April 16, 1940. J. WHEELER ET AL 2,197,166

ANIMAL SHOE AND THE LIKE

Filed July 31, 1939

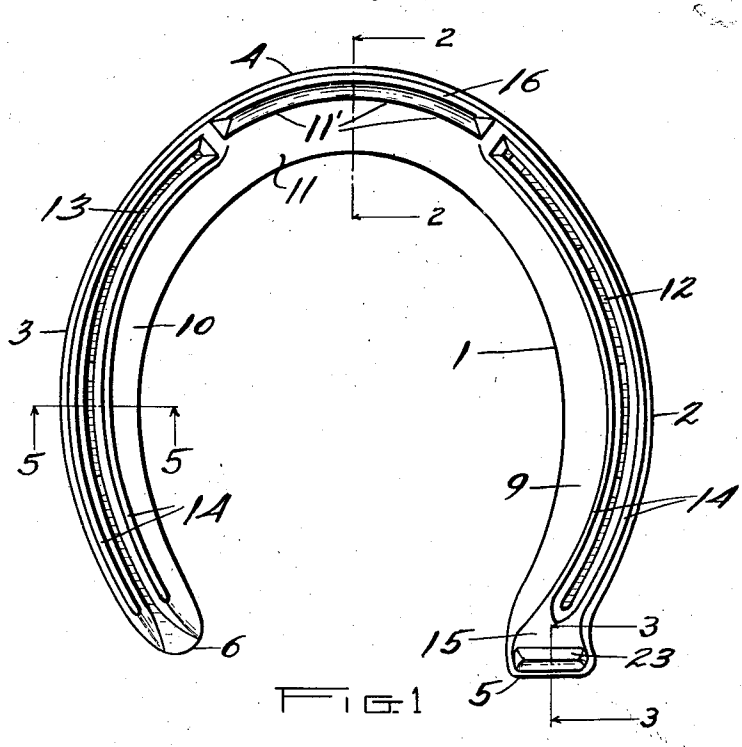


FIG. 1

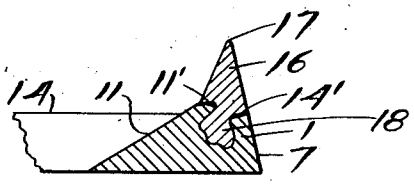


FIG. 2

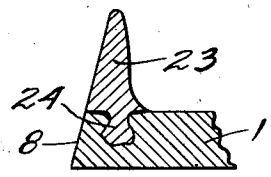


FIG. 3

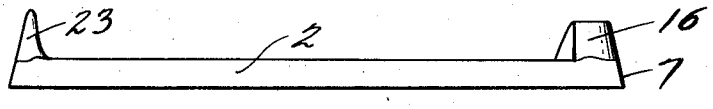


FIG. 4

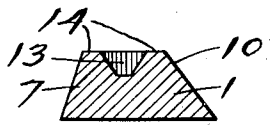


FIG. 5

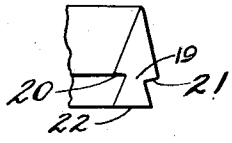


FIG. 6

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Patented Apr. 16, 1940

2,197,166

UNITED STATES PATENT OFFICE

2,197,166

ANIMAL SHOE AND THE LIKE

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Application July 31, 1939, Serial No. 287,474

3 Claims. (Cl. 168—4)

This invention relates to a new and novel horseshoe and the like wherein the parts of the shoe which receive the greatest wear and tear are provided with a hard and durable metal or composition of matter, whereas other parts of the shoe are made of light weight material having sufficient strength to hold the shoe together and also to provide a reasonable amount of durability.

The light weight material may be metal such as aluminum and various alloys containing aluminum whereas the inserts, particularly the grabs and/or caulks, are preferably hard steel.

An object of the invention is to provide light weight shoes for animals, particularly race horses, which are provided with caulks of hard material to withstand the wear and tear thereof.

Another object is to present an extremely light weight shoe for animals in which the caulks thereof are made of very durable material and are keyed into the body of the shoe by high pressure and heat.

A still further object is to provide very light and durable shoes for race horses which are economically made and designed.

Other objects, advantages and features of my invention will appear from the accompanying drawing, the subjoined detailed description, the preamble of these specifications and the appended claims.

Applicants are about to illustrate and describe one of the forms of their invention in order to teach one how to make, use and vend the same, but it is to be understood that the drawing and description thereof are not to limit the invention in any sense whatsoever, except as limited by the appended claims.

In the drawing:

Fig. 1 shows the invention in inverted plan view.

Fig. 2 shows a section thereof substantially on the line 2—2 of Fig. 1, enlarged to show the details clearer.

Fig. 3 is another enlarged section taken substantially on the line 3—3 of Fig. 1.

Fig. 4 is an elevational side view of the invention.

Fig. 5 is a section taken substantially on the line 5—5 of Fig. 1, enlarged.

Fig. 6 shows a part of the invention in elevation, enlarged.

The body of the shoe, shown in the drawing, is indicated by the reference character 1 in the form and contour of a ring shoe for the right rear of race horses and the like. Aluminum and its various alloys are preferred as the material for the body 1 of the shoe although it is well within the purview of this invention to cast and form the body from other suitable materials such as reenforced plastics and the like. Since metal is the common material used for such purposes, applicant prefers to form the body of the shoe from the lightest metallic materials available. Besides aluminum, "Duralumin" etc., metallically reenforced plastics such as "Bakelite," etc., may be used.

The body of the shoe has a left runner 2 and a right runner 3 joined integrally together by the toe section 4. The left and right runners terminate in points 5 and 6 respectively at the heel of the shoe. The outer edges of the runners and toe section are sharply bevelled as clearly shown at 7 in Figs. 2, 4 and 5 to avoid lift friction; the heel point 5 is also sharply bevelled as clearly indicated at 8 in Fig. 3.

Along the inner edges of the runners 2 and 3, are bevelled surfaces 9 and 10 which have a varying slope, relatively steep near the points but lessening near the toe where they taper into a more gentle slope 11, note Fig. 2. This slope 11 forms a high surface 11'. See Figs. 1 and 2.

Each runner 2 and 3 is provided with a groove 12 and 13 respectively, which stretch along the longitudinal axis thereof from near the toe of the body to the heel thereof. The groove 12 is walled at its ends whereas the groove 13 is walled at its toe end and open at the other end where it slopes to the point 6. The walls of the grooves are bevelled as shown, note in particular Fig. 5 to avoid holding pieces of sod and clay. Along the floor of the grooves are a plurality of nail holes to provide ready means for affixing the shoe to the hoof of the horse in the usual manner. Between the longitudinal edges of the runners are high strips of surfaces 14, the inner strip of said surfaces terminating at the toe end of the grooves and the outer continuing around the toe at 14' to meet the similar surface on the other runner; such surfaces in the runner 2, however, at the point thereof, forming a broad surface 15.

In the toe section of the body 1 of the shoe is provided an insert, grab or caulk 16 slightly curved along its longitudinal sides to conform with the outer profile of the toe. This caulk protrudes well above the surfaces 14 and tapers upwardly from a somewhat broad base to an edge 17. The ends of the caulk are bevelled as shown. The outer surface of the caulk is configurated

to continue the slope of the body 7, the inner surface has a similar slope.

The caulk 16 is provided with an integral elongated tongue or key portion 18 which is substantially the length of the caulk and also has substantially the same curvature. The key is reduced in cross-sectional size at 19 and forms elongated under surfaces 20 and 21, as shown, but is enlarged at its base to present a keystone-like shape in cross-section. Fig. 6 shows the caulk and its integral key before it is forged into position in the body of the shoe. A caulk 23 is also provided for the heel of the shoe, its rear side being bevelled to agree with the slope 8 of the body and its forward side being shaped substantially as shown. This caulk also has a key or tongue 24 which is manufactured into a keystone-like figure and shaped substantially the same as that shown for caulk 16 in Fig. 6.

The caulks are forged into the body of the shoe while they are hot so as to make a very secure keystone-like lock between them while the body is in a semi-plastic state. The caulks are held in a heated die configurated to form the shoe; a forging head holds a semi-plastic bar of aluminum, or whatever metal from which the shoe is to be made, and under a ton or more of pressure die casts the caulks into the body of the shoe. After such an operation, the keys take on the cross-sectional appearance shown at 18 and 24 of Figs. 2 and 3 respectively. A grinding and polishing operation follows.

Having thus described our invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In a horse shoe and the like having a body, said body having a toe section and points, an insert having a keying portion, said portion being embedded in the section so as to hold the insert in a downward protruding position with respect to the toe section of the shoe, the toe section having a sharp slope along its outer side and a relatively gentle slope along its inner side, said insert having a sharp slope along its outer side in alinement with and in continuation of the outer slope of the said section.

2. In a horse shoe designed for fast stepping with the least friction, the shoe having a ring-like body with toe and heel sections connected by runners, said body consisting of light weight material, hard steel caulks attached to said sections and having keystone-like tongues embedded therein, bevelled grooves longitudinal of said runners, one of the grooves having an open end, said open end being curved and flared outwardly, said sections having a bevelled outer face, said caulks having outer bevelled faces in alinement with and continuing the bevelled faces of the sections.

3. In a horse shoe having an aluminum alloy body, said body having a toe section and points connected together by runners, an elongated and curved steel caulk having a keystone-like tongue embedded in the toe section, another steel caulk having a keystone-like tongue embedded in one of the points, said toe section and its caulk having alined and sharp slopes at the outer side of the shoe, a relatively gentle slope on the inner side of the toe section and a sharp slope along the inner side of the caulk, the latter two slopes meeting to form an extremely wide obtuse angle, said other caulk at one of the points having steep slopes around its sides, two opposed slopes thereof terminating into a small rounded ridge.

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