S. ELLIS.

ANTISLIPPING HORSESHOE.

APPLICATION FILED AUG. 25, 1915.

1,177,691. Patented Apr. 4, 1916.

Fig. 1.

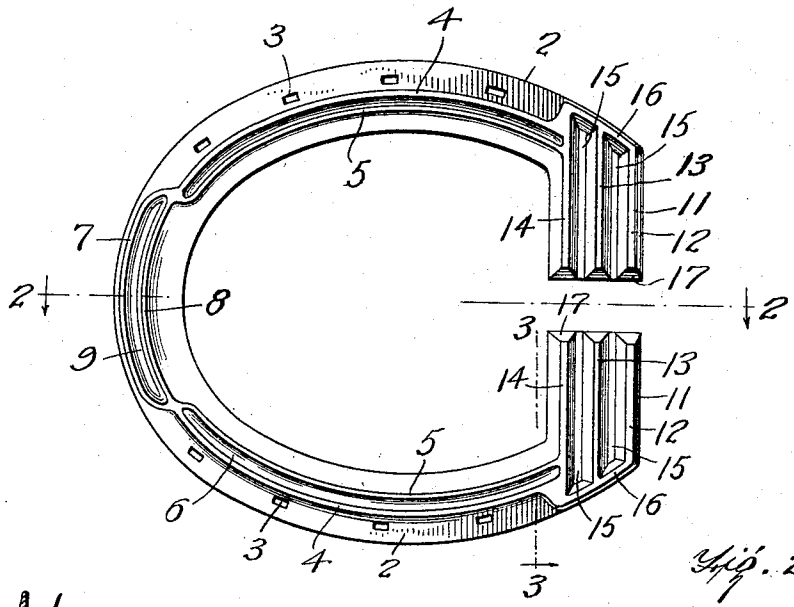


Fig. 2.

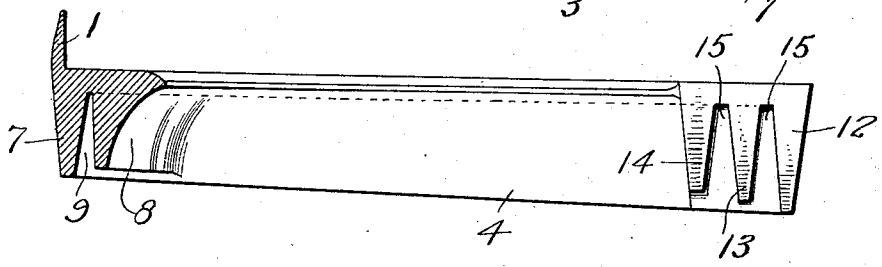
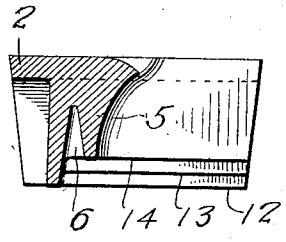


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

STUART ELLIS, OF WASHINGTON, DISTRICT OF COLUMBIA.

ANTISLIPPING HORSESHOE.

1,177,691. Specification of Letters Patent. Patented Apr. 4, 1916.

Application filed August 25, 1915. Serial No. 47,361.

To all whom it may concern:

Be it known that I, STUART ELLIS, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Antislipping Horseshoes, of which the following is a specification.

The object, in general, of my invention is to provide a novel form of anti-slipping horse-shoe, which will dispense with the employment of rubber pads, that are both expensive, owing to the large increase in the cost of rubber in recent years, and soon wear out; which will be simple of construction and easily manufactured; and which will present the maximum of safety to the horse shod therewith.

Other objects, going to make up the ultimate perfection of the entire horse-shoe, will appear as the specification proceeds and the nature of the invention more fully appears.

In the accompanying drawing, I have shown an embodiment of my invention capable of carrying out the underlying principles thereof.

Like reference-characters denote corresponding parts throughout the several views of the drawing, which views may be briefly described as follows.

Figure 1 is a bottom plan view of my horse-shoe; Fig. 2 is a longitudinal sectional view on the line 2—2, Fig. 1; Fig. 3 is a transverse sectional view on the line 3—3, Fig. 1.

Referring, now, in detail to the drawing, the horse-shoe shown in the drawing may be provided with an upward-projecting toe-lug or clip 1, and along the sides of the horse-shoe are horizontal, outward-projecting flanges 2, 2, provided with nail-holes 3 for securing the shoe to the horse's hoof, as usual.

The toe-portion of the shoe comprises two, depending, parallel, longitudinally-curved flanges 7 and 8, wedge-shaped in cross-section, with a groove 9 therebetween, substantially V-shaped in cross-section. While the bottom of the flanges 7 and 8 are shown at different levels in the drawing, they may be on the same level, if desired; and, while I have shown two such toe-flanges, it is evident, of course, that more may be provided, the important point being there shall be more than one.

The heel-portion of the shoe comprises the inward-projecting, frog-pressure extensions 11, 11, which are spaced apart at their inner ends, as shown in Fig. 1, and comprises, also, depending flanges 12, 13 and 14 carried by and extending longitudinally of the extensions 11, 11, each of said flanges being wedge-shaped in transverse section. The bottoms of each of the series of flanges 12, 13 and 14 are at different levels, as shown; but it is obvious, of course, that they may be on substantially the same level, the important point being that there shall be more than one of such flanges. It is advantageous, however, to have the bottoms of such flanges at different levels, as shown in the drawing. The outermost flange 12, of each extension 11, is the longest or deepest flange, the next flange 13 being of lesser length, and the third flange 14 being of still lesser length. Between each of said flanges is a groove 15, which is closed at the outer end by a ridge 16 and open at the opposite end, as shown in Fig. 1, for the discharge of ice and snow at such open end. The ends of the flanges 12, 13 and 14 are preferably beveled, as shown in Fig. 1, and the ridge 16 is, also, wedge-shaped, or tapering, in transverse section, so as to form a gripping or biting edge. The flanges 12 constitute primary heel anti-slipping means, while the flanges 13 and 14 constitute secondary or auxiliary heel anti-slipping means. The height of the heel-portion of the shoe is, as shown in Fig. 2, greater than that of the toe-portion.

Extending along each of the sides of the shoe are depending, longitudinally-curved flanges 4 and 5, constituting the treads, which are, in transverse section, wedge-shaped, as shown in Fig. 3. The flanges 4 constitute primary anti-slipping means for the sides of the shoe. At the bottom, the flanges 4 and 5 should be of the same width, and are made with a view both to presenting the necessary strength and resistance against breaking and, at the same time, the requisite degree of sharpness to insure that they shall grip or bite into the ice and hard-packed snow, over which the horse may travel. Flanges 4 and 5 slope longitudinally, *i. e.*, are inclined longitudinally, as shown in Fig. 2, from the heel to the toe of the shoe, and the bottoms of the flanges 4, 7 and 12 are on the same level.

It should be noted that the auxiliary flanges 5, 5 preferably terminate short of the bottoms of the primary flanges 4, 4, as

shown in Fig. 3; whereby, as the primary anti-slipping side-flanges 4, 4 wear down until the bottoms thereof are level with the bottoms of the flanges 5, 5, the latter become operate to bite into the ice or hard-packed snow, to prevent slipping. While I have shown the bottoms of the flanges 4 and 5 in different horizontal planes, it is sometimes preferred to have them in the same horizontal plane, *i. e.*, to have the bottoms of said flanges on a level. And, while I have shown two flanges 4 and 5 on each side of the shoe, it is evident, of course, that more may be employed, the important point being that there shall be more than one flange on each side of the shoe. The bottom of flanges 5, 8 and 13 should be on the same level. Between each pair of flanges 4 and 5 is a groove 6, substantially V-shaped in transverse section, as shown in Fig. 3.

All of the anti-slipping flanges described, both at the toe, heel, and sides of the horse-shoe, coöperate to prevent slipping, in any direction, of the horse shod therewith.

While I have described with some particularity a concrete embodiment of my inventive ideas, it should be understood that departures may be made, within the scope of the appended claims without sacrificing the spirit of the invention, or any of its advantages.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In an anti-slipping horse-shoe, rigid wedge-shaped tread-flanges carried longitudinally at the sides thereof, and inward-projecting frog-pressure heel-extensions carrying longitudinally thereof wedge-shaped flanges.

2. In an anti-slipping horse-shoe, wedge-shaped tread-flanges carried longitudinally at the sides thereof, the free ends of said flanges being in different horizontal planes; wedge-shaped toe-flanges, the free ends thereof being, also, in different horizontal planes; and inward-projecting, frog-pressure heel-extensions carrying longitudinally thereof wedge-shaped flanges, the free ends thereof being in different horizontal planes.

3. In an anti-slipping horse-shoe, rigid wedge-shaped toe-flanges, wedge-shaped tread-flanges carried longitudinally at the sides of the shoe, and inward-projecting, frog-pressure heel-extensions carrying longitudinally thereof wedge-shaped flanges.

4. In an anti-slipping horse-shoe, a toe-portion comprising wedge-shaped toe-flanges; a heel-portion higher than the toe-portion, and comprising inward-projecting, frog-pressure heel-extensions carrying longitudinally thereof wedge-shaped flanges; and wedge-shaped tread-flanges carried longitudinally at the sides of the shoe and sloping from the heel to the toe of the shoe.

5. In an anti-slipping horse-shoe, a toe-portion; a heel-portion higher than the toe-portion, and comprising inward-projecting, frog-pressure heel-extensions carrying longitudinally thereof wedge-shaped flanges; and primary and secondary, wedge-shaped tread-flanges carried longitudinally at each side of the shoe, both of said flanges sloping from the heel to the toe of the shoe.

In testimony whereof I affix my signature in presence of two witnesses.

STUART ELLIS.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."