

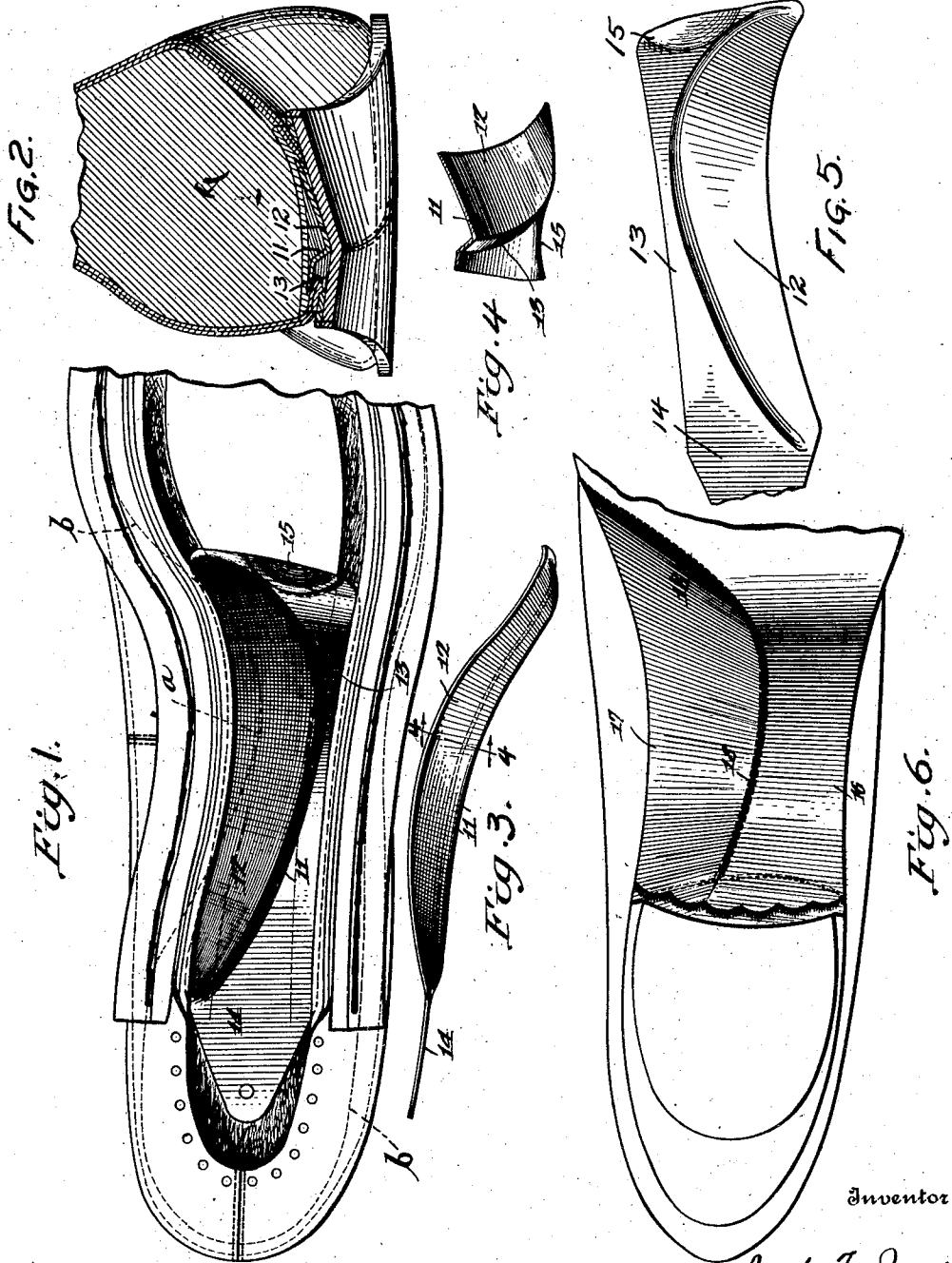
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SHANK STIFFENER FOR SHOES

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UNITED STATES PATENT OFFICE.

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SHANK STIFFENER FOR SHOES.

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This invention relates to a shank stiffener for boots and shoes for the production of a shoe having orthopedic qualities.

An object of the invention is to provide a shank stiffener of a sheet metal stamping, having oppositely disposed angular surfaces or portions merging in a curved line lengthwise of the stiffener with the terminals of the curve at the edge of one of the angular surfaces or portions, and being a portion within the curved line, to occupy a position at the inside of the shoe. The surface or portion within the curved line provides a support for the instep portion of the foot, and the other surface or portion presents an outline corresponding approximately to the outline of the portion of the arch of the foot when bearing thereon under weight.

In the accompanying drawings:—

Figure 1 is a bottom plan view of a lasted shoe upper and insole of welt type with the improved metallic shank stiffener inserted in place, the contour of the last being shown in dotted lines.

Figure 2 is a vertical transverse sectional view of the finished shoe taken through the instep with the last therein.

Figure 3 is a side view of the shank stiffener.

Figure 4 is a section of the stiffener taken on line 4—4 of Figure 3.

Figure 5 is a plan view of the stiffener taken from that side which faces against the under side of the insole.

Figure 6 is a plan view of the finished shoe bottom.

The shank stiffener is shaped and formed to provide an arch and instep support corresponding to the arch of the foot when sustaining weight. The foot when pressing or bearing upon a flat surface has a contour approximately corresponding to the outline shown in dotted lines in Figure 1 and designated *b*, which outline represents the tread portion of the foot. Such contour presents a sharply curved line at the inner side of the foot, as indicated at *a* in the figure. To give the shoe the proper form, and for satisfactorily placing the shank stiffener, it is preferable that the upper be lasted over a suitably shaped last to adapt the shank stiffener to support and sustain the non-weight bearing portion of the arch as well as the weight bearing portions thereof, and also be in conformity with the outline of such por-

tions. It is therefore preferable that the upper be lasted over a type of last as illustrated and described in Letters Patent No. 1,484,609 issued to me February 19, 1924.

Many attempts have been made to construct the inner surface of the shoe in conformity with the requirements of a normal foot to provide a stiffener as a truss member, which would support the foot at the arch at points where such support is most needed. The shank stiffener herein shown is formed of sheet steel and is pressed to a shape corresponding to the bottom portion of the last and is of V-shaped cross section, providing an arcuate ridge portion designed to extend longitudinally of an instep. This V-shaped ridge formation follows the outline of the inner outline of the tread portion of the arch which is comparatively narrow at the intermediate part and widens out at opposite ends into flat forward and rear portions. The opposite angularly related portions 12, 13, of the stiffener merge in such a manner as to form a curved ridge 11 at their junction. The rear portion or end 14 is extended well back into the heel-seat where it is securely anchored. The forward end of the stiffener extends across the rear ball portion of the fore part of the sole and is provided with a convex raised portion or boss 15 for sustaining the central ball portion of the insole.

The inner portion 12 of the stiffener is of arcuate configuration longitudinally to provide an upwardly inclined portion designed to maintain the shank of the shoe in conformity to the shape of the arch in the inner portion of the foot instep. The outer portion of the stiffener, when in the shoe, lies in a substantially flat condition throughout its length, while the inner portion has an upwardly curved convex portion angularly related to the outer portion, whereby the arcuate ridge heretofore mentioned is formed. Between the two portions 12 and 13 the material is bent to produce a longitudinal ridge. This ridge portion may be referred to as a part of the inner portion, so that the inner portion is angularly formed within itself to the ridge longitudinal of the stiffener but representative of a curved line extending from the inner edge of the forward end of the stiffener to the inner edge of the rear end of the stiffener to give the outer portion 13 an outline corresponding to the treading portion of the foot. This

brings the central or intermediate area of the outer portion 13 of exceeding narrow width, as illustrated in Figs. 1 and 5. This construction effectively supports the arch portion of the foot, when in use, along the lines of greatest pressure and effectively prevents sagging of the inside tread and non-tread portions of the shoe, giving the proper support to the foot arch when pressure is brought to bear thereon. The edge of the inner portion of the stiffener is inserted within the skive cut made in the insole, for forming the inseam lip, and the lip covers or overlaps the edge of the stiffener, as shown in Fig. 1.

The arch support as applied to a shoe, aside from its comfort and foot supporting features, gives an artistic appearance to the shoe. The shank viewed exteriorly presents two surfaces, an outer surface 16 and an inner surface 17. The outer surface is of arcuate configuration longitudinally from the heel to the rear fore part of the sole and gradually develops into the plane of the sole surface. This surface lies transversely, in

a horizontal plane, its transverse elements being substantially parallel to one another and to the approximately flat plane transverse elements of the fore part of the shoe sole. The inner shank surface is longitudinally arcuate and inclines in curved lines upwardly towards the shoe upper merging or meeting with the surface 17 to form a curved ridge line 18 extending from the heel portion to the edge of the inner rear fore part of the sole, the ridge thus formed having its concave side facing towards the inner side of the shoe.

Having described my invention, I claim:

In a shoe, a shank stiffener having angularly disposed inner and outer surfaces merging in a curved line lengthwise of the shank stiffener with the terminals of the curved line at the inner side of the shank member, the outer surface arcuate longitudinally and the inner surface inclined relative to the outer surface and arcuate longitudinally.

In witness whereof I hereunto subscribe my name.

JACOB F. JONAS.