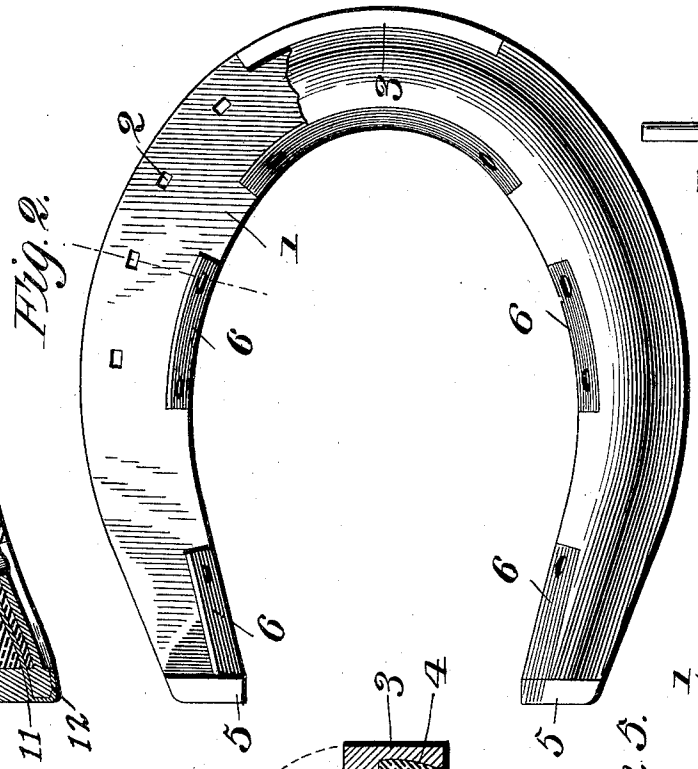
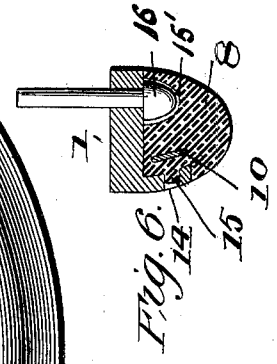
No. 655,628. Patented Aug. 7, 1900.

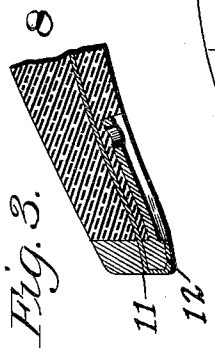
W. M. KENNEDY & R. C. DUNCAN.

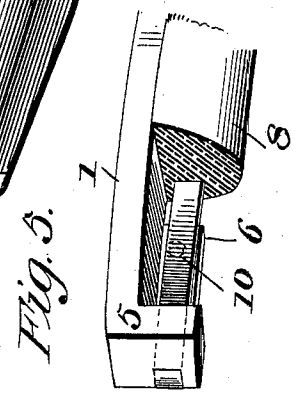
SOFT TREAD HORSESHOE.

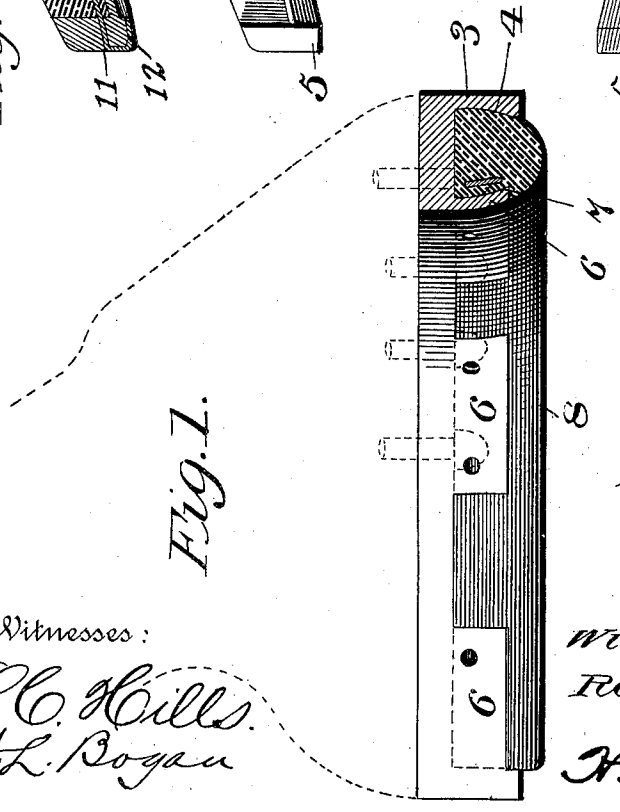
(No Model.) (Application filed Nov. 14, 1899.)

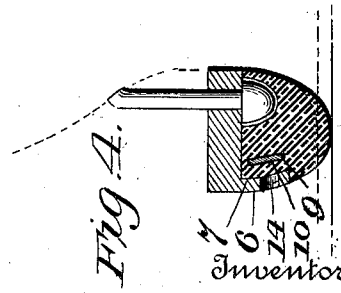












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UNITED STATES PATENT OFFICE.

WILLIAM M. KENNEDY AND ROBERT C. DUNCAN, OF FRANKLIN, PENNSYLVANIA.

SOFT-TREAD HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 655,628, dated August 7, 1900.

Application filed November 14, 1899. Serial No. 736,922. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM M. KENNEDY and ROBERT C. DUNCAN, citizens of the United States of America, residing at Franklin, in the county of Venango and State of Pennsylvania, have invented certain new and useful Improvements in Horseshoes, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in horseshoes in general, and it relates more particularly to that class of horseshoes known as "soft-tread" shoes, in which a tread of rubber or other flexible or resilient material is provided for the purpose of deadening the shock of the iron or steel shoe striking pavements or other hard substances, adhering more firmly thereto than the iron or steel shoe would do, and for various other purposes more specifically set forth hereinafter.

It is the object of our invention to construct a shoe of this character that will be extremely simple in its construction, strong, durable, effectual in its operation, and comparatively inexpensive to manufacture; furthermore, to provide means whereby the resilient tread may be readily detached from the shoe or placed in position thereon when desired.

Briefly described, our invention consists in a metal shoe which is provided around its inner edge with downwardly-extending leaning or curved flanges of less depth than the calks and toe, these flanges being of especial construction and serving to retain the resilient tread in position on the shoe. The tread is preferably composed of a suitable piece of rubber, though other resilient or flexible material may be employed, and is secured to the shoe by passing a flexible band longitudinally through the same and securing said band rigidly at the calks of the shoe.

Various other features of construction enter into our invention, and these will be hereinafter more specifically described and then particularly pointed out in the appended claims, and in describing the invention in detail reference will be had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate similar parts throughout the several views of the drawings, in which—

Figure 1 is a horizontal sectional view of our improved shoe, showing a hoof in dotted lines with the shoe secured thereto. Fig. 2 is an underneath plan view of our improved shoe with the tread partly broken away. Fig. 3 is a longitudinal sectional view of a portion of the shoe. Fig. 4 is a cross-sectional view. Fig. 5 is a perspective view of a part of the metal shoe and tread, showing manner of fastening the latter. Fig. 6 is a cross-sectional view showing a modified form of tread.

Referring now to the drawings by reference-numerals, 1 indicates the shoe, which in its outline or general configuration is the same as that of the ordinary steel or iron shoe, having the usual nail-holes 2 to receive the clench-nails by means of which the shoe is secured to the hoof of the animal. This shoe 1 is provided at its front, on the under side, with a toe 3, the inner face 4 of which is slightly concave in form in order that the tread may be held thereby, as will be hereinafter explained. At its ends this shoe is provided with the calks 5, and on its under face, adjacent to the inner edge thereof, is provided with integral flanges or supports at suitable intervals throughout the length of the shoe. These flanges or supports 6 conform to the curvature of the shoe proper and are slightly leaning with respect to their position to the shoe—that is, they converge slightly outwardly—and the inner face 7 of the same is thus slightly concave in form. We preferably construct the one of these flanges or supports that is opposite the toe 3 of greater length than the remainder of the flanges or supports and also of greater length than the toe in order that additional purchase or seating surface may be provided for the tread at this point. The calks 5, together with the toe 3, are of slightly-greater depth than these flanges or supports in order that when the tread is removed from the shoe they will prevent the flanges or supports from contact with and injury by striking the pavement or other substance.

The tread, as stated, is preferably composed of tough rubber, though other flexible, resilient, or suitable material may be employed, and is cut to a length to fit neatly on the under face of the shoe, with its ends abutting against the inner faces of the calks. This

tread 8 in cross-section resembles the half of an ellipse, the rounded face thereof being downward and the flat face thereof engaging the metal shoe. It is provided throughout its length with an oblong aperture 9, which is preferably placed eccentrically to its center, being nearer to the inner edge, in order that when the securing-band is drawn taut the tread will be drawn firmly into engagement with the concave inner faces of the flanges or supports 6. This oblong aperture 9 is adapted to receive a fastening-band 10, which in cross-section is the same shape as the aperture and which passes longitudinally through the tread and has its ends fastened to the calks 5. To permit of this fastening of the band, the calks 5 are provided with oblong apertures 11, slightly inclined with respect to the calk and registering with the aperture through the tread when the latter is in position on the shoe. The band may be provided with a head on its one end to engage the calk and its other end drawn through the opposite calk and clenched around the same, as shown at 12, the calk where the free end of this band is fastened being recessed, so that when the end of the band is clenched the outer face will be flush with the outer face of the calk or lie within the plane of the same. We may construct the supports or flanges 6 with circular openings 14 and construct the tread with projections 15 to engage into these openings, as shown in Fig. 6, which, besides forming an additional fastening for the tread, also serves to prevent the creeping of the same. However, whether the tread is formed with these projections or without the same we preferably provide the flange or the supports with the circular openings in order that when the pressure is applied the compression of the rubber will cause that portion of the same opposite these circular openings to enter the same, and thus effect the same result as would be attained by the use of the projections. As this tread is compressed by the pressure thereon it is forced between the ends of the flanges or supports and the creeping of the tread thereby prevented, as will be readily apparent. To further assist in the retention of this tread upon the shoe in its proper position, we preferably provide the flat or shoe-engaging face of the tread with recesses 15′ to receive the heads 16 of the nails. These recesses permit the flat face of the tread to lie firmly in engagement with the shoe and also assist in its retention thereon, as well as assisting in preventing the creeping of the tread, as stated.

Should it be desired to remove the resilient tread, as may be desired in the case of driving on dirt roads, the clenched end of the band is released from engagement with the calk and the tread pulled outwardly at this end of the shoe. This withdraws the band from engagement with the calk at this end, and the tread may then be readily lifted out from between the toe and the larger support or flange opposite the same, and by withdrawing the securing-band entirely detached from the shoe proper. If desired, we may construct this securing-band so as to clench at both ends of the shoe in the manner described, and thus obviate the necessity of withdrawing the band from the tread in order to detach the latter from the shoe when desired. It will be noted that such changes as this and others covering slight details of construction may be made without departing from the general spirit of our invention.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A soft-tread horseshoe comprising the metal shoe having calks and toe, a series of flanges formed integral with the shoe at the inner edge of its underneath face, said flanges being of less height than the calks and toe and provided with openings, a resilient tread secured to the underneath face of said metal shoe, and a flexible band eccentrically arranged in said resilient tread with its ends passing through and secured to said calks, as and for the purpose described.

2. A soft-tread horseshoe comprising a metal shoe provided with calks and toe and with a series of apertured flanges of less height than the calks and toe, a resilient tread secured to the metal shoe with its one side engaging the inner faces of said flanges, said tread being provided on its upper face with recesses to receive heads of the nails which secure the metal shoe, and a flexible band passing eccentrically through the resilient tread and calks with its ends secured to the latter, as and for the purpose specified.

3. In a soft-tread horseshoe, the combination with the metal shoe having the calks and toe and provided with a series of apertured flanges, of the resilient tread engaging the underneath face of the metal shoe and provided on its upper face with recesses to receive the heads of the nails which secure the metal shoe, and means arranged within said tread and secured to the calks for retaining the tread in position, as and for the purpose specified.

4. In a soft-tread horseshoe, the combination, with the metal shoe having the calks 5 and toe 3 and a series of apertured flanges 6 with the flange opposite the toe 3 of greater length than the remainder of said flanges, of a resilient tread 8 having recesses in its upper face to receive the heads of the securing-nails for the shoe, and a flexible band eccentrically arranged in said tread with its ends secured to the calks for holding the tread in position, as and for the purpose specified.

In testimony whereof we affix our signatures in the presence of two witnesses.

WILLIAM M. KENNEDY.
ROBERT C. DUNCAN.

Witnesses:
CHAS. SIMMONS,
H. K. BELL.