

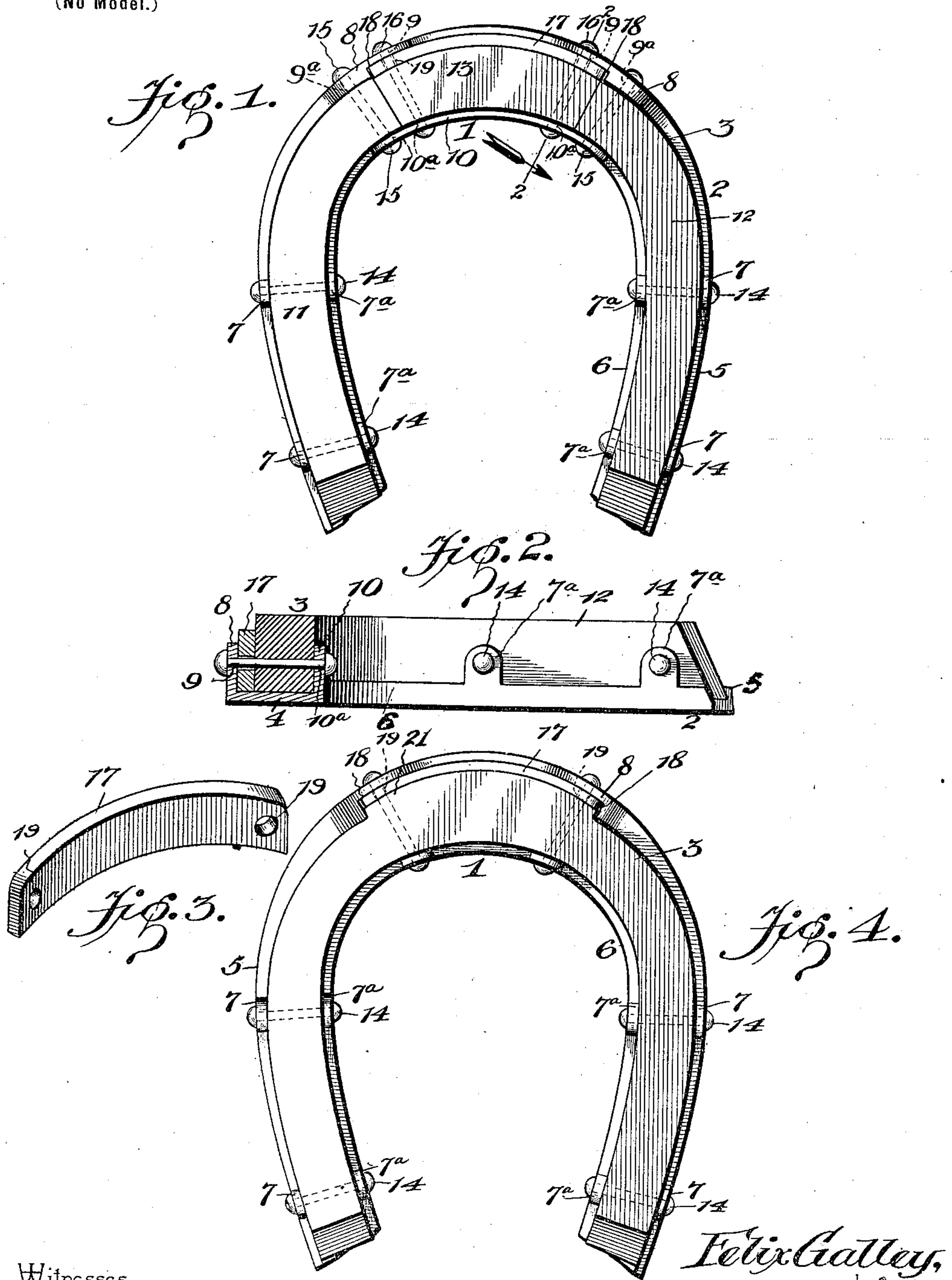
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Patented Sept. 6, 1898.

F. GALLEY.
ELASTIC TREAD HORSESHOE.

(Application filed Feb. 4, 1898.)

(No Model.)



Witnesses

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FELIX GALLEY, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF TO PRESTON VAUGHN, OF NASHVILLE, TENNESSEE.

ELASTIC-TREAD HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 610,324, dated September 6, 1898.

Application filed February 4, 1898. Serial No. 669,121. (No model.)

To all whom it may concern:

Be it known that I, FELIX GALLEY, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Horse-
5 shoe, of which the following is a specification.

My invention relates to improvements in elastic-tread horseshoes; and the object that I have in view is to improve the construction
10 of the article in a manner to prolong the life or service thereof, increase its durability, and provide for the renewal of the worn section of the tread-surface at the toe portion of the shoe.

15 In my prior Letters Patent, No. 587,722, dated August 10, 1897, I have disclosed a horseshoe in which rubber cushions are employed in connection with a skeleton metallic shoe and a toe-calk which separates the sec-
20 tions or lengths of the cushion. Practical experience with a shoe embodying an elastic cushion in its tread-surface has shown that the tread-surface wears away much faster or quicker at the toe than at the sides or heel of
25 the shoe, which wear on the toe-section is due to the friction and impact of the toe portion of the cushion striking the roadway in advance of the sides or heel of the shoe. My improved shoe is designed to reduce as much
30 as possible this wear on the toe-section of the elastic tread or cushion and also to provide for the replacement of the worn toe-section with a corresponding new section, which can readily be inserted at a trifling expense, to
35 render the shoe almost as good as new, thereby increasing the durability of the shoe and prolonging the service thereof.

With these ends in view my invention consists in the combination, with a skeleton metallic shoe and an elastic cushion forming the
40 tread-surface, of a metallic wear-plate interposed between the skeleton shoe and the cushion at the toe portion of the shoe and exposed to pressure to be confined in place by
45 the cushion.

The invention further consists in the combination, with a metallic skeleton shoe, of a sectional cushion forming the tread-surface and having the toe length or section remov-
50 able or detachable from the sides and heel portions of said cushion and means for hold-

ing the sections of said cushion independently in place within the skeleton shoe, whereby the toe-section when worn may be removed and replaced without disturbing the sides of
55 the cushion.

The invention further consists in the novel construction and arrangement of parts, which will be hereinafter fully described and
60 claimed.

To enable others to understand my invention, I have illustrated different embodiments thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is an inverted plan view of my im-
65 proved horseshoe, illustrating a sectional construction of the elastic cushion with a removable toe-section and a metallic wear-plate which is coextensive, practically, with said
70 removable toe-section. Fig. 2 is a sectional elevation on the plane indicated by the dotted line 2 2 of Fig. 1, showing the shoe in its inverted position. Fig. 3 is a detail perspective
75 view of the wear-plate detached from the shoe and the elastic cushion. Fig. 4 is an inverted plan view of a modified embodiment of the invention, showing the elastic cushion
80 in a single continuous piece and provided with an integral reinforcement, which, in connection with the metallic wear-plate, pro-

Like numerals of reference denote like and corresponding parts in each of the several figures of the drawings.

My improved elastic-tread horseshoe is des-
85 ignated in its entirety by the numeral 1 in the accompanying drawings, and, broadly stated, it comprises a channeled skeleton frame 2 and an elastic cushion 3, the construction
90 and the arrangement of which parts and the means for joining them together in operative relation I will now proceed to describe in detail.

The skeleton frame 2 is cast in a single piece of metal with a plate or web 4 and the con-
95 tinuous marginal flanges 6 and 5 on the inner and outer edges, respectively, of said plate or web 4. The outer flange 5 is provided at intervals along its side portions with the perforated lugs 7, and at the toe portion of said
100 skeleton frame said outer marginal flange 5 is further provided with the two longer lugs 8,

situated on opposite sides of the medial line of the shoe-frame, each of the longer lugs 8 being of such length as to enable two holes 9 9^a to be produced therein. The inner marginal flange 6 of the skeleton shoe is provided at the toe portion with the long lug 10, which is disposed opposite to the lugs 8 of the outer marginal flange, and in this lug 10 is produced the series of holes 10^a, which aline or coincide with the holes 9 9^a in the lugs 8. The marginal flanges 5 6 lie at right angles to the plane of the web or plate 4, so as to produce a skeleton shoe having the channel on its lower face for the reception of the elastic cushion 3, and said plate or web 4 is provided with perforations, through which may be driven the nails which fasten the shoe to the hoof of the animal.

The elastic cushion 3 is made of rubber of a peculiar nature which adapts it for service in this art, and said cushion may be in a single continuous length or piece, as represented by Fig. 4; but I prefer to make the cushion in sections or lengths and to provide means for securing said lengths or sections in place within the skeleton shoe independently of each other, thereby providing for the removal of the worn toe-section and its replacement by a new toe-section without disturbing the side sections along the sides and heel of the skeleton shoe. The preferred sectional form of the elastic cushion is represented clearly by Figs. 1 and 2 of the drawings, in which the two side sections are indicated at 11 12 and the toe-section at 13. The division-lines between the side and toe sections of the divided cushions 3 may lie substantially radial to the toe portion of the shoe; but this is not essential, because the ends of the cushion-sections may be beveled to overlap each other, in which event the lapped ends of two adjacent sections may be held in place by a single fastening. I prefer, however, to fasten the toe and side sections independently to the skeleton shoe, and this is effected by the means which I will now proceed to describe.

The side sections 11 12 of the cushion are secured to the skeleton shoe by means of rivets or pins 14 15, which pins 14 pass through perforated lugs 7 on the flange 5 and similar lugs 7^a on the inner flange 6, while the pins 15 pass through the holes 9^a and 10^a of the long lugs 8 and 10 of the inner and outer marginal flanges. The toe-section of the cushion is secured between the adjacent ends of the side sections 11 12 by the pins 16, which pass through the holes 9 of the long lugs 8 and the holes 10^a of the lug 10.

As heretofore explained, the toe portion of the cushion is exposed to considerable wear by the toe of the hoof striking the ground in advance of the side or heel portions of the hoof. Hence the toe portion wears out much faster than the side portions of the cushion. To prolong the life and durability of the removable toe-section of the cushion, I employ a wear-plate 17, which is practically coexten-

sive with the removable toe-section and is confined between the latter and the outer marginal flange 5 of the skeleton shoe. When the shoe is first made, the depth or thickness of the cushion and its toe-section exceeds the width of the wear-plate 17; but after the shoe has been in use a short time the toe-section 13 of the cushion wears down to be flush with the exposed edge of the wear-plate, thereby bringing into service the wear-plate and preventing excessive wear on the toe-section of the elastic cushion. This metallic wear-plate is confined in place by the means which are employed to hold the toe-section of the cushion to the skeleton shoe, and in the embodiment of the invention as illustrated by the accompanying drawings I provide the flanges 8 on the front side of the shoe with the recesses 18 to receive the ends of the metallic wear-plate, and the pins or rivets 16, which attach the toe-section of the cushion to the skeleton shoe, pass loosely through the wear-plate. It will thus be seen that the wear-plate is held by the recessed lugs or flanges of the skeleton shoe against endwise movement or displacement between the shoe and its cushion, while the pins or rivets 16 retain the metallic wear-plate in position against edgewise displacement. The metallic wear-plate is provided at or near its ends with openings 19 of a diameter larger than that of the pins or rivets 16, and thus the wear-plate is fitted loosely to the pins which attach the toe-section 13 of the cushion to the metallic shoe; but the wear-plate is prevented from movement or displacement because it is exposed or subjected to the pressure of the elastic cushion, whereby the wear-plate is confined or held firmly in place.

In the embodiment of the invention represented by Fig. 4 of the drawings the elastic cushion is made in a single continuous piece of rubber of a contour and dimensions to fit properly in the channeled part of the shoe, and the toe portion of the continuous single-piece cushion is enlarged integrally by forming an offset or web 21 thereon. This type of cushion is used in connection with the metallic wear-plate which is interposed between the integral offset 21 of the cushion and the front marginal flange 5 of the skeleton shoe, and said wear-plate is confined in place by the recessed lugs of the shoe-frame, the pins or rivets which attach the front portion of the cushion to the shoe, and the pressure of the cushion and its integral offset against said wear-plate. In using the insertible wear-plate in connection with a cushion having the integral offset at its toe portion it is necessary to compress the offset part and the cushion to a greater extent than is required in the construction shown by Fig. 1.

From the foregoing description, taken in connection with the drawings, it will be seen that I have provided a simple and cheap construction of horseshoe in which an elastic cushion securely is held in place within a skeleton

shoe. The toe portion of the cushion, which is exposed to the greatest wear, is reinforced by a metallic wear-plate, which takes up some of the wear on the shoe and prolongs the life and service thereof. In the practical service of the shoe constructed in accordance with the preferred embodiment of my invention a worn-out toe-section of the elastic cushion and a worn wear-plate may readily be detached by removing the pins or rivets 16, inserting a new toe-section of the cushion along with a new wear-plate, and replacing the pins or rivets. There is comparatively little wear on the side sections 11 12 of the elastic cushion, and by replacing the toe-section of the cushion and the wear-plate the shoe may be used to good advantage for an indefinite length of time.

I am aware that changes in the form and proportion of parts and in the details of construction may be made by a skilled mechanic without departing from the spirit or sacrificing the advantages of my invention, and I therefore reserve the right to make such modifications as clearly fall within the scope of the invention.

Having thus described the invention, what I claim is—

1. An elastic-tread horseshoe comprising a skeleton metallic shoe, an elastic cushion fitted to said skeleton shoe, a wear-plate interposed between the cushion and the toe portion of the shoe and held in place by the elasticity of the cushion, and means for attaching said cushion and the wear-plate to the shoe, substantially as described.

2. An elastic-tread horseshoe comprising a skeleton metallic shoe, an elastic cushion held therein, and a metallic wear-plate confined between the skeleton shoe and the elastic cushion and exposed to the pressure of said cushion, substantially as described.

3. The combination with a skeleton shoe and an elastic cushion held therein, of a metallic wear-plate attached loosely to the skeleton shoe at the toe thereof and subjected to

the pressure of the elastic cushion to be held between said cushion and shoe against play or movement, substantially as described.

4. An elastic-tread horseshoe comprising a skeleton shoe, a divided, elastic cushion having its members fitted within said skeleton shoe and with its toe portion between the side portions thereof, means for fastening the side sections of the divided cushion to said shoe, separate means for attaching the toe-section of the cushion to the corresponding part of the shoe and a metallic wear-plate fitted between the toe portion of the shoe and the toe-section of the cushion and held loosely in place by the means which attach said toe-section of the cushion to the shoe, substantially as described.

5. An elastic-tread horseshoe comprising a skeleton shoe, a divided, elastic cushion fitted to said skeleton shoe and having its sections secured in place independently of each other, and a metallic wear-plate coextensive with the toe-section of the cushion and secured loosely in place between said cushion and the shoe, said wear-plate being subjected to the pressure of said cushion, substantially as described.

6. An elastic-tread horseshoe comprising a skeleton metallic frame provided on its outer edge with the recessed flanges, a divided, elastic cushion fitted in the skeleton shoe, means for fastening the side sections of the cushion to said shoe, a metallic wear-plate fitted in the recessed flanges of the shoe to be held thereby against endwise displacement, and fastening devices which attach the toe-section of the cushion to said shoe and loosely confine the wear-plate against edgewise displacement, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

FELIX GALLEY.

Witnesses:

JOHN H. SIGGERS,
ROBT. E. CRUMP.