March 5, 1929. A. A. GLIDDEN ET AL 1,704,187

SOLE FOR BOOTS AND SHOES

Filed July 22, 1927

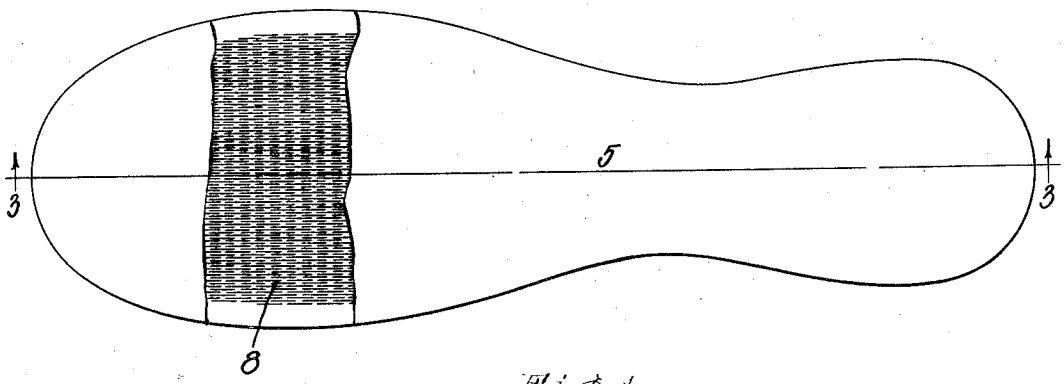


Fig. 1.

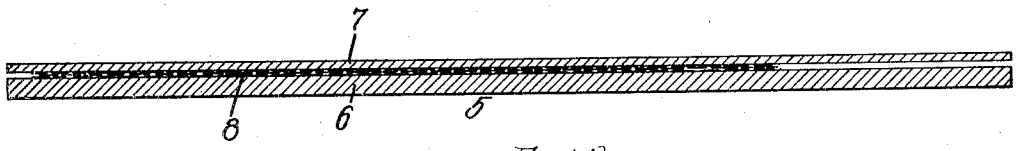


Fig. 2.

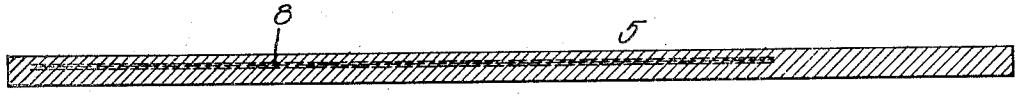


Fig. 3.

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UNITED STATES PATENT OFFICE.

ALFRED A. GLIDDEN AND THOMAS M. KNOWLAND, OF WATERTOWN, MASSACHUSETTS, ASSIGNORS TO HOOD RUBBER COMPANY, OF WATERTOWN, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

SOLE FOR BOOTS AND SHOES.

Application filed July 22, 1927. Serial No. 207,791.

This invention relates to an improvement in soles for boots and shoes.

The object of the invention is to provide a rubber sole for boots and shoes, and particularly a sole for a molded rubber boot, which will be impervious to nails or other sharp articles which might penetrate the sole and cause injury to the foot of the wearer. This object is attained by embodying in a rubber sole a flexible metallic layer or layers so constructed and arranged within said sole that they will be firmly bonded therein and the flexibility of the sole retained.

The invention consists in a sole for boots and shoes as set forth in the following specification and particularly as pointed out in the claims thereof.

Referring to the drawings:

Figure 1 represents a plan view of a sole embodying our invention, a portion thereof being broken away to expose the layer of flexible metallic material located therein.

Fig. 2 is a vertical section through the layers of material comprising the sole before said layers have been compressed together.

Fig. 3 is a vertical section through the finished sole as taken on the line 3—3 of Fig. 1.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 5 represents a sole embodying therein a lower layer of rubber 6 and an upper layer of rubber 7, between which is a layer of flexible metallic material 8. The layers of rubber 6 and 7 extend for the full length of the sole 5, while the layer 8 of metallic material extends from the front of the sole to a point adjacent to the front of the heel portion thereof only, allowance being made for a narrow marginal portion of solid rubber in the finished sole between the edge of the metallic layer and the edge of said sole.

The layer of flexible metallic material 8 consists of a piece of metal link mesh fabric and may consist of any of the well-known forms of mesh fabric such as are employed in the construction of ladies' handbags and similar articles.

In the process of forming the sole, the layer of fabric 8 is inserted between the lower and upper layers of rubber 6 and 7 respectively, and said superimposed layers are compressed in any suitable manner to expel air that may be trapped therebetween. During this pressing operation the rubber upon the opposite sides of the metal fabric is forced through the interstices of said fabric and finally the sole, with the layer of metal therein, is molded and vulcanized to form the completed sole illustrated in Fig. 3. During the vulcanizing operation the rubber on the opposite sides of the metallic layer 8 will be bonded together through the interstices of said fabric.

It is evident that the sole of this invention may be utilized as an outer sole for all types of boots and shoes, said sole being attached to the upper of the shoe by any well-known method, or the sole may be employed as an inner sole, in which case it may be inserted within a boot or shoe in the usual well-known manner and when so employed, it is evident that it will protect the foot against nails or other pointed articles which if stepped upon, might penetrate the outer sole of the shoe and injure the foot of the wearer.

While we have employed the term "rubber" throughout the specification and claims, we wish it distinctly understood that this term applies to all gum or rubber compounds and to all compositions of materials having the qualities of rubber, and that are employed as substitutes therefor, and are the equivalents thereof.

We claim:—

1. A sole for boots and shoes having, in combination, a rubber body portion and a layer of metal link mesh fabric within said body portion.

2. A sole for boots and shoes having, in combination, a rubber body portion and a layer of metal link mesh fabric molded within said body portion.

3. A sole for boots and shoes having, in combination, a rubber body portion and a layer of metal link mesh fabric within said body portion, the rubber upon opposite sides of said fabric being bonded together through said fabric.

4. A sole for boots and shoes having, in combination, a plurality of layers of rubber and a layer of metal link mesh fabric between said layers of rubber, the rubber of said layers being bonded together through the links of said fabric and vulcanized.

In testimony whereof we have hereunto set our hands.

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