

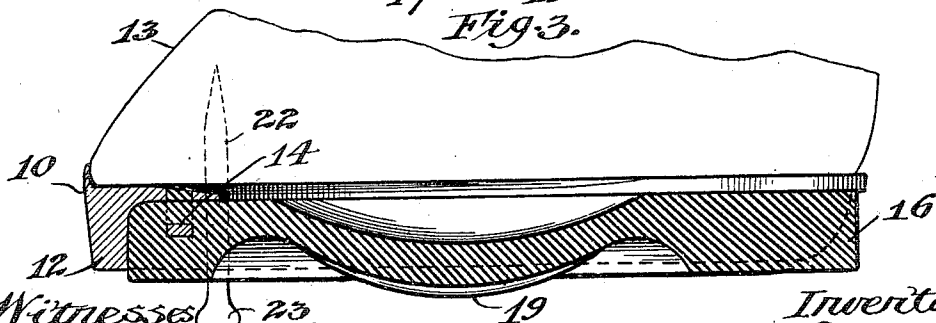
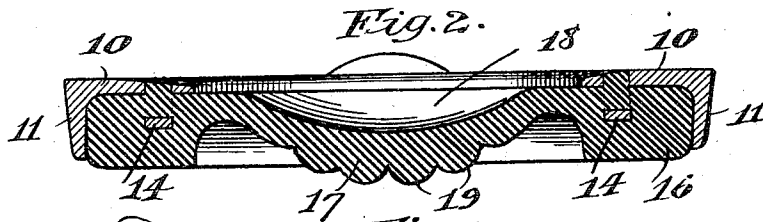
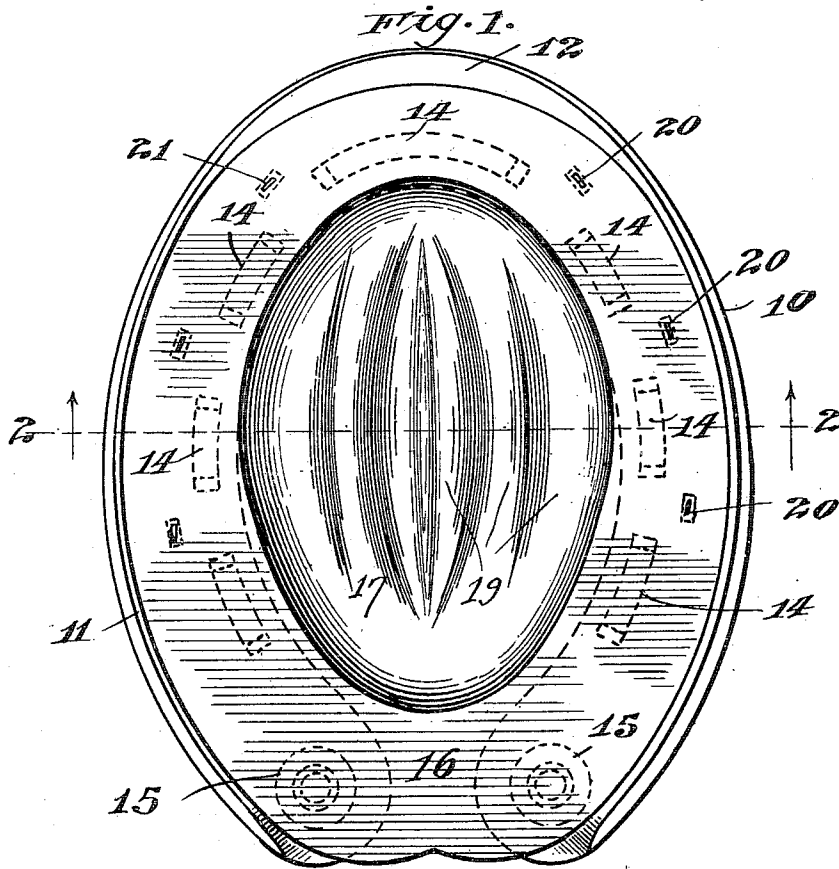
O. E. DYSON.
HORSESHOE.

APPLICATION FILED APR. 11, 1908.

Patented Dec. 27, 1910.

2 SHEETS-SHEET 1.

979,450.



Witnesses
S. D. Mann.
W. M. Fuller

Inventor,
Orion E. Dyson
By *Offield Towle & Luthincum*
Attys.

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Fig. 4.

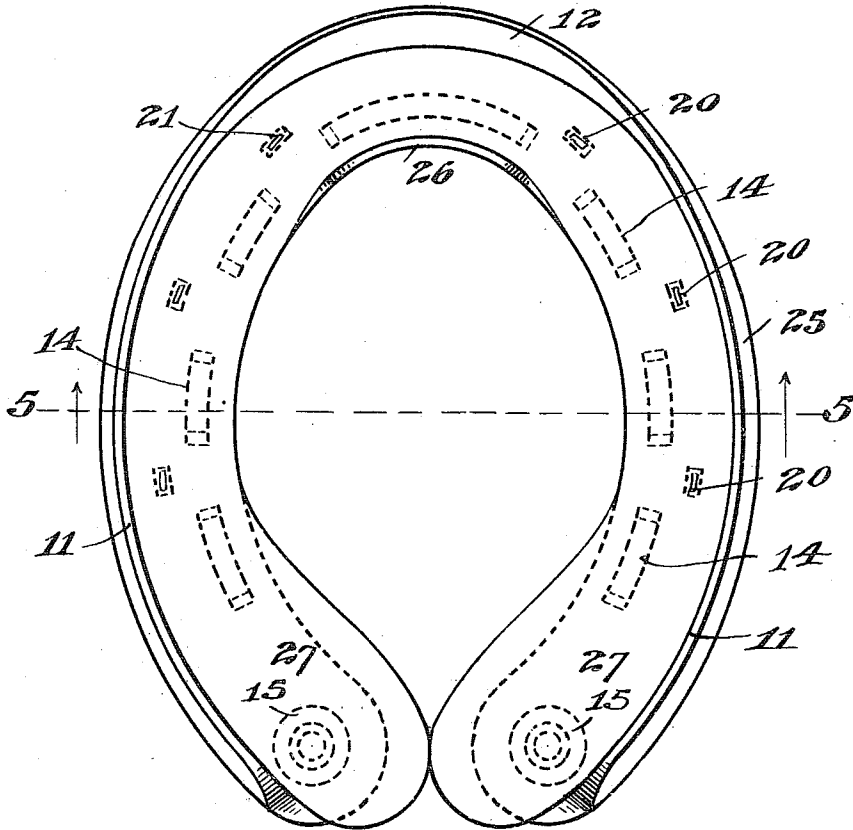


Fig. 5.

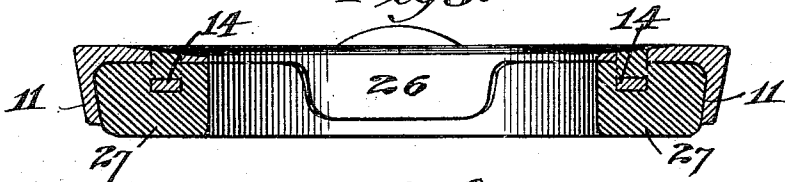
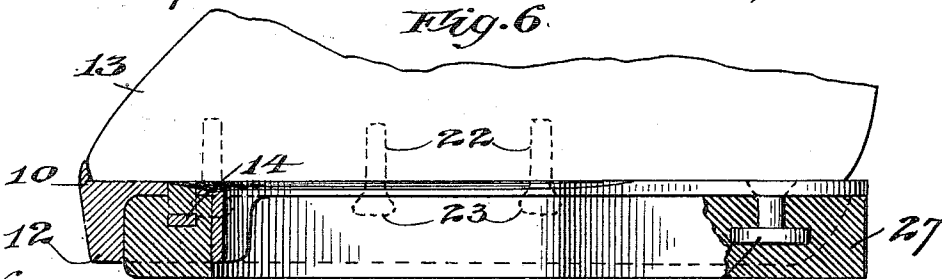


Fig. 6.



Witnesses,
J. Mann
Walter M. Fuller

Inventor,
Orion E. Dyson
By Clifford Towle & Luthman
Attys.

UNITED STATES PATENT OFFICE.

ORION E. DYSON, OF CHICAGO, ILLINOIS.

HORSESHOE.

979,450.

Specification of Letters Patent.

Patented Dec. 27, 1910.

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To all whom it may concern:

Be it known that I, ORION E. DYSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Horseshoes, of which the following is a specification.

My invention relates to horseshoes in general, but concerns more especially or particularly those shoes composed of a metallic shoe proper and an associated pad or cushion.

The main and leading object or feature of the invention is the making of the shoe in such form and of such construction that the mechanical principles involved render the shoe a substitute for and give it the functions with which the unshod hoof of a horse has been endowed by nature. The horse's hoof has an outer wall or horny portion, the function of which is to hold and retain in perfect relation the composite structures of the foot, this outer wall or shell also serving as a wearing surface or portion for the protection of the sole or plantar surface of the foot, also the central resilient and compressible structure consisting of the frog.

My novel horseshoe has a metallic shoe proper with a depending marginal flange or rim representing in function the outer comparatively hard or horny shell of the unshod hoof.

Attached to the shoe in any suitable manner, and confined by the flange or rim so as to prevent any lateral displacement of the same, I provide a rubber or composition pad or cushion, which normally extends below the bottom edge of the flange or rim for the purpose of absorbing the shock of concussion from impact with the unyielding surface of pavements. In addition to being sufficiently compressible so that the wear practically comes upon the confining metallic rim or flange, as is obvious, this cushion performs the office of and acts as a substitute for the soft resilient and compressible frog of the unshod hoof. Therefore the rubber cushion relieves concussion and naturally adheres closely to the surface of the pavement as a result of compression due to concussion and the added weight of the horse, and owing to its elasticity invariably returns to its original form and shape when free from the animal's weight. Consequently, the cushion is always in position to lessen or completely absorb all shocks from concussion, in addition

to preventing slipping on smooth asphalt or ice covered pavements, by insuring a firm and sure foothold.

In the accompanying drawings I have illustrated two preferred and desirable embodiments of my invention.

In these drawings—Figure 1 is a bottom plan view of one embodiment of my improved horseshoe, the same having a full size pad or cushion; Fig. 2 is a cross-section on line 2—2 of Fig. 1 with the shoe in its normal operative position; Fig. 3 is a central longitudinal vertical section through the shoe in the same position, and shows a portion of the hoof and one of the nails partially driven in; Fig. 4 is a bottom plan view of a modified form of shoe embodying my invention; Fig. 5 is a vertical cross-section on line 5—5 of Fig. 4 with the shoe in normal position; and Fig. 6 is a central vertical longitudinal section of the shoe shown in Fig. 4, also illustrating a portion of the hoof and several of the nails after the auxiliary or second head has been broken off.

Referring first to Figs. 1 to 3, inclusive, it will be observed that my combination shoe has a metallic shoe 10, equipped on its outer margin or edge with an integral depending flange or rim 11 thickened at 12 at the toe of the shoe where the latter receives the most wear. The substantially flat horizontal plate portion of the shoe on which the hoof 13 of the horse rests, as is shown in Fig. 3, is supplied with a plurality of integral strips 14 depressed or bowed downwardly out of the plane of this flat plate portion of the shoe, as is shown in Figs. 2 and 3. At the heel of the shoe I provide a pair of headed studs or rivets 15, the construction and arrangement of which are most clearly indicated in Fig. 6. A rubber or composition pad or cushion 16 is molded on the metallic shoe 10 and securely fastened thereto by becoming anchored beneath the strips 14 and beneath the heads of the rivets or studs 15. The portion of this pad or cushion adjacent to and inside of the curved metallic flange or rim 11 extends slightly below the lower edge of this flange or rim, as is clearly indicated in Figs. 2 and 3. At its central portion this pad or cushion is depressed or bowed downwardly at 17, providing a cavity 18 on its upper surface, the outer surface of this depressed portion having longitudinal ribs 19 which extend be-

low the other portion of the pad or cushion, consequently being the first portion or part of the shoe to come in contact with the pavement surface at the end of each stride of a horse so shod. The metallic shoe has a plurality of nail holes 20 located at a sufficient distance from the outer periphery of the shoe so as to insure a firm holding of the shoe to the animal's foot by the nails. The composition or rubber pad is also provided with nail holes corresponding to those in the shoe, through which the double-headed nails can be easily driven. A special form of a horseshoe nail is used for holding this type of shoe on the animal's foot, the nail 22 having two heads 23 and 24, as indicated in Fig. 3. The nail shown in Fig. 3 is only partially driven into the animal's hoof and when it is fully driven home, as indicated in Fig. 6, with the head 23 embedded in the cushion, the outer or end head 24 is broken off.

To those skilled in this art it will be apparent that during the travel of the animal wearing these shoes the bowed central portion 17 of the pad or cushion first strikes the pavement and partially absorbs the shock of impact. This portion of the cushion is compressed during further descent of the animal's foot and shoe, whereupon the outer section of the cushion next engages the pavement, thereby securing a maximum area of contact with the pavement, a practical and essential feature of any shoe to effectually prevent slipping on asphalt pavements. Increased pressure on the shoe, due to the horse's weight being put thereon, causes further compression of substantially the entire cushion, so that the greater portion if not all of the shock of concussion is received and absorbed or dissipated by the cushion. The rim 11, as will be readily understood, prevents outward or lateral expansion of the cushion so that it is necessarily vertically compressed. This compression continues until the flange or rim 11 strikes the pavement, the former acting as a wearing surface to prevent undue wear on the cushion proper. It will be observed that my improved form of shoe has the general structure of the plantar surface of an unshod hoof of a horse, and performs substantially the same function in the same manner. Furthermore, owing to the fact that the cushion is molded on the shoe a secure and effective anchoring of the same is obtained beneath the bowed strips 14 and the enlarged heads of the rivets or studs 15. The metallic shoe 25 shown in Figs. 4, 5

and 6 is substantially like the shoe 10, except that the former is equipped with a comparatively short downwardly-extended rib or wall 26 on the inner margin of the toe of the shoe. The composition or rubber cushion 27 is substantially the same as the cushion 16 except that the central portion thereof is omitted, this cushion 27 being especially adapted for summer wear when there is no tendency or possibility of the foot becoming balled with snow, while the complete cushion or pad shown in Fig. 1 when used in winter effectually eliminates the possibility of such disagreeable occurrences. The curved or skeleton cushion 27 is molded on the shoe as in the previous instance and is fastened thereto in the same manner. The object of the wall or flange 26 is to prevent loosening of the front portion of the rubber or composition pad during turning of the foot on the toe of the shoe.

It should be noted that by employing a combination horseshoe of the type and style illustrated in the drawings and described herein, I attain all of the objects set forth in the first part of this specification, and direct especial notice to the fact that the invention is not limited and restricted to the precise and exact structural features shown and described, because these may be varied within wide limits without departure from the substance and essence of my invention.

I claim:—

1. In a horseshoe, the combination of a metallic shoe having a horizontal plate portion and a downwardly-extended outer marginal rim or flange, and a cushion secured to the under surface of said shoe inside of said rim thereby being kept out of contact with the hoof and comprising a continuous soft tread having a downwardly-bowed central portion extending below the margin of said tread, substantially as described.

2. In a horseshoe, the combination of a metallic shoe having a downwardly extending rim, and a resilient cushion anchored to said shoe within the rim, said cushion comprising a marginal tread portion normally extending below said rim, and a convex central portion extending below said tread portion and made integral therewith at a point below the lower edge of the same, said cushion lying entirely below the shoe, substantially as described.

ORION E. DYSON.

Witnesses:

WALTER M. FULLER,
CLARE L. ROSENOW.