

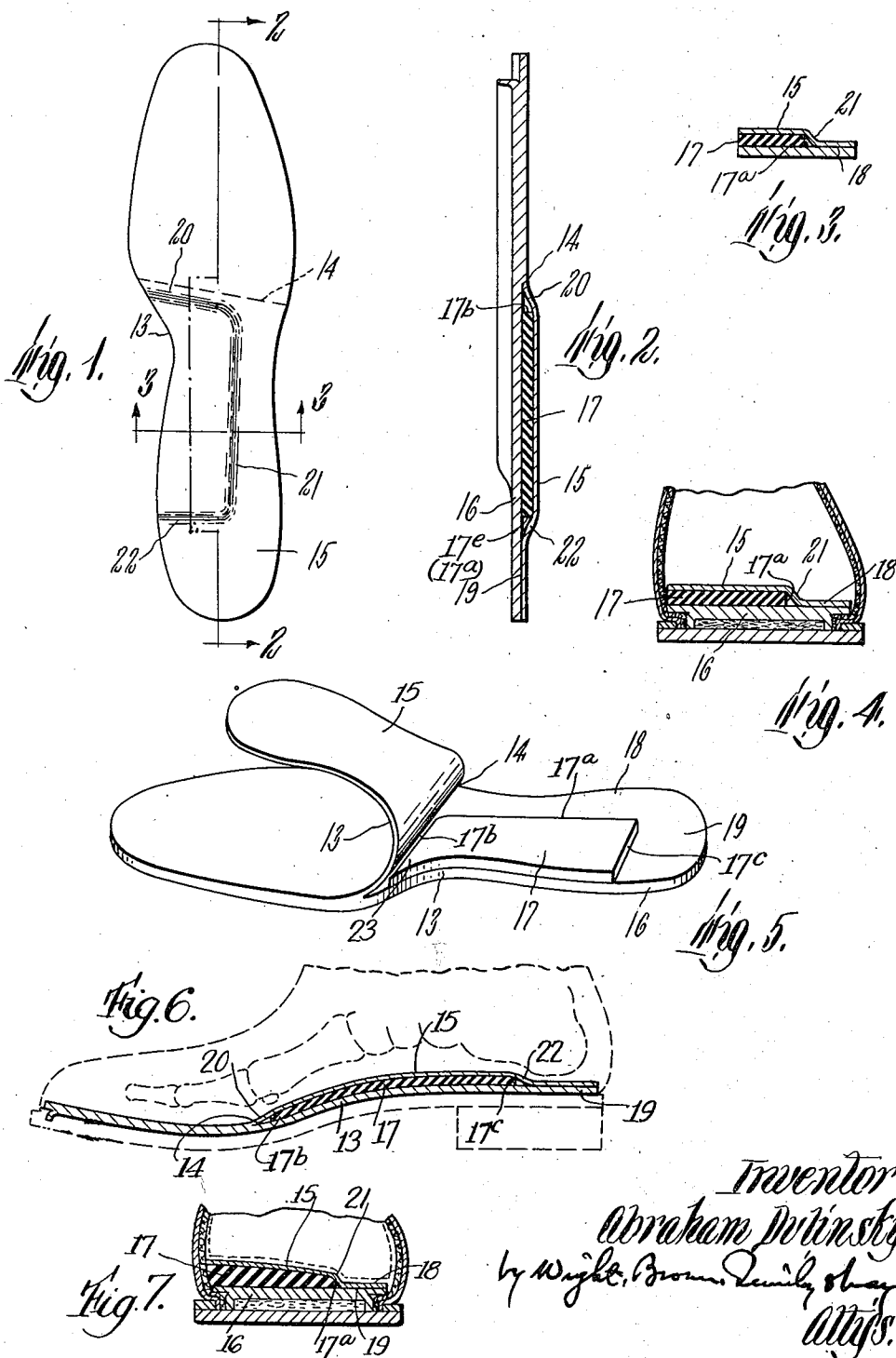
March 17, 1936.

A. DVLINSKY

2,034,463

CUSHIONED INNER SOLE

Filed Feb. 19, 1935



Inventor
 Abraham Dvlinsky
 by Wright, Brown, Smith & Co.
 Attys.

UNITED STATES PATENT OFFICE

2,034,463

CUSHIONED INNER SOLE

Abraham Dvinsky, Brockton, Mass.

Application February 19, 1935, Serial No. 7,184

1 Claim. (Cl. 36-71)

The object of this invention is to provide at a minimum cost, a shoe element including an inner sole and a cushion associated therewith adapted to yieldingly support the longitudinal arch of a human foot.

Of the accompanying drawing forming a part of this specification,—

Figure 1 is a top plan view of a shoe element embodying the invention looking toward the foot bearing side of the inner sole.

Figure 2 is a section on line 2—2 of Figure 1.

Figure 3 is a section on line 3—3 of Figure 1.

Figure 4 is a sectional view showing the element incorporated in a shoe.

Figure 5 is a perspective view of the sole and cushion before the completion of the element.

Figure 6 shows in full lines a sectional view of the inner sole and by dotted lines portions of a shoe.

Figure 7 is a view similar to Figure 4 showing the element as it appears when the shoe is in use, a portion of the foot being shown by dotted lines.

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

The drawing shows a leather inner sole which in this instance is adapted for use in a welt shoe, although it may be otherwise adapted.

The sole has a concave edge portion 13 at the inner edge of its shank and an incision, the closed end of which is shown at 14. Said incision extends from the heel end forward to the ball portion of the sole, and divides the heel and shank portions into a thin top layer 15 and a thicker bottom layer 16, each layer having a part of the concave edge portion 13, and each being integral with the fore part of the sole.

The sole is provided with an elastic oblong cushion 17 preferably of sponge rubber which is thicker than the top layer 15, and has a concave inner edge shaped to conform to the concave edge portions 13 of the top and bottom layers. The inner side of the cushion is cemented to the top surface of the bottom layer 16 with the concave edges of said layers and cushion coinciding flush with each other.

The cushion 17 has a longitudinal outer edge 17^a spaced from the outer edge of the inner sole, and a transversely extending forward end 17^b which is the widest portion of the cushion and intersects the concave edges of the layers 15 and 16 to provide the cushion with an acute angled lateral projection 23 located under the forward portion of the longitudinal arch.

The top layer 15 is cemented to the top surface

of the cushion and to portions 18 and 19 of the bottom layer not covered by the cushion.

The top layer has three narrow flexible portions 20, 21 and 22, projecting from the cushion and attached to portions of the bottom layer spaced from the cushion, the portion 20 extending along the forward end of the cushion, the portion 21 along the outer longitudinal edge, and the portion 22 along the rear end. Said flexible portions constitute flexible connections between the portion of the top layer which is cemented to the cushion, and the portions of said layer which are cemented to the bottom layer. The connections 20, 21 and 22 are backed by air spaces so that they form portions of the foot-supporting surface of the inner sole, and conform yieldingly to the sole of the foot, the cushion being conformable, by pressure of the foot upon it, to the transverse inclination of the foot sole at the shank portion of the foot, as shown by Figure 7.

It will now be seen that the cushion is firmly secured to the sole by the cement connection between its inner side and the bottom layer 16, the cement connection between its top side and the top layer 15, the cement connection between portions of the top layer and the exposed surfaces 18 and 19 of the bottom layer, and the inclined flexible portions 20, 21 and 22, of the top layer.

I claim:

A longitudinal arch supporting shoe element composed of an inner sole split from its heel end into its ball portion, the split portion including a relatively thick bottom layer and a thinner top layer, said layers having concave inner edge portions at the shank, and an elastic cushion interposed between, and cemented to, the inner portions of said layers and having a concave inner edge coinciding and flush with the concave edge portions of the layers, the cushion being oblong and narrower than the inner sole, and having a longitudinal outer edge spaced from the outer edge of the inner sole, and a transversely extending forward end which is the widest portion of the cushion, the top layer being cemented to the top surface of the cushion and to portions of the bottom layer not covered by the cushion, the top layer having three narrow flexible portions projecting from the cushion and attached to portions of the bottom layer spaced from the cushion, one of the portions extending along the forward end of the cushion, another portion along the outer longitudinal edge, and the third portion along the rear end of the cushion, said 55

flexible portions constituting flexible connections between the portion of the top layer which is cemented to the cushion and the portions of said layer which are cemented to the bottom layer, said connections being backed by air spaces, so that they form portions of the foot-supporting surface of the inner sole, conforming yieldingly to the foot sole, the cushion being conformable, by pressure of the foot upon it, to the transverse inclination of the foot sole at the shank portion of the foot.

ABRAHAM DVLINSKY.