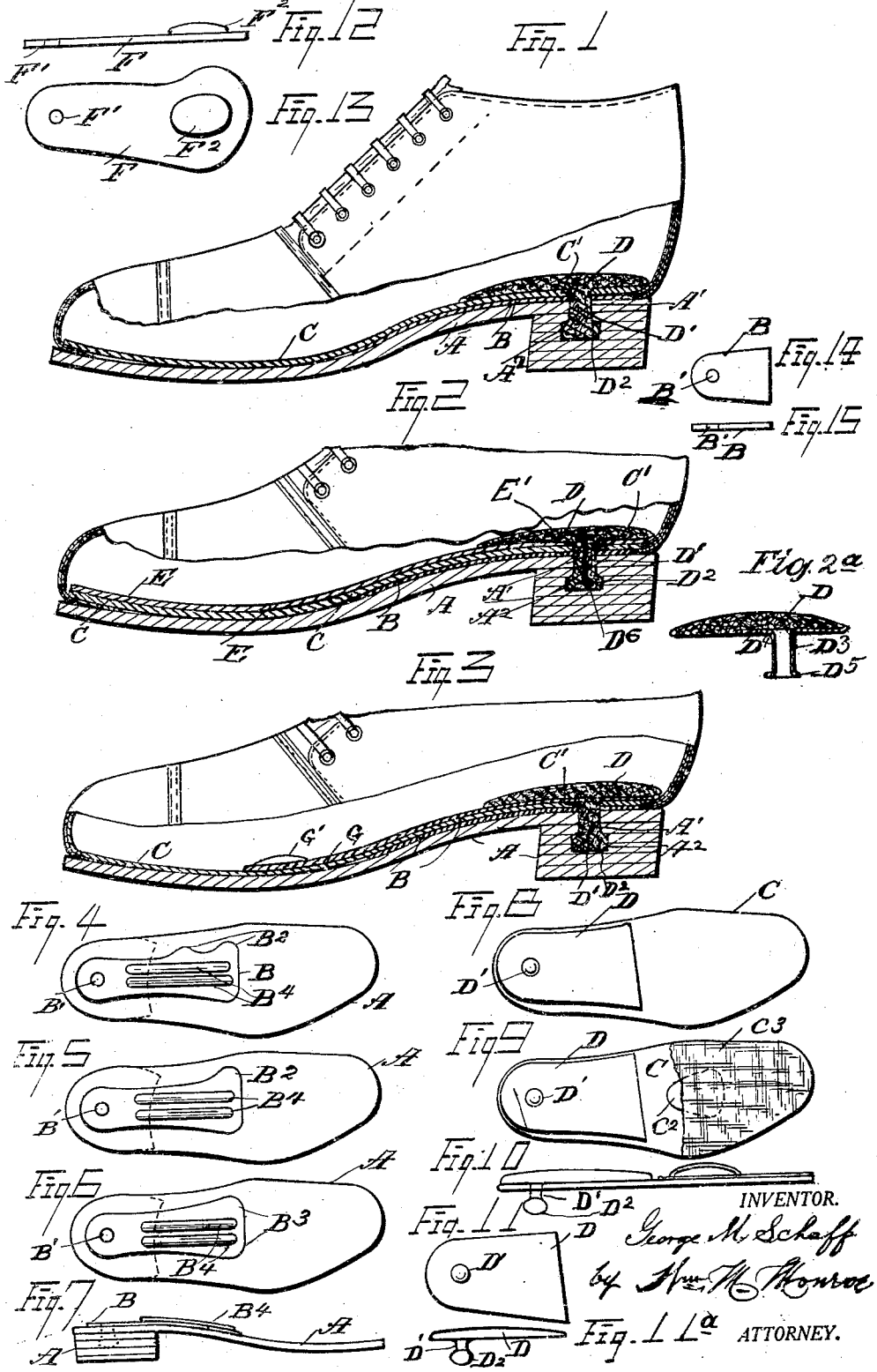
April 21, 1931. G. M. SCHAFF 1,801,532

SHOE

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SHOE

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The invention relates to cushioning and arch supporting means for the sole of a foot when inclosed in a shoe and inter-locking means therefor, preventing the shifting of the parts, thus permitting the foot to rest naturally at all times thereon and preventing injurious strain upon the foot by the displacement of any part.

To accomplish these and other valuable objects, the invention comprises the combination and arrangement of parts and manner of constructing the various details, hereinafter described, illustrated in the accompanying drawings and specifically pointed out in the claims.

In the accompanying drawings, Fig. 1 is a vertical longitudinal section of a shoe showing the outsole and heel, a longitudinal metal arch support, an insole and a heel cushion interlocked together by the improved method; Fig. 2 is a similar view showing the above mentioned parts with the addition of a cushioned insole, between the regular insole and the heel cushion; Fig. 2*a* shows a modified type of attached locking pin.

Fig. 3 is similar to Fig. 1 showing a metatarsal pad or cushion applied to the insole; Fig. 4 is a plan of a sole showing a metal arch support superimposed thereon and interlocked therewith and having lateral extensions; Fig. 5 is a similar view showing the arch support having one lateral extension; Fig. 6 is a similar view showing the arch support having a broadened inner edge; Fig. 7 is an edge elevation thereof; Fig. 8 is a plan of an insole showing the heel cushion superimposed thereon and interlocked therewith; Fig. 9 is a plan of an insole showing the heel cushion, and a metatarsal pad superimposed thereon; Fig. 10 is a side elevation thereof; Fig. 11 is a plan of the heel cushion; Fig. 11*a* is a side elevation of the same; Fig. 12 is a side elevation of a short metatarsal plate, and Fig. 13 is a plan thereof; Figs. 14 and 15 are plan and side elevations respectively of a metal plate for a flexible shank shoe.

In these views, in Fig. 1, A represents a unitary structure of outsole and heel, B is the metal plate for supporting the arch of the foot, C is the insole and D is a cushion positioned to absorb the shock upon the heel in walking.

The heel A, metal plate B, and insole C, are provided with the alined openings A′, B′, and C′, respectively and the cushion D is provided with a vertical locking pin D′ which may be integrally formed from a downwardly projecting portion of the substance of the fabric, or may be formed of an attached pin of metal or other substance as shown in Fig. 2*a*, to serve as a lock member, to secure all these parts in close contact with each other, so that they are substantially immovable in the shoe.

If the locking pin is composed of felt it may be reinforced by metal as shown at D6. The lower extremity of the locking pin is preferably laterally expanded to form a head at D2 thus preventing the accidental withdrawal of the pin from the opening A′ in the heel, which is also expanded at A2 to receive the same.

The arch support B preferably extends to the ball of the foot, and may be laterally extended as at B2, shown in Figs. 4 and 5, or widened at the outer end at B3 as shown in Fig. 6. This plate may be corrugated as shown at B4 to reinforce the same.

When this plate is provided for a flexible shank shoe it may be much shortened as shown in Figs. 14 and 15.

The insole C may be of any regular construction as shown in Fig. 1, or may be covered with a second insole or plate G having a pad underneath the metatarsal joint as shown in Fig. 3 or may be covered by means of a cushion inner sole E as shown in Fig. 2, if desired. This inner sole is also provided with the opening E′ through which the pin D2 passes, thus binding the inner parts together and to the heel.

The combination of insole and heel cushion D is shown in Fig. 8 and the combination of insole C, heel cushion D and metatarsal pad C2 is shown in Figs. 9 and 10 and the pad is covered with a coating of fabric C3.

The cushion D and its locking pin D′, provided with a head D2, are shown separately in Figs. 11 and 11*a*.

In Figs. 12 and 13*a* separate short meta-

tarsal plate or insole F is shown provided with the opening F′ and a pad F2. Other variations in assembly of the various inner parts can be made at will by substituting one inner part for another, to suit the requirements of the feet of the wearer.

All the inner parts are locked together and to the heel by means of the pin D′, which may be attached to, or formed integrally with the heel cushion D.

In Fig. 2*a* a metal tubular pin D3 is provided with an attaching base D4. Other modifications may be made within the spirit of the invention, and scope of the claims.

Having described the invention what I claim as new and desire to secure by Letters Patent is:

1. In a shoe the combination with a continuous heel and sole, of a metal arch supporting plate, an insole and a heel cushion superimposed thereon, said heel, plate and insole being provided with registering openings, and a locking pin passing downwardly through said openings, said pin being attached to said heel cushion and movable therewith.

2. In a shoe a continuous sole and heel, a metal arch support thereover, an inner sole and a metatarsal pad and heel cushion superimposed thereon, said heel, metal arch support, inner sole and metatarsal pad having registering openings therein, and a locking member projecting downwardly from said heel cushion and passing through said arch support and inner sole.

3. In a shoe a continuous sole and heel, a metal arch support thereover, an inner sole and a metatarsal pad and heel cushion superimposed thereon, said heel, metal arch support, inner sole and metatarsal pad having registering openings therein, and a locking member projecting downwardly from said heel cushion and passing through said arch support and inner sole, said locking pin being laterally expanded at its lower end and the opening in said heel being correspondingly expanded.

4. In a shoe a continuous sole and heel, said heel having a vertical opening therein, an arch supporting plate and an insole thereon, and a heel cushion thereover, said plate and insole having vertical openings therethrough registering with the opening in said heel, said cushion being provided with a locking member passing through all said openings, said plate being provided with reinforcing means and with lateral extensions substantially as described.

5. In a shoe a sole and a heel, said heel having a vertical opening in its upper face, a metal arch support thereon having a corresponding opening, a covering member for said arch support having a corresponding opening, a heel cushion superimposed thereon, and a locking member secured to said heel cushion, said locking member passing downwardly through all said openings and engaged with said heel.

In testimony whereof I affix my signature.

GEORGE M. SCHAFF.