(No Model.)

H. H. GIBBS.

CUSHIONED HORSESHOE.

No. 551,670. Patented Dec. 17, 1895.

Fig. 1.

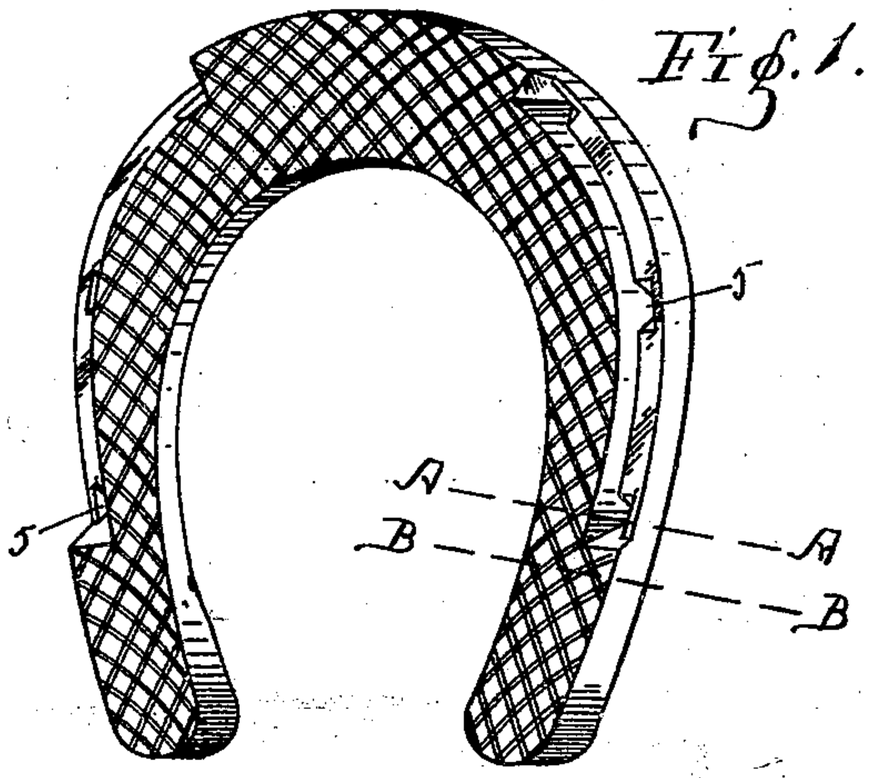


Fig. 2.

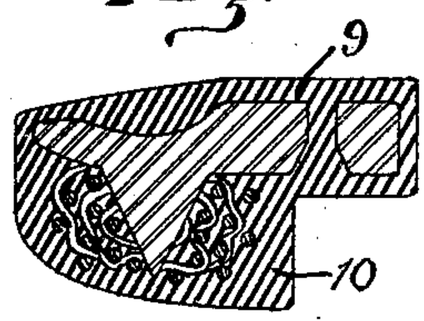


Fig. 3.

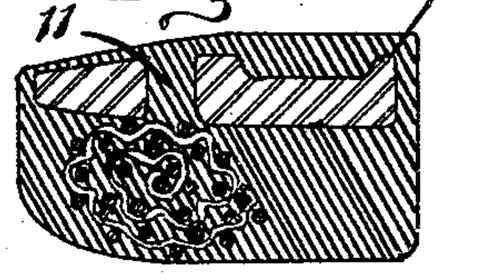


Fig. 4.

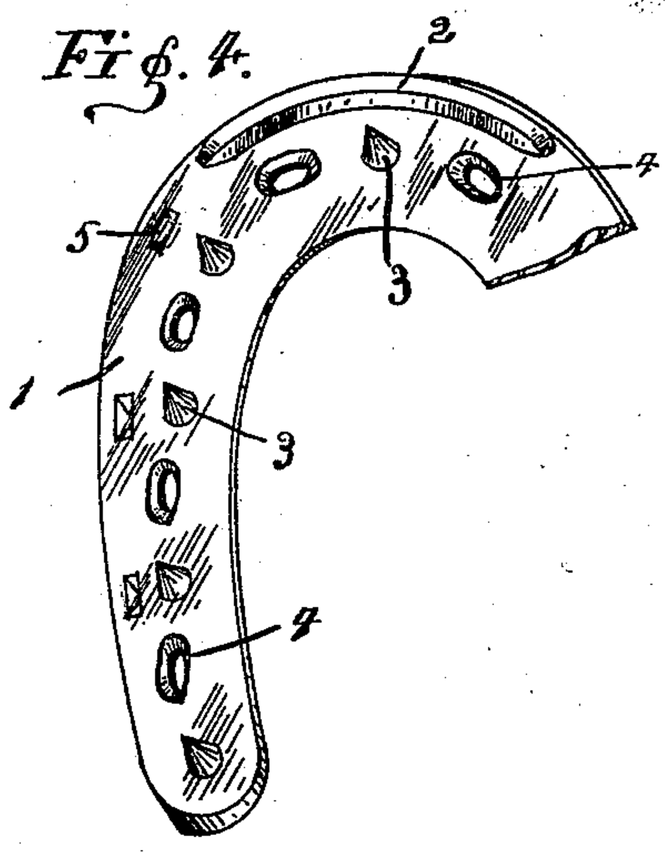


Fig. 5.

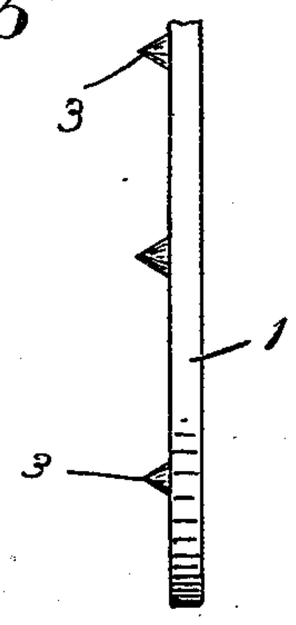
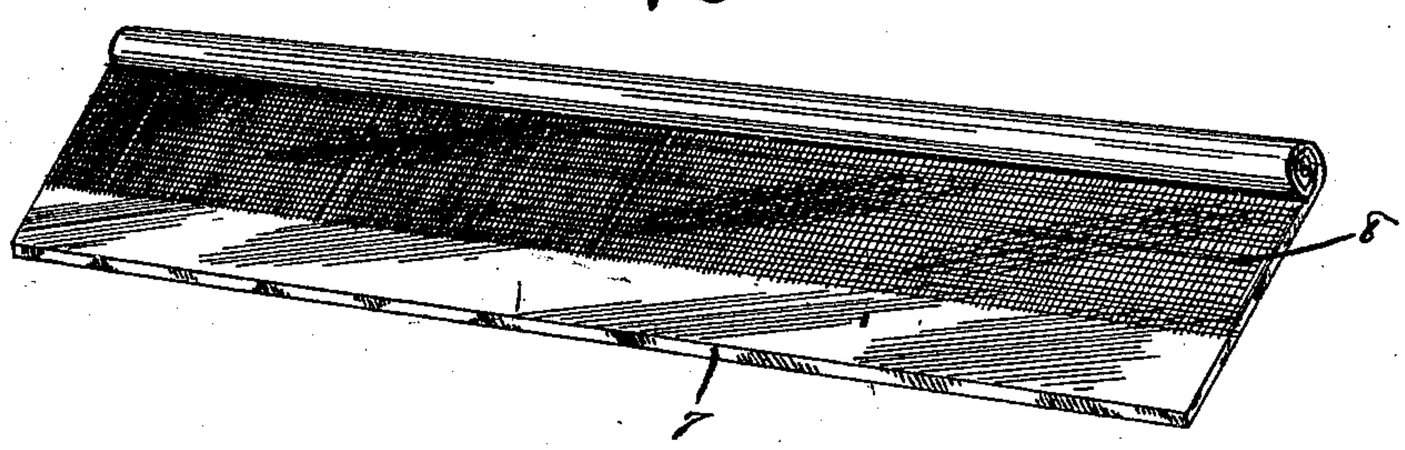


Fig. 6.



Witnesses
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UNITED STATES PATENT OFFICE.

HIRAM H. GIBBS, OF INDIANAPOLIS, INDIANA.

CUSHIONED HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 551,670, dated December 17, 1895.

Application filed March 14, 1895. Serial No. 541,837. (No model.)

To all whom it may concern:

Be it known that I, HIRAM H. GIBBS, of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Cushioned Horseshoe; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like numerals refer to like parts.

My invention relates to improvements in elastic-tread horseshoes wherein the elastic portion of the shoe will be very firmly secured to the metal portion and the shoe at the same time be rendered very durable and elastic. Its nature will be understood from the following description and the accompanying drawings.

Figure 1 is a perspective of the shoe inverted. Fig. 2 is a cross-section of the same at A A of Fig. 1. Fig. 3 is a cross-section of the same at B B of Fig. 1. Fig. 4 is a perspective of a portion of the metallic member of the shoe. Fig. 5 is an edge view of a portion of the same. Fig. 6 illustrates the nature and method of constructing the cushion to be placed on the under side of the shoe.

1 is a metallic frame made in any desired manner with a front calk 2 made integral with it and also the lugs 3 which are preferably conical, as shown. A series of apertures 4 are placed in the frame substantially as shown with their sides beveled as nicely as possible in order to prevent the rubber passing through them from cutting.

5 are the nail-holes.

The upper surface of the skeleton frame 1 is grooved substantially as shown in cross-section in Figs. 2 and 3, whereby the ribs 6 are formed to assist in holding the upper portion of the rubber in place on the frame.

After making the frame above described or one substantially like it I make the cushion in the following manner: I take a rubber strip 7 and lay upon it a piece of wire-netting 8. I then roll the two together tightly, as shown in Fig. 6, until they are completely rolled up into a roll about the thickness of a man's thumb. The metallic portion of the shoe is then placed in suitable rubber molds and subjected to such heat as is usually required in vulcanizing processes and then the round roll of rubber and wire-netting is placed on the under side of the shoe so that the conical lugs 3 will centrally penetrate it, pushing their way through the layers of rubber and through the wire-netting substantially as shown in Fig. 2. The roll is thus pressed down very securely and subjected to considerable heat whereby the rubber of the layer 7 penetrates the wire-netting after it has been placed on the shoe and this forms a solid compact mass. Then rubber is vulcanized to this combination so as to form the shoe substantially as shown in Figs. 1; 2, and 3, having a cushion 9 above the skeleton frame and a cushion 10 below with rubber necks 11 connecting the two.

The advantages of this form of elastic-tread horseshoe are apparent without much further explanation. The wire and rubber constituting the tread portion of the shoe are so thoroughly combined with each other and the wire so firmly embedded in the rubber and wrapped about the conical lugs 3 that it is impossible for the lower cushion of the shoe to be torn away at one time by the action of the pavement; furthermore the cushion below will be far more durable and require a much longer time to wear away, as the wires have to be worn away with the rubber, and toward the latter part of this wearing-away process the lugs 3 must be worn away. At that stage they protect to some extent the surrounding cushion. The upper cushion is held in place by the nails passing through it, by the rubber necks 11 and by the recesses and ribs in the iron frame on its upper side. This feature as well as the feature of making the heel of the upper elastic member thicker than the toe and the rest of the shoe the reverse is the same as shown and described in my application filed December 3, 1894, Serial No. 530,756.

The shoe herein shown is an improvement on that shown and described in my Letters Patent dated July 10, 1894, and numbered 522,789.

Of course instead of the wires any strong threads or filaments may be used to strengthen the rubber cushion.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A horseshoe comprising a metal frame

and a cushion secured thereto composed of rubber with long wires or fibers interwoven throughout the same, substantially as set forth.

2. A horseshoe comprising a metal frame provided with a series of downwardly extending lugs, and a cushion comprising a body of rubber with long wires embedded therein secured to such metal frame so that the lugs will extend into the network of wires and the rubber of the cushion.

3. A horseshoe comprising a metal frame provided with a series of downwardly extending conical lugs, and a cushion made of a layer of rubber and a layer of wire netting rolled together and so placed on such frame that the lugs will penetrate the wire netting, and then the whole vulcanized together.

4. A horseshoe comprising a metal frame provided with a series of apertures, an elastic cushion below such frame having long wires embedded therein, and an elastic cushion above such frame, the two being connected by necks of rubber extending through such apertures.

In witness whereof I have hereunto set my hand this 31st day of January, 1895.

HIRAM H. GIBBS.

Witnesses:
A. S. COURTRIGHT,
L. A. MONROE.