it possible to equip several pairs of shoes with the improved form of stirrup barrel of this invention, and assemble the side bars of the leg brace alternatively with a given pair of shoes as desired.

The present invention is described more in detail below in connection with the accompanying drawing, in which:

Fig. 1 is a side elevation showing the side arms of a leg brace assembled with a shoe equipped with a stirrup barrel constructed according to the present invention;

Fig. 2 is a corresponding end view;

Fig. 3 is a detail, partly in section and partly exploded, illustrating the improved stirrup barrel of the present invention and the manner in which the side arms of a leg brace are associated with the stirrup barrel;

Fig. 4 is a similar detail oriented on the line 4—4 of Fig. 3; and

Figs. 5 and 6 are fragmentary details illustrating the pivoting movement of the side arms with respect to the stirrup barrel.

With reference first to Figs. 1 and 2 of the drawing, the leg brace of the present invention is shown associated with a usual type of shoe 10. As shown, the leg brace comprises a stirrup barrel 11, which is attached to the heel of shoe 10. The stirrup barrel 11 is of generally tubular form, and is adapted by means of a plate element 12 having suitable fastener receiving apertures 13

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(see Fig. 4) for attachment on the shoe 10 as shown.

The tubular form of stirrup barrel 11 provides an internal bore for accommodating the pivot pins 14 of the side bars 15. These side bars 15 may be of any suitable form and length as is prescribed or appropriate in a given instance.

Stirrup barrel 11 is further formed with extending arm portions 16 carrying stop elements 17 at their extending ends. The stop elements 17 may take the form of integral lugs, or they may consist of pins, such as are indicated in the drawing (see Fig. 3), fitted to the extending arm portions 16 and secured in place with solder or by welding.

As the stop elements 17 are disposed at the extending ends of the arm portions 16, they are spaced from the point of pivoted assembly of side bars 15 with the stirrup barrel 11, and they are accordingly adapted for limiting the pivoted movement of the side bars 15 with respect to stirrup barrel 11. The side bars 15 are slotted as at 18 to receive the stop elements 17 so that their pivoted movement is limited in this manner, the extent of the movement being determined by the size and position of the slots 18 provided. Preferably, the stop elements 17 are tapped to receive retaining screws 19 so that the side bars 15 may be assembled as a unit with the stirrup barrel 11, although this feature is not necessary and may be eliminated if desired.

The action of the leg brace of the present invention may be illustrated by reference to Figs. 5 and 6 of the drawing. In Fig. 5, the relative positions assumed by the side arms 15 and stop elements 17 during each forward stride are illustrated. As each forward stride is made, the toe of shoe 10 tends to drop, as mentioned above, and would drag were it not prevented by the limiting action of stop element 17 in the slot 18 of side arms 15. This limiting action halts the toe drop and maintains the foot with an acceptable posture for completing the forward stride.

As the forward stride is completed, however, and the other foot is brought forward in turn, the stop element 17 shifts in the slot 18 as illustrated in Fig. 6, and allows side arm 15 to pivot on stirrup barrel 11 so that ankle movement is obtained for exercise of the foot member to which the leg brace is attached.

I claim:

1. A leg brace comprising a stirrup barrel adapted for attachment to the heel of a shoe or the like, side arms pivotably associated with said stirrup barrel, and means for limiting the

pivoting movement of said arms with respect to said stirrup barrel comprising arm members disposed to extend upwardly from said stirrup barrel adjacent the upper of said shoe and carrying stop elements at their extending ends disposed for engaging said side arms in spaced relation to the point of pivoted association with said stirrup barrel and thereby limit pivoting movement of said side arms with respect to said stirrup barrel.

2. A leg brace comprising a stirrup barrel adapted for attachment to the heel of a shoe or the like, said stirrup barrel being formed with extending arm members carrying projecting lugs at their extending ends, and side arms pivotably associated with said stirrup barrel, said side arms being formed with slots diposed to receive the lugs on said extending arm members when said side arms are associated with said stirrup barrel, whereby said lugs engage said side arms in spaced relation to the point of pivoted association with said stirrup barrel and thereby limit pivoting movement of said side arms with respect to said stirrup barrel.

3. A leg brace as defined in claim 2 and further characterized in that a retaining screw is associated with the lugs on said extending arm members for assembling said side arms as a unit with said stirrup barrel.

4. A leg brace comprising a stirrup barrel adapted for attachment to the heel of a shoe or the like, said stirrup barrel having a tubular form and being formed with extending arm members carrying projecting lugs at their extending ends, and side arms fitted with laterally disposed pins adapted for insertion in the bore of said tubular stirrup barrel whereby said side arms may be pivotably associated with said stirrup barrel and thereby disposed for engagement with the lugs on said extending arm members in spaced relation to the point of pivoted association with said stirrup barrel so that pivoting movement of said side arms with respect to said stirrup barrel is limited.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,792,155	Fisher	Feb. 10, 1931