No. 644,329. Patented Feb. 27, 1900.

A. M. MEISNER.

SOFT TREAD HORSESHOE.

(Application filed Mar. 25, 1899.)

(No Model.)

Fig. 1.

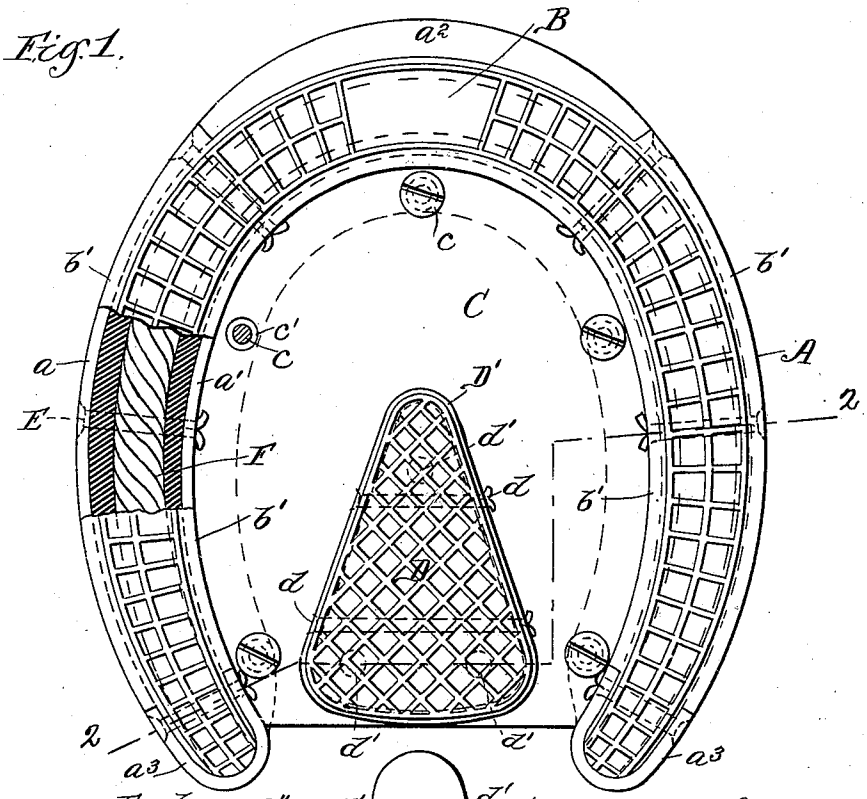


Fig. 2.

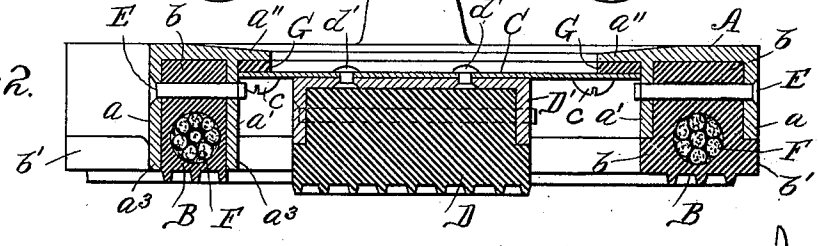


Fig. 3.

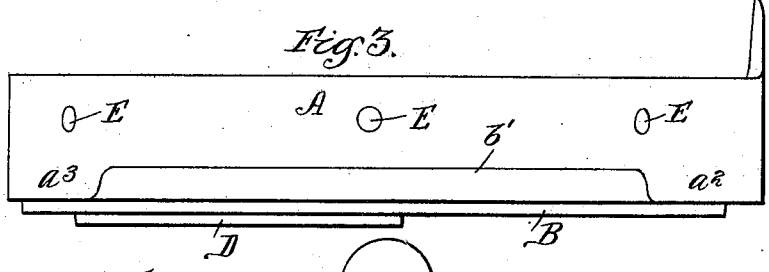
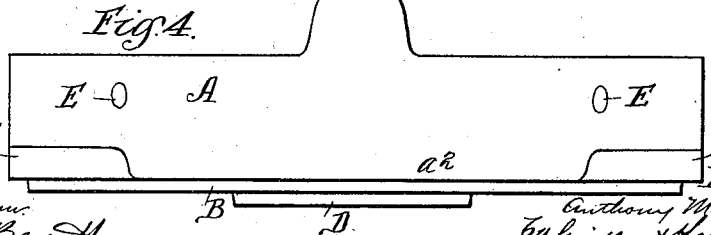


Fig. 4.



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UNITED STATES PATENT OFFICE.

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SOFT-TREAD HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 644,329, dated February 27, 1900.

Application filed March 25, 1899. Serial No. 710,465. (No model.)

To all whom it may concern:

Be it known that I, ANTHONY M. MEISNER, 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 Soft-Tread Horseshoes, of which the following is a specification.

The present invention relates to that class of horseshoes that are provided with soft treads; and the object of the invention is to provide an improved shoe of this class.

To this end the invention consists in the features of novelty that are hereinafter described.

In the accompanying drawings, which are made a part of this specification, Figure 1 is an under side view of a horseshoe embodying the invention. Fig. 2 is a section thereof on the line 2 2, Fig. 1. Figs. 3 and 4 are respectively a side elevation and a front elevation thereof.

The shoe comprises a light skeleton frame A, made of metal; an elastic tread B, secured to the frame; a plate or diaphragm C, also secured to the frame and adapted to completely cover the bottom of the foot within the inner boundary of the frame, and an elastic tread D, so disposed that it will be directly beneath and receive the pressure of the frog. The skeleton frame consists of a casting having a channel in which the body portion b of the tread B fits and is secured by some suitable means, preferably by pins E, that are passed through openings in the depending flanges $a\,a'$ of the frame, the heads of the pins being countersunk in the flange a and their ends being split and spread after passing through the flange a'. The outer flange a is provided at the front with a downward extension a^2, and at their rear ends the two flanges merge in downward extensions a^3, said extensions a^2 and a^3 being continued downward far enough to bring their lower edges substantially flush with the solid portion of the elastic tread B. The elastic tread is provided with horizontal flanges b', which overlap the flanges $a\,a'$ between the projections a^2 and a^3, but which terminate at said projections, so as to leave the faces of the projections uncovered. This I regard as an important departure from the heretofore-existing practice of providing the elastic tread with a continuous flange which overlaps the outer flange of the shoe throughout its entire extent. The objection to this latter construction is that the skuffing of the horse's foot will not only tear the flange at the toe portion theroof, but will have a tendency to rip the tread out of its channel. With the construction shown in the drawings and above described this is not possible, and a further advantage is that it provides a metal bearing at the points of greatest wear and in this way protects and prolongs the life of the elastic tread. Preferably the solid portion of the elastic tread terminates substantially in the plane of the lower edges of the projections a^2 and a^3, and preferably below this plane the tread is provided with projections in the form of intersecting ribs, which are without any substantial supporting strength, but which nevertheless serve to prevent slipping.

So far as the features already described are concerned the tread may be made entirely of rubber; but I prefer to provide it with a core F of some less-elastic material, and for this purpose I prefer to use a piece of tightly-twisted rope, of non-metallic fibrous material, which is embedded in and completely surrounded by the rubber, the rope being disposed quite near the surface of the tread and about central with relation to the sides thereof at any given point. The openings through which the fastening-pins E pass are formed through the portion b of the tread above the core F. The advantages of this core are that it adds materially to the strength and durability of the tread, and in addition to this it provides at the central part of the tread a medium of greater resistance than the rubber, with the result that the central portion of the tread offers greater resistance to compression than the portion at the side thereof. It is found in practice that this tends to prevent the flanges $a\,a'$ from cutting the flanges b' and in this and other ways adds very materially to the durability of the tread.

The skeleton frame is provided also with an inwardly-presented flange a'', to which the plate or diaphragm C is secured by means of screws c, a packing G, of elastic material, being interposed between the plate C and flange a'' for the double purpose of preventing any rattling and of preventing the screws c from

working loose. This flange a'' is located a considerable distance above the plane of the lower face of the shoe, so that the plate C, which is secured to it, is too high for contact with the ground under ordinary conditions. In order to preserve the elasticity of the plate C to a limited extent, the openings c', through which the screws c pass, are somewhat larger than the shanks of the screws.

In addition to the above advantages incident to the use of the plate C it provides convenient means for attaching the auxiliary tread D to the main frame of the shoe. This tread D is independent of the main tread and consists of a block or pad of elastic material secured by pins d or other suitable means in a socket D', the socket being in turn secured to the plate C by means of rivets d'. It is the intention to locate this tread D between the heel portions of the main frame, so that it will be directly beneath the frog of the foot, and it is the intention also to make it approximately the same shape in outline as the frog. The object of this tread D is to relieve the heels of a considerable proportion of the weight and throw it onto the frog, and to this end I prefer to use for the tread D a pad which projects downward to a plane slightly below the plane of the lower face of the main tread B.

What I claim as new is—

1. A soft-tread horseshoe having a skeleton frame provided with depending flanges resulting in a channel, an elastic tread having a portion occupying said channel, and means for securing the elastic tread in place, the outer flange of the frame being provided at the toe with a downward extension terminating approximately in the plane of the lower face of the elastic tread and the elastic tread being provided with flanges which overlap the outer flanges of the frame but which terminate at the downward extension of the toe, whereby the lower edge of said downward extension is left uncovered, substantially as set forth.

2. A soft-tread shoe having a skeleton frame provided with depending flanges resulting in a channel, an elastic tread having a portion occupying said channel, and means for sesuring the elastic tread in place, the flanges being provided at the toe and at the heel with downward extensions terminating approximately in the plane of the lower face of the elastic tread, substantially as set forth.

3. A soft-tread shoe having a frame provided with depending flanges resulting in a channel, an elastic tread having a portion occupying said channel, and means for securing the elastic tread in place, the flanges being provided at the toe and heel with downward extensions terminating approximately in the plane of the lower face of the elastic tread, and the elastic tread being provided between said downward extensions with lateral flanges overlapping the flanges of the frame, substantially as set forth.

4. A soft-tread shoe having a frame, an elastic tread consisting of a body of rubber or similar elastic material, and an elastic core of non-metallic fibrous material embedded in and surrounded by the rubber, and means for securing the elastic tread in place, substantially as set forth.

5. A soft-tread shoe having a frame provided with depending flanges resulting in a channel, an elastic tread having a portion occupying said channel, said elastic tread consisting of a body of rubber or similar elastic material, and an elastic core of non-metallic fibrous material embedded in and surrounded by the rubber, the core being disposed between the depending flanges of the frame so as to extend both above and below their lower edges, and means for securing the elastic tread in place, substantially as set forth.

6. A soft-tread shoe having a frame provided with depending flanges resulting in a channel, an elastic tread consisting of a body of rubber or similar elastic material, and an elastic core of non-metallic rope embedded in and surrounded by the rubber, said core being disposed near the lower face of the tread and between the depending flanges of the frame, and means for securing the elastic tread in place, substantially as set forth.

7. A soft-tread shoe having a frame provided with depending flanges resulting in a channel, an elastic tread consisting of a body of rubber or similar elastic material and an elastic core of non-metallic rope embedded in and surrounded by the rubber, the core being disposed near the lower face of the tread and between the depending flanges, and means for securing the elastic tread in place, the frame being provided at the toe and at the heel with downward extensions terminating approximately in the plane of the lower face of the elastic tread, and the elastic tread being provided with lateral flanges overlapping the outer flanges of the frame and terminating at said downward extensions, substantially as set forth.

8. A horseshoe having an inwardly-presented flange a'' located a considerable distance above the plane of the lower face of the shoe, a plate conforming to the inner contour of the shoe, and means passing through perforations in the plate for securing it to the flange, said perforations being enlarged to preserve the elasticity of the plate, substantially as set forth.

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