(No Model.)

W. E. CARMONT.

HORSESHOE.

No. 410,781. Patented Sept. 10, 1889.

Fig. 1ª

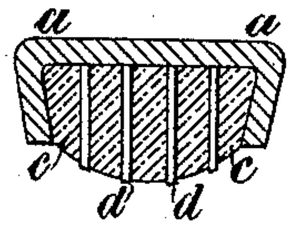


Fig 1

Fig. 1ᵇ

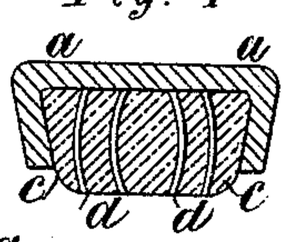


Fig. 2.

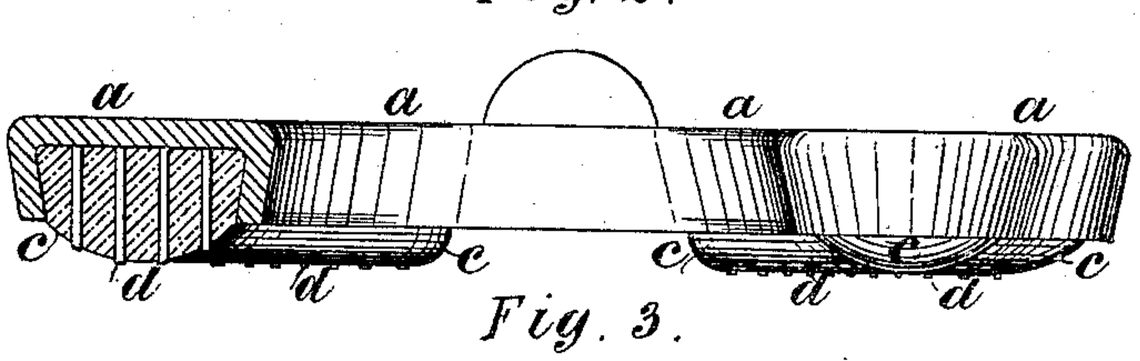


Fig. 3.

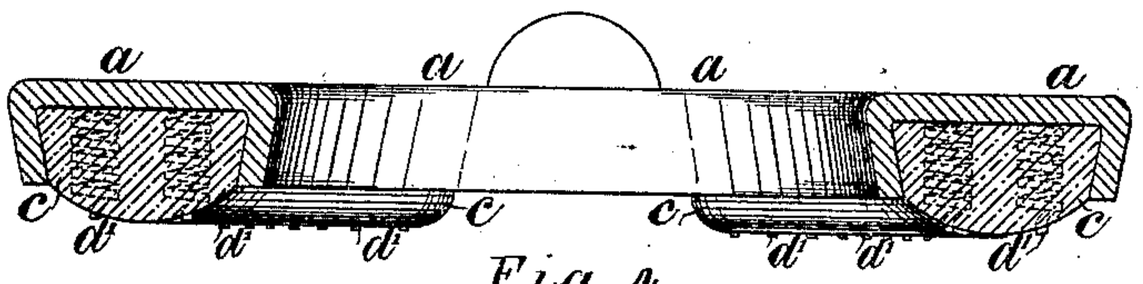


Fig. 4.

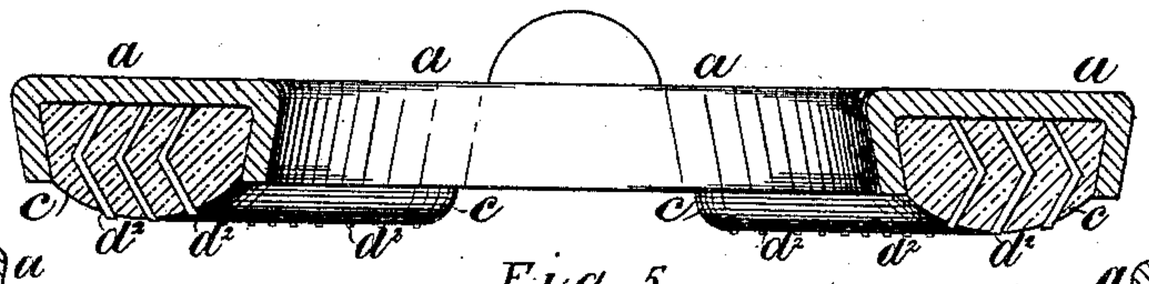
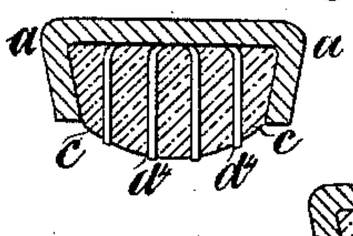


Fig. 5.

Fig. 6.



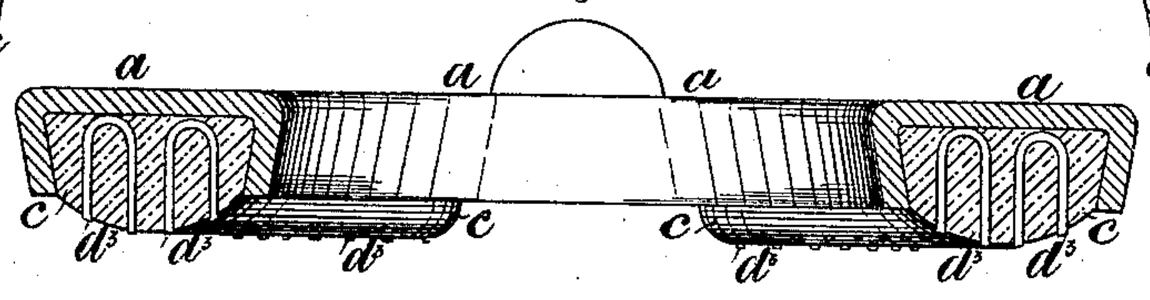
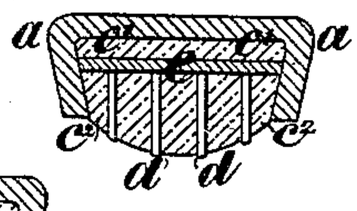


Fig. 7.



Witnesses

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WILLIAM E. CARMONT, OF CATFORD, LONDON, COUNTY OF KENT, ENGLAND.

HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 410,781, dated September 10, 1889.

Application filed July 24, 1888. Serial No. 280,900. (No model.) Patented in England July 28, 1886, No. 9,717.

To all whom it may concern:

Be it known that I, WILLIAM EDWARD CARMONT, engineer, a subject of the Queen of Great Britain and Ireland, residing at Hawthorne House, Catford, London, in the county of Kent, England, have invented certain Improvements in Horseshoes, (for which I have obtained a patent in Great Britain, No. 9,717, dated July 28, 1886,) of which the following is a specification.

My said invention relates to an improved horseshoe which has for its object to prevent slipping and at the same time to provide an elastic cushion or medium protected by metallic and resilient parts from too rapid wear, and intended to absorb or deaden the shocks incidental to the traversing of stone pavements or hard ground. My invention thus serves the double purpose of preventing accidents by slipping and saving the legs of the horse from shocks, whereby its period of usefulness is prolonged.

The improved shoe may be described briefly as consisting of a combination of a suitable elastic or yielding material—such as rubber—combined with metallic springs or elastic pins or parts which are held in their places by the said elastic or yielding material, so as to present metallic and resilient wearing-surfaces, by means of which the rubber is protected from being worn away too rapidly.

And in order that my said invention may be properly understood I will now proceed more particularly to describe the same with reference to the annexed sheet of drawings.

Figure 1 is a plan view of my improved horseshoe. Fig. 2 is partly a section of Fig. 1 at A B and partly an end view. The remaining figures are sections showing modifications in the form of the pins, springs, and parts used in combination with the pads or cushions.

The metal foundation *a* of the shoe is made of iron or steel—cast, pressed, or forged—so as to present the section shown in the various drawings. These sections are preferably slightly undercut or dovetailed, as shown, but the sides might also be straight. In the example selected for illustration the shoe has two compartments divided at the front of the shoe by a block *b*, which is of equal thickness, and is flush with the shoe *a*. I might, however, make the dovetailed or other recess continuous all round the shoe, or it might be divided into several compartments. Each of the recesses in the shoe is fitted with a pad or cushion *c* of rubber, which rests on the bottom of the recess in the shoe and curves outward beyond the level of the shoe, as shown in the various sectional views. The cushions *c* are furnished with tempered-steel pins *d*, the inner ends of which are in contact with the bottom of the recess in the shoe, while the outer ends project very slightly above the level of the cushions *c*, the intention being that when the shoe is in use the tempered-steel pins *d* will first come in contact with the ground and take the major part of the weight and wear, while their sidelong resilience will cause them to recede sufficiently to allow the rubber cushions to touch the ground also, whereby slipping is prevented. For example, the section Fig. 1^a shows the relative position of rubber and springs when no weight is on the shoe, while Fig. 1^b shows the shoe under pressure, the rubber compressed, and the steel springs bending beneath the weight.

By thus combining anti-slipping and elastic material, such as the rubber pads *c*, (which in themselves are insufficient to resist wear,) with the tempered-steel pins *d*, so arranged as to relieve the rubber from the destructive effects of weight and friction, I obtain a shoe which combines the advantages of a soft tread with wearing qualities, such as prevent the cushions from becoming too quickly destroyed.

The pins *d* may be arranged in the cushions *c* as closely together as desirable, and instead of being straight, as shown, they may be inserted diagonally. Fig. 3 illustrates the application of coiled springs *d'*, instead of the straight pins *d*, the said springs *d'* being more resilient than the straight pins. In Fig. 4 the pins d^2 are bent, and in Fig. 5 I employ staples d^3. In Fig. 6 the steel springs d^4 are supposed to have been driven home through the rubber with sufficient force to bend or set up the ends which bear on the bottom of the recess in the shoe, and thus prevent any possibility of the springs dropping out.

Fig. 7 is an example of a modification wherein the rubber or elastic cushion is divided into two portions c' c^2 by a plate or diaphragm e, upon which the inner ends of the pins d, carried by the outer portion c^2, are caused to bear. This arrangement has the effect of conferring more elasticity upon the pins d.

The cushions c might be made of rubber, leather, or other suitable material, or of a combination of rubber and leather. For example, in Fig. 7 the outer portion c^2 of the cushions containing the pins d might be of leather and the inner portion c' of rubber.

In the course of manufacture the rubber is placed in the shoe, the steel pins or springs inserted, and the whole subjected to the vulcanizing process, whereby the rubber is firmly secured to the shoe and the pins or springs in the rubber.

The positions of the nails for securing the shoe to the hoof are marked g in Fig. 1.

I claim as my invention—

1. In horseshoes, the combination, with the shoe having a recess upon its under side, of an elastic pad or cushion fitting and seated in said recess, and resilient pins or wires embedded in and projecting from said pad, substantially as set forth.

2. In horseshoes, the combination, with the shoe having a recess upon its under side, of an elastic pad or cushion fitting and seated in said recess, and bent resilient pins or wires embedded in and projecting from said pad, substantially as set forth.

3. The combination, with the shoe recessed upon its under side, of an elastic pad or cushion in the upper part of said recess, a metallic plate beneath said cushion, a second cushion beneath said plate, and resilient pins embedded in the second cushion projecting therefrom and abutting at their upper or inner ends against said plate, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

W. E. CARMONT.

Witnesses:
DAVID FULTON,
JOSHUA ENTWISLE.