

Oct. 8, 1929.

W. D. MOORE

1,731,106

ARCH SUPPORT

Filed Oct. 31, 1928

2 Sheets-Sheet 1

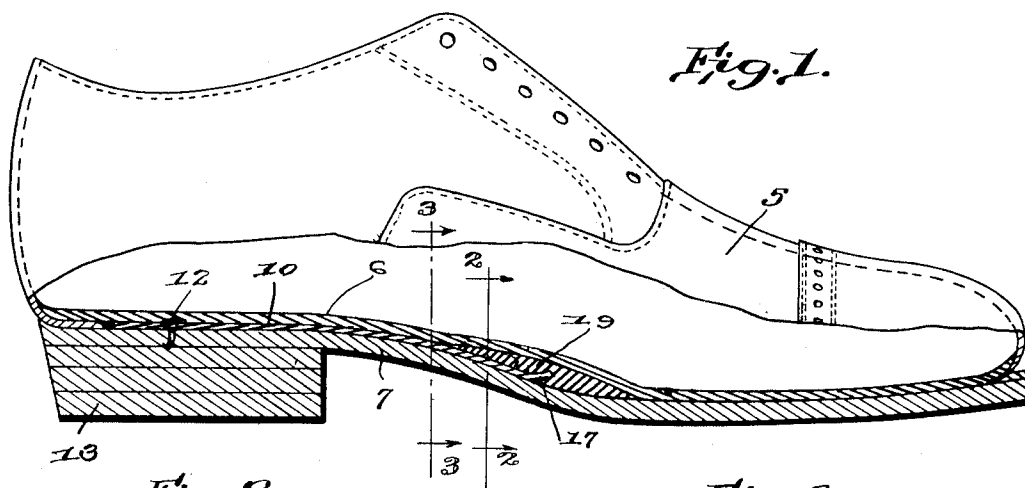


Fig. 2.

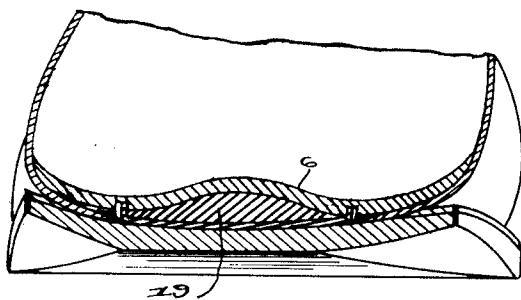


Fig. 3.

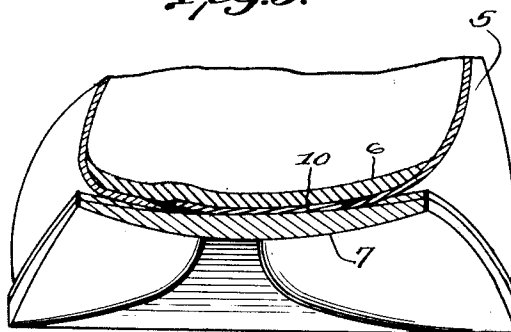
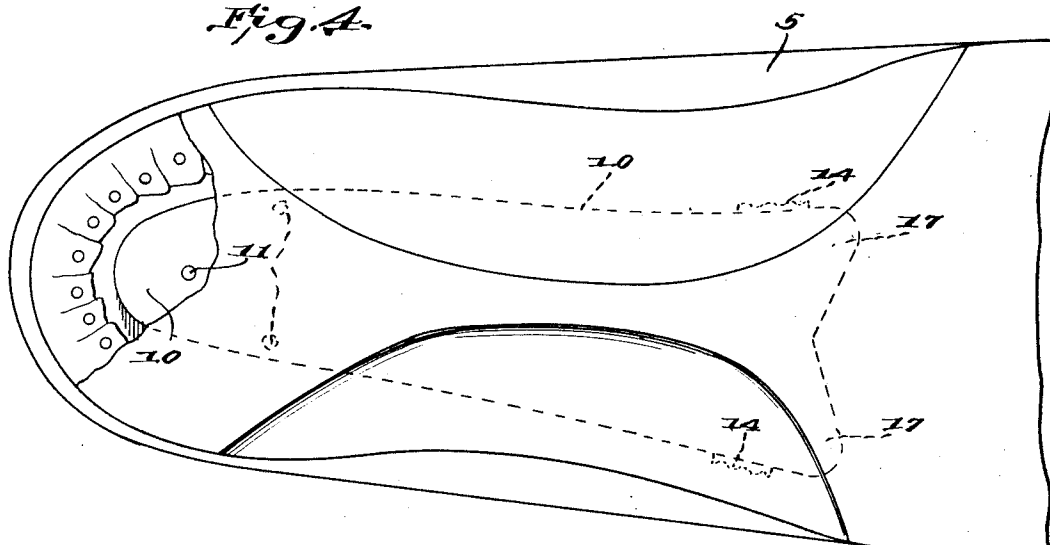


Fig. 4.



WITNESSES

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2 Sheets-Sheet 2

Fig. 5.

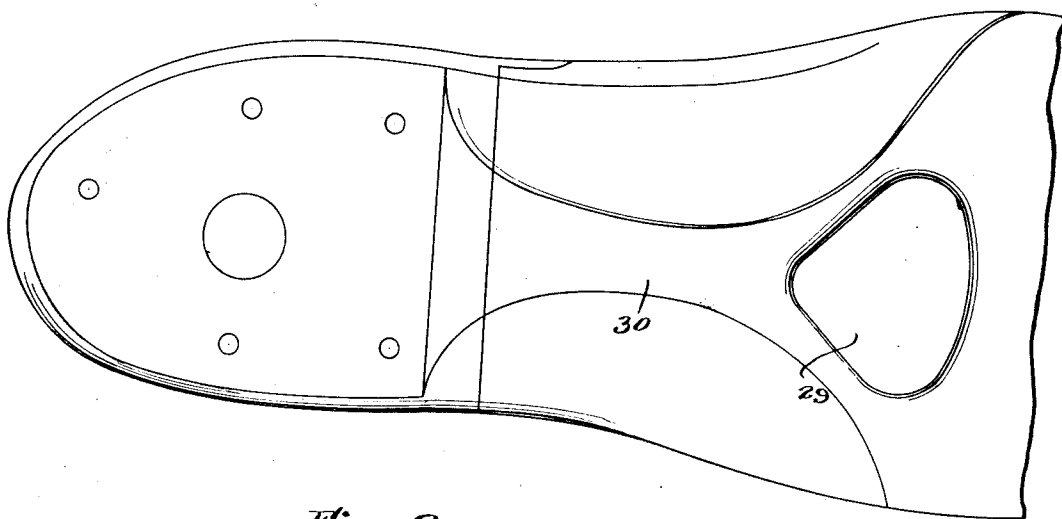


Fig. 6.

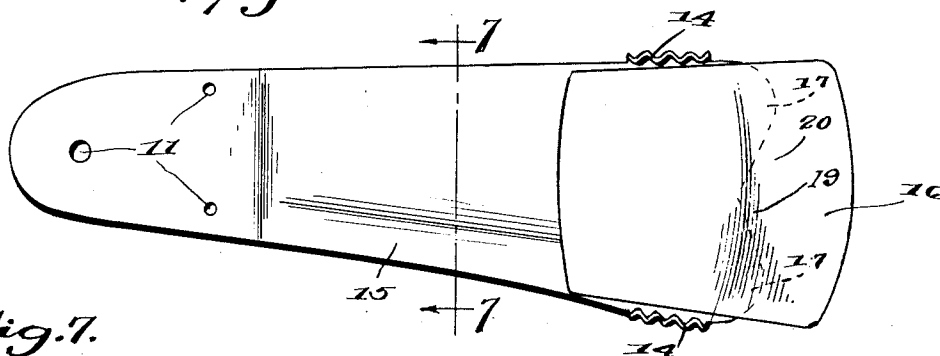


Fig. 7.

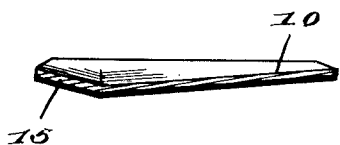


Fig. 8.

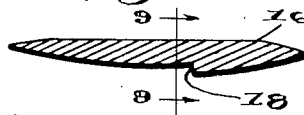


Fig. 9.

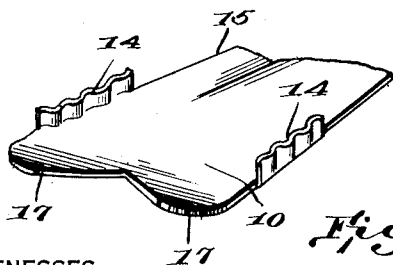


Fig. 10.

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ARCH SUPPORT

Application filed October 31, 1928. Serial No. 316,308.

My invention relates to shoes and more particularly to an improved arch construction.

An object of the invention resides in the provision of an arch support arranged between the inner sole and outer sole of a shoe so as to hold the inner sole in such form as to embrace and support the arch of the human foot.

Further the invention provides an improved arch supporting structure embodying a metallic plate to be interposed between the inner sole and outer sole of a shoe, together with a yieldable pad which is held in proper relation by the plate and thereby cause the inner sole to assume such configuration as to support the metatarsal bones.

With the preceding and other objects and advantages in mind, the invention consists in the novel combination of elements, construction and arrangement of parts to be hereinafter specifically referred to, claimed and illustrated in the accompanying drawings, wherein:—

Figure 1 is a view partly in elevation and partly in longitudinal section of a shoe constructed in accordance with my invention,

Figure 2 is a vertical transverse section taken on the line 2—2 of Fig. 1,

Figure 3 is a similar view on the line 3—3 of Fig. 1,

Figure 4 is a bottom plan view of the shoe prior to the application of the outer sole and having parts of the inner sole broken away,

Figure 5 is an enlarged fragmentary plan view of a last used in forming the shoe,

Figure 6 is a top plan view of the arch supporting plate and yieldable pad,

Figure 7 is a transverse section taken on the line 7—7 of Fig. 6,

Figure 8 is a longitudinal sectional view of the pad or cushion embodied in the invention,

Figure 9 is a sectional view of the same taken on line 9—9 of Fig. 8,

Figure 10 is a fragmentary perspective of the arch supporting plate embodied in the invention,

Referring to the invention in detail, a conventional shoe 5 having an inner sole 6 and an outer sole 7 is provided.

For the purpose of supporting the inner sole in a position to conform to the arch of the human foot, and to reinforce the shoe shank, a metallic plate 10 is interposed between the inner sole and outer sole and extends from a point adjacent the back of the shoe to a point slightly in advance of the shoe shank. This plate 10 is of less width than the inner sole and gradually increases in width toward its forward end. At its inner end the plate is provided with a plurality of openings 11 through which fastenings 12 passing through the heel 13 extend. At its forward end the plate is formed with upstanding corrugated flanges 14 along its edges which are embodied in the under face of the inner sole.

In order to support the inner sole at one side so as to support the arch of the human foot, the plate 10 is formed with an angularly disposed flange 15 at its inner edge. For the purpose of supporting the inner sole in position to support the metatarsal bones of the human foot, a substantially rectangular elastic cushion 16 is provided. The cushion 16 rests upon the forward end of the plate with its forward end projecting beyond the latter and accommodated between the inner sole and outer sole, as disclosed in Fig. 1. It will be observed that this pad is substantially elliptical in vertical cross section so as to build up the inner sole in the zone of the metatarsal bones.

In order to hold the cushion against working rearwardly out of place, the forward end of the plate is provided with a pair of forwardly extending wings 17 which engage the under face of the pad at a point slightly in advance of a transverse shoulder 18 formed on the under face of the pad intermediate its ends.

As particularly illustrated in Fig. 2, the cushion is formed with a convex protuberance 19 which causes the inner sole to arch as at 20, to support the metatarsal bones of the foot. For the purpose of forming the cushion with the protuberance 19, a concavity 28, which is substantially triangular in plan, is provided in the last 29 disclosed in Fig. 5. It will be apparent that in forming the shoe on the last the cushion will be forced into the concavity

28 thus causing the formation of the convex protuberance 20 on the cushion.

I claim:—

1. In a shoe structure, inner and outer soles, 5 a metallic plate arranged therebetween and having its rear end anchored to the end portion of the soles, upstanding corrugated elements formed on the longitudinal edges of the plate adjacent its forward end and embedded into the inner sole, and a compressible 10 pad resting on the plate with its forward end projecting beyond the same.

2. In a shoe structure, inner and outer soles, a metallic plate arranged therebetween and 15 having its rear end anchored to the end portion of the soles, upstanding corrugated elements formed on the longitudinal edges of the plate adjacent its forward end and embedded into the inner sole, and a compressible pad resting on the plate with its forward end projecting 20 beyond the same, the pad being substantially elliptical in cross section and having a convex protuberance upon its upper face and thereby forming a metatarsal bone support 25 upon the inner sole.

3. In an arch support a metallic plate to be arranged between the inner sole and outer sole of a shoe, upstanding corrugated elements 30 formed on the longitudinal edges of the plate adjacent the forward end and adapted to be embedded in the inner sole, and a pad resting on the plate at the forward end thereof.

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