June 24, 1930. C. L. LAIBLE 1,767,801

SHOE

Filed Jan. 27, 1928

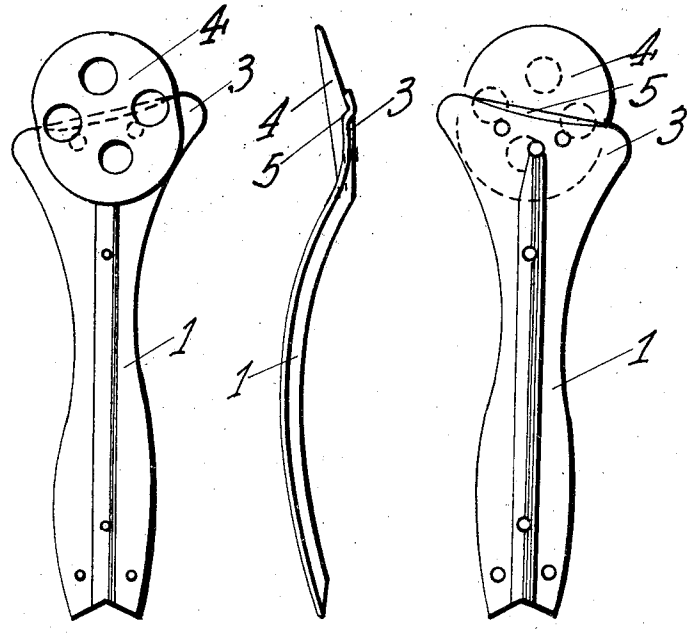


FIG 1 FIG 2 FIG 3

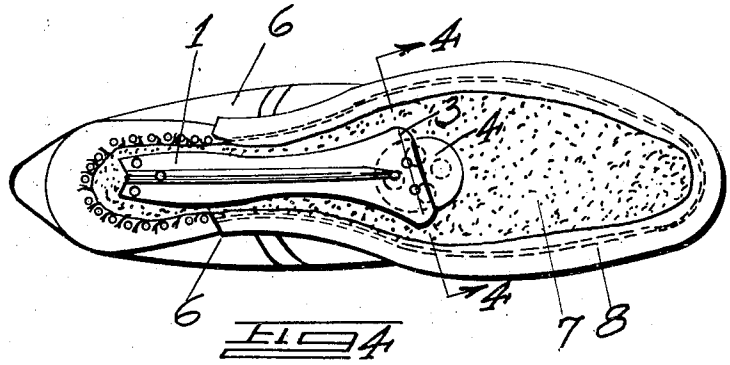


FIG 4

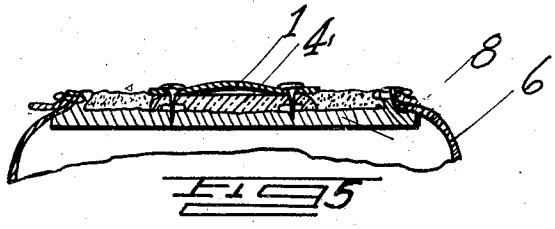


FIG 5

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SHOE

Application filed January 27, 1923. Serial No. 250,046.

My invention relates to the general class of shoes, particularly welt shoes, which have shank stiffening and arch supporting devices incorporated in their structures.

In combination with a shank stiffener and arch supporting device, it is the object of my invention to insert in a shoe a pad which will be operatively connected to the shank stiffener and which will provide a flexible cushion like support to the foot in that portion of the bottom thereof on which a callus is likely to be formed by the falling of the metatarsal arch. A further object is the provision of a resilient pad of unusual shape which fits on the end of a shank stiffener member to which it is preferably attached, and which is provided with recesses several of which are disposed along the front edge of the stiffener piece to increase the flexibility along this line so that the pad will bend relative to the stiff shank piece along this line. Broadly it is the object of my invention to provide a shank stiffener and metatarsal arch support which will press upwardly against the insole of the shoe so as to support the foot comfortably during the different positions of walking movement.

The above and other objects to which reference will be made during the ensuing disclosure I accomplish by that certain combination and arrangement of parts of which I have shown a preferred embodiment.

Referring to the drawings:—

Figure 1 is a plan view of the shank stiffener and arch supporting piece.

Figure 2 is a side elevation of the device shown in Figure 1.

Figure 3 is a bottom plan view of the assembly shown in Figures 1 and 2.

Figure 4 is a bottom plan view of a welt shoe in process of manufacture with my novel supporting device in position, the shoe being in that stage of manufacture in which the piece is usually inserted.

Figure 5 is a sectional view taken along the lines 5—5 in Figure 4.

The shank stiffener piece which is ordinarily of metal has a fluted, curved shank body 1, and the body may or may not have small tongues pierced out of the body to imbed themselves in the outsole of the shoe. The forward end 3 of the shank stiffener piece is enlarged, and a resilient pad generally indicated at 4, and preferably of rounded shape, is attached to the forward end of the enlarged part 3. In order to have the pad flexibly supported I have found that if a recessed portion 5 be made in the face which engages the piece 4, and the piece 4 is secured to the pad approximately along a segment extending across it, the forward end of the pad will be free to bend with the movement of the foot within the shoe. The pad will also fit more readily within the shoe without bulging.

The pad on its upper face, which engages the insole of the shoe may be provided with depressions, which assist in establishing a line along which the pad will bend. The depressions also permit the pad to be more resilient and cushion like when under pressure.

In assembling the shoe the upper 6 is attached to the insole 7 with the welt strip 8. The shank stiffened piece is then inserted with the pad bearing against the lower surface of the insole. A cementitious filling such as ground cork will preferably then be applied to fill in the cavity formed between the feathered ribs of the welt and the shoe is ready to have the outsole stitched to the welt strip.

The shoe, after being finished, may be worn by a person afflicted with falling of the metatarsal arch with great relief. My novel type of shoe is further corrective in its effect on the wearer's foot.

In order to indicate the support which my novel type of shoe offers it may be well

to discuss the action of the arch supporting piece during the normal movement of the foot in walking. Beginning first with the floot flat against the floor, the rubber pad is gently forced up against the back curve of the ball of the foot by the pressure of the shank stiffener. During the next movement of the foot when the toe is inclined downwardly and supports the weight of the body, the pad is pressed against the lower curve of the ball of the foot with greater pressure. This increased pressure comes at a time when the person walking will experience no inconvenience due to the pressure. Then when the foot is raised clear of the ground the pad tends to be held against the insole by the vacuum cups.

While others have attempted to accomplish somewhat the same results as I have herein disclosed, such for example as is suggested in the Dunbar Patent #1,174,133, I have experimented with such combinations and find that unless the shank stiffener has a pad attached to it in such a way that the pad will flex about the end of the stiffener piece that the same degree of comfort in wearing the shoe cannot be obtained. I therefore claim the equivalents of the combination herein disclosed.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A shoe having a stiff shank stiffener retained between the insole and the outsole thereof, and having a resilient pad attached to the forward end of the stiffener piece, and said pad having a bearing surface to abut the lower surface of the shoe insole, said surface being indented with cup like depressions to increase the flexibility of the pad and to establish a predetermined flex line.

2. A shoe having a stiff shank stiffener retained between the insole and the outsole thereof, and having a resilient pad attached to the forward end of the stiffener piece, said pad being so attached to the end of the stiffener piece that it will flex along the line of a segment thereof, and said pad having a bearing surface to abut the lower surface of the shoe insole, said surface being indented with cup like depressions to increase the flexibility of the pad and to establish a predetermined flex line.

3. A shoe having a stiff shank stiffener and arch supporting member incorporated within its structure, said member having a forward end which lies in the shoe under the back of the ball of the foot of a wearer, and a flexible pad attached to the forward end of said member and extending beyond said end toward the tip of the shoe, said flexible pad having cup-like depressions in the upper surface thereof which produce a flex line along the front edge of the stiffener.

4. In combination with a welt shoe, a stiff arch stiffening member and a circular resilient pad disposed between the inner sole and the outsole of the shoe, said pad having depressions therein, and said pad being supported at the front end of the arch stiffening member, and extending beyond the end thereof, the arrangement of some of the depressions being such as to increase the bending tendency of the pad along a segment thereof corresponding to the front end of the stiffening member.

CHARLES L. LAIBLE.