G. AJELLO.

SHOE SOLE AND HEEL.

APPLICATION FILED MAY 15, 1919.

1,363,076. **Patented Dec. 21, 1920.**

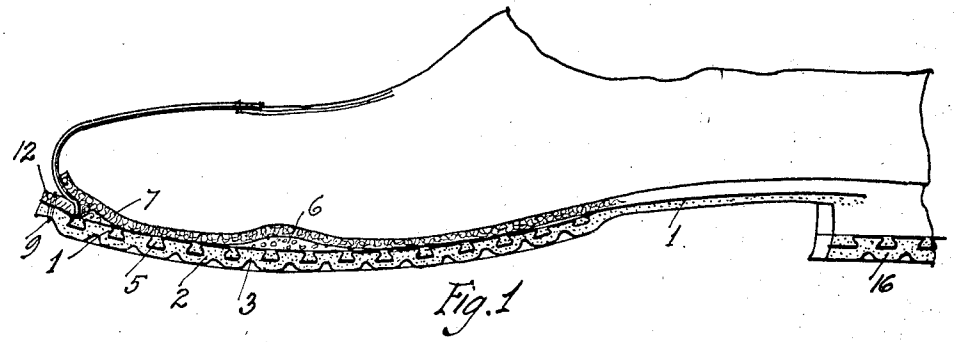


Fig. 1

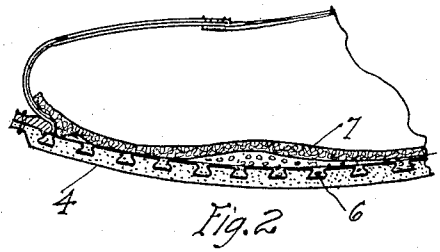


Fig. 2

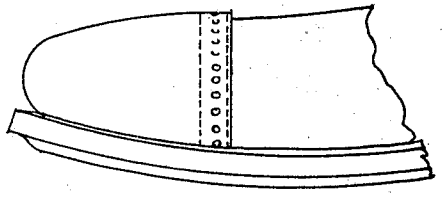


Fig. 3

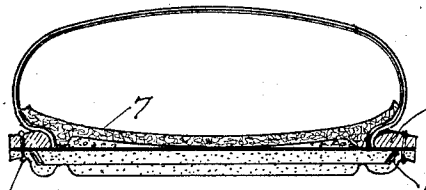


Fig. 4

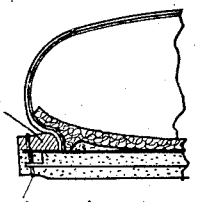


Fig. 5

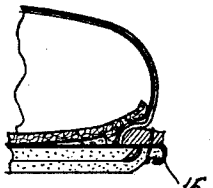


Fig. 6

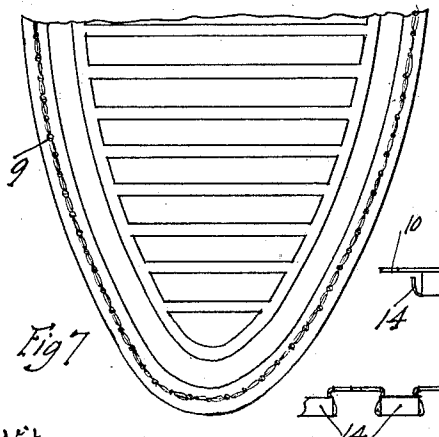


Fig 7

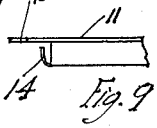


Fig. 9

Fig. 8

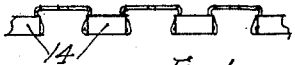


Fig. 10

Witnesses
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SHOE SOLE AND HEEL.

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To all whom it may concern:

Be it known that I, GAETAN AJELLO, a citizen of United States, residing at New York, in the county of New York and State of New York, have invented a new Shoe Sole and Heel, of which the following is a specification.

The objects of my invention are: first to provide a sole that will be rigid transversely while possessing the usual flexibility longitudinally; second, an impervious sole; third, a sole that would outwear other parts of the shoe; fourth, a thin sole stronger than the thick, bulky ones.

I attain these objects by the combination of parts illustrated in the accompanying drawing, in which: Figure 1 is a longitudinal sectional view of my sole attached to an ordinary shoe; Fig. 2 is a partial longitudinal section of a similar sole; Fig. 3 is a partial elevational view of an ordinary shoe with my sole attached thereto; Fig. 4 is a cross section of my sole attached to an ordinary shoe; Figs. 5 and 6 are similar sections as Fig. 4 showing modifications; Fig. 7 is a plan view of the outer face of the sole; Fig. 8 is a plan view of a metallic part forming part of the new sole; Fig. 9 is an enlarged front view of a portion of Fig. 8 near one of its ends; Fig. 10 is a side view of the latter.

Similar numerals refer to similar parts throughout the several views.

The new sole is composed of a corrugated sheet of metal 1; (shown in heavy line) surfaced with an outer layer of impervious, flexible material 2, which can be provided with corrugations 3 or finished plain as at 4 (Fig. 2). The inside portions 5 of the corrugations could also be filled with the material 6 commonly employed to shape and receive the inner sole 7, if desired.

The impervious flexible material filling the corrugations 5, when same as 2, can be connected, if desired, with the outer layer of the same material 2 by means of apertures 8 in the metallic member of the sole. (Fig. 8.)

A sole thus formed is attached to the ordinary shoe by means of the usual stitches 9 or other suitable means including metallic ones, through the holes or other kind of apertures 10 of the metallic sheet or plate. Said perforations are only provided on the upper and outer flanges 11 of the metallic plate according to the drawing; but if desired to have a stronger edge in the sole, the lower flanges of the metallic plate could terminate at their edges the same as the upper flanges 11, Fig. 5, and have also perforations 10 registering with the upper ones. The flexible material 2 would in this case, also, cover all. The means of attachment would therefore, through the perforations 10, secure the sole to the welt 12.

The lower flanges 13 of the metallic plate have projecting and upward bent ends 14, which assist in the lateral end resistance of the sole.

If desired, the upper flanges 11 of the metallic plate could be extended and bent over the edge of the sole, as illustrated at 15, Fig. 6.

It is obvious that, if desired, the metallic plate could also be used in connection with an outer or lower sheet of leather in addition to the impervious ply.

A similar construction applied to the heel, as shown at 16, Fig. 1, has a metallic member and finished outside surface substantially as shown respectively in Fig. 8 and Fig. 7; the only variation from the sole being the outer line, which would take a contour typical of the usual heel. In this case, metallic connecting means the equal of nails, tacks or screws could be inserted (in preference to stitches) through the perforations 10, into the inner body of the heel.

In general, I do not wish to limit myself to the shown method of attaching of the new sole or heel, as for example, a reinforcement consisting of an extra piece of flexible material including leather could be inserted around the edge; and, if desired, the metallic flanges 11 could be less projecting and without the perforations 10, so as to terminate all around just clear of attaching means 9 or the perforations 10 could be wider, rectangular ones, spaced in relation to one another so as to clear the needle of the sewing machine.

I claim:

1. The herein described tread member for shoes comprising a metallic plate corrugated from one end to the other with the corrugations extending transversely and from one side of the plate to the other, said corrugations being formed with flat bearing surfaces.

2. The herein described tread member for shoes comprising a continuous impervious metallic plate of spring metal, the same be-

ing corrugated, with the corrugations extending transversely thereof from one side to the other, and comprising flat bearing surfaces.

3. In a tread for shoes, the combination of a metallic plate coextensive with the forepart thereof and corrugated from one side to the other for longitudinal flexibility and lateral rigidity, and an impervious ply of material coextensive with the corrugated plate and filling the corrugations thereof along one surface.

4. In a shoe tread, the combination of a plate of sheet metal coextensive with the tread and corrugated from one side to the other for flexibility in one direction and rigidity in the other direction, and impervious plies of material fitted to both surfaces of the corrugated plate and filling the corrugations thereof.

5. In a shoe tread, a metallic plate corrugated transversely thereof and from one end to the other, the ends of the bottom portion of each corrugation being flat and projected laterally beyond the main portion of the plate for attaching purposes.

6. In a shoe tread, the combination of a metallic plate corrugated from one end to the other and with the corrugations extending transversely of the plate for lateral rigidity, the bottoms of the corrugations nearest the sole of the foot being provided with flat end extensions having perforations for fastening purposes.

7. In a shoe tread, the combination of a metallic plate corrugated from one end to the other, the corrugations extending transversely for lateral rigidity, the bottoms of all of the corrugations being provided with free end members some of which constitute attaching means and others of which constitute lateral stiffening flanges, impervious flexible material extending along the plate, and means serving to secure the metallic plate and the impervious material together and to the other parts of the shoe.

GAETAN AJELLO.