April 8, 1941. W. O. MINOR 2,237,945

OVERCORRECTIVE SHOE FOR TALIPES VARUS

Filed July 24, 1939

FIG. 1

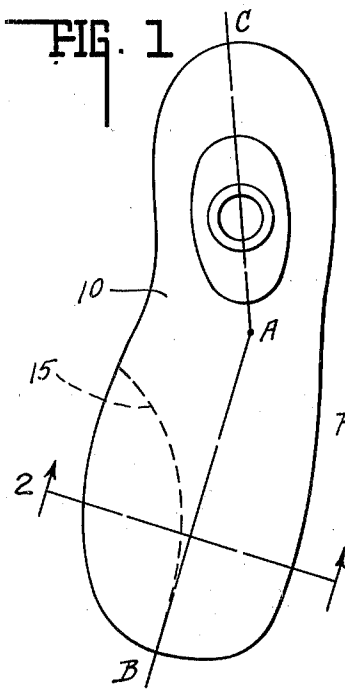


FIG. 3

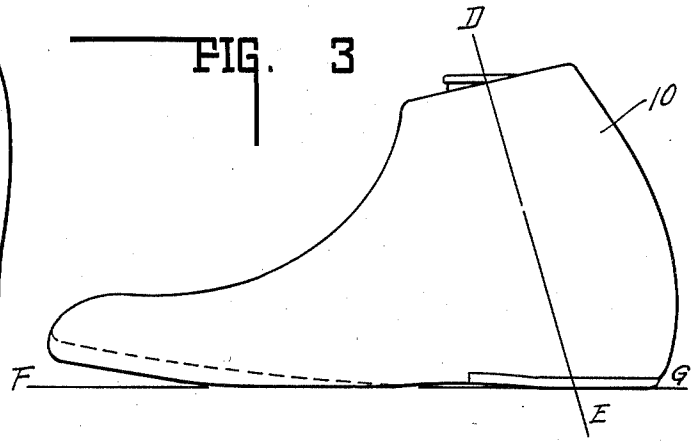


FIG. 4

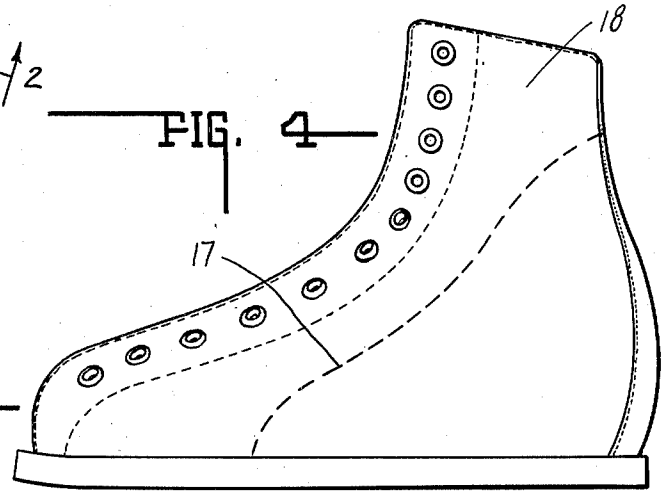


FIG. 2

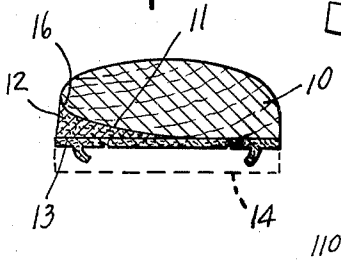
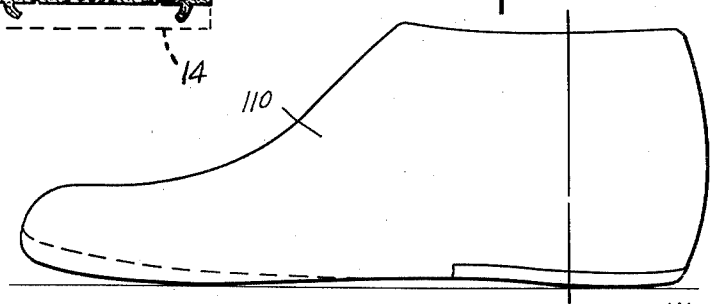


FIG. 5



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OVERCORRECTIVE SHOE FOR TALIPES VARUS

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Application July 24, 1939, Serial No. 286,061

2 Claims. (Cl. 36—8.5)

This invention relates to an overcorrective shoe for talipes varus, commonly known as club-foot.

In the treatment of club-feet, it is common practice to keep the deformed foot in a cast for a relatively long period of time during which the bones, muscles and ligaments are rigidly held in a corrective position. When the cast has been removed, there is a tendency for the foot to return to the original deformed condition unless corrective shoes are applied. This tendency is so marked that a normally shaped shoe fails to hold the foot in the normal position and for that reason I have found it advantageous to provide shoes which overcorrect the deformity. The degree of overcorrection necessary depends upon the original degree of deformity of the foot, the nature of the deformity and the extent of the correction which has been secured by treatment in the cast.

The present invention has for its principal object the provision of a shoe which is suitable for cases in which the original deformity is largely in the forepart of the foot and in which a relatively good correction has been obtained in the cast but a strong tendency for the foot to return to its abnormal position still persists. Somewhat similar shoes for cases in which the deformity is largely in the rear portion of the foot are shown and claimed in my co-pending application Serial No. 286,745, filed July 27, 1939.

The foregoing object and others are attained by the particular constructional features and shape of the shoes disclosed in the following specification and accompanying drawing. Since the form of a shoe follows closely the form of the last on which it is made, the shape of the shoe is best described with reference to the last. Several of the figures therefore show the lasts rather than the shoes.

Fig. 1 is a plan view of a preferred form of last on which a shoe may be built in accordance with the invention. Fig. 2 is a vertical sectional view on the line 2—2 of Fig. 1 showing the last with the insole of the shoe fitted thereto. Fig. 3 is a side view thereof. Fig. 4 is a side view of a shoe constructed on the last of Fig. 3. Fig. 5 is a side view of a modified form of last.

The deformation known as talipes varus consists in the inward turning of the forepart of the foot and an outward rolling of the ankle such that the outer toes and outer edge of the foot are lowermost. To provide a correction for this condition, the last 10 shown in Fig. 1, and consequently the shoe formed on said last, is formed with the axis A—B of the forepart of the foot inclined outwardly with respect to the axis A—C of the heel portion. This outward inclination of the axis of the forepart is technically known as "abduction."

To provide an overcorrection, the outer forepart of the last is raised as shown at 11 in Fig. 2, the last retaining its full cross sectional area. A wedge piece 12 is inserted between the last and the insole 13 of the shoe. The corner 16 of the last is rounded and the wedge 12 is made to conform closely to the rounded shape. The horizontal extent of the wedge 12 in its preferred form is indicated by broken line 15 in Fig. 1. This construction provides that the internal foot bearing surface of the shoe, represented by the upper surface of the wedge 12 and the insole, is outwardly and upwardly inclined with respect to the undersurface of the outsole indicated by the broken line 14 of Fig. 2. The shoe therefore imparts to the forepart of the foot in walking an outward and upward twist which combines with the abduction of the forepart to provide a valuable overcorrection opposing the natural tendency to return to the talipes varus position. In this construction the pre-shaping of the forepart of the last with full cross sectional area, the provision of the rounded corner 16, and the forming of the wedge piece 12 to fit said corner prevents undue pressure of the foot against the upper at this point and consequently prevents deformation of the shoe and formation of callouses on the foot.

In Fig. 3 is illustrated the side view of the last 10 shown in Figs. 1 and 2. In this view it will be seen that the ankle axis D—E is given a forward inclination and makes an angle less than a right angle with the plane of the outsole indicated by the line F—G. The axis D—E represents roughly the line of the application of the body weight to the ankle bone and in a normal shoe is practically vertical. The forward inclination of the ankle axis places the foot in a position still further resisting the tendency to turn under and to return to its original condition. This feature combined with the features already described provides for cases in which an extreme over-correction is indicated. In certain cases, however, the overcorrection described in connection with Figs. 1 and 2 is all that is necessary or possible and a last as shown by last 110, Fig. 5, is used. In this last the ankle axis is in the normal position but the overcorrecting wedge and abduction are applied to the forepart as before described.

In constructing shoes with the forwardly in-

clined ankle axis, a relatively stiff counter 17 extending upwardly considerably beyond the height of the ankle bone of the foot is provided to retain the shoe in the shape of the last on which it is made. Without such a counter, the upper 18 does not supply sufficient stiffness to retain the forward inclination of the ankle axis.

The shape of the shoes constructed in accordance with the invention has been indicated by describing the lasts on which they are made. Constructional features departing from usual practice have been illustrated. In other respects normal shoemaking practice is followed and need not be described in detail. The details of the invention as herein disclosed may be varied without departing from the scope thereof as defined by the appended claims.

The invention claimed is:

1. An overcorrective shoe for talipes varus having the forward portion abducted, the inner foot receiving surface of the forepart of the sole being inclined upwardly and outwardly with respect to the undersurface of the shoe and that of the heel portion being substantially level, and the ankle axis having a substantial inclination forwardly with respect to the center line of the rear portion of the shoe.

2. An overcorrective shoe for talipes varus having the forward portion abducted, the inner foot receiving surface of the forepart of the sole being inclined upwardly and outwardly with respect to the undersurface of the shoe and that of the heel portion being substantially level, and the ankle axis having a substantial inclination forwardly with respect to the center line of the rear portion of the shoe, said shoe including a relatively stiff counter extending upwardly beyond the ankle bone of the foot and adapted to retain said axis in its inclined position.

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