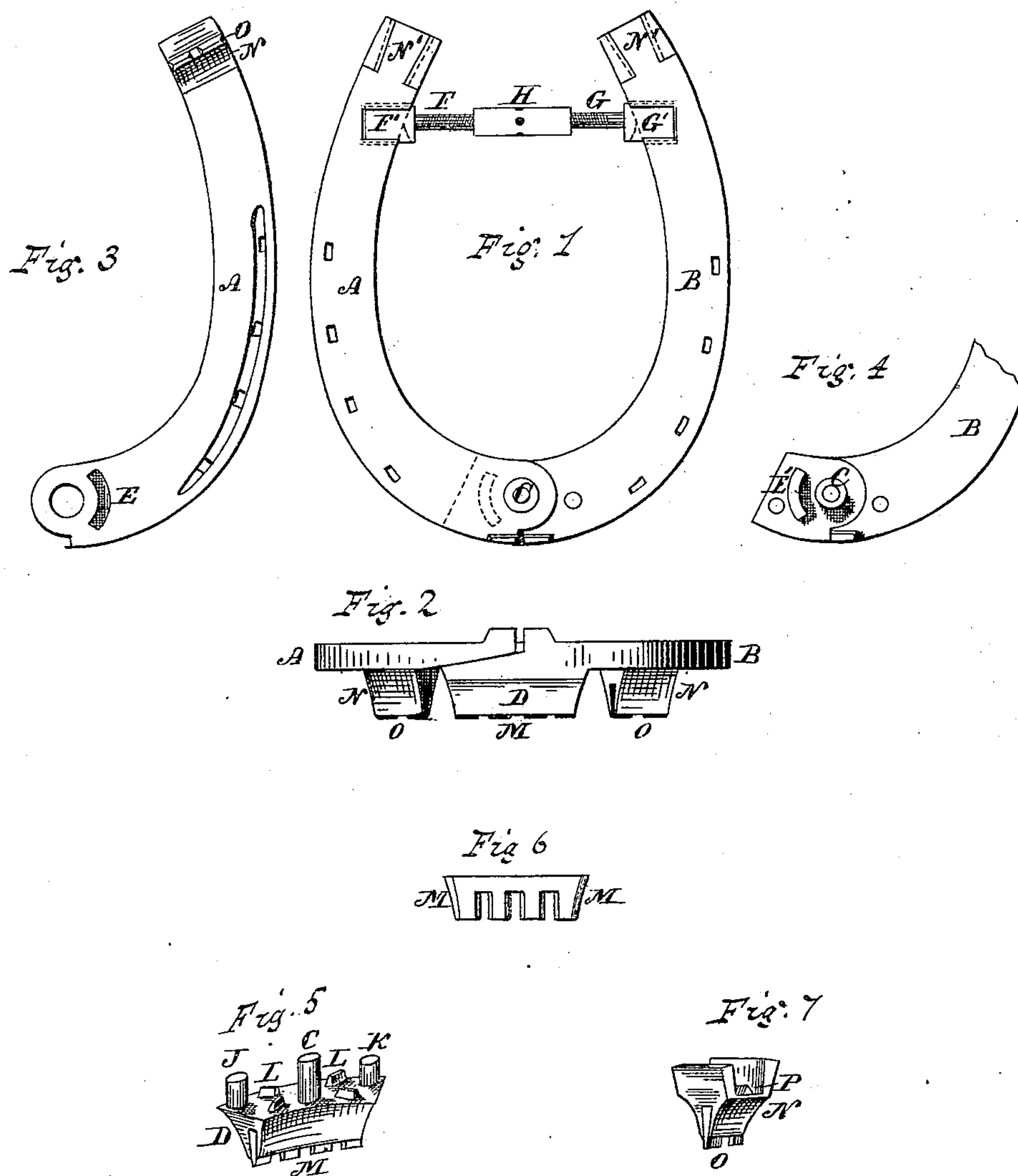


(No Model.)

E. A. HILLS.
HORSESHOE.

No. 246,505.

Patented Aug. 30, 1881.



Witnesses
Amos R. Curtis
Wilnot Horton

Inventor
Edwin A. Hills
by Theo. G. Bliss, Attorney

UNITED STATES PATENT OFFICE.

EDWIN A. HILLS, OF WETHERSFIELD, CONNECTICUT.

HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 246,505, dated August 30, 1881.

Application filed January 13, 1881. (No model.)

To all whom it may concern:

Be it known that I, EDWIN A. HILLS, of Wethersfield, in the county of Hartford and State of Connecticut, have invented certain
5 new and useful Improvements in Horseshoes; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the
10 accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

My invention relates to horseshoes, particularly those which are jointed at the toe in order to make them expansible and adjustable. The objects of my invention are, to provide
15 a stronger joint at the toe; to furnish a better and cheaper device for spreading the heels when required; also, to provide a better construction and attachment for the toe and heel calks than has heretofore been in use.

In the accompanying drawings, illustrating my invention, Figure 1 is a top view of my improved horseshoe. Fig. 2 is a front view of the same. Fig. 3 is a view of the under side of the half of the shoe nearest to it in Fig. 1. Fig. 4 is a top view of the part forming the joint of the half of the shoe next to it in Fig. 1, with the other half removed. Figs. 5, 6,
25 30 and 7 are views showing the details of the construction of the calks.

A and B are the two parts of the shoe. They are jointed at the front in the usual manner, and turn on a pin or rivet, C, which, in the present construction, also forms an attachment for the toe-calk D. The joint as commonly constructed having been found to wear upon the rivet, I provide the following-described additional bearing and strengthening device:
35 40

E is a socket in the part A of the shoe, and E' is a projection or tenon upon the part B. The tenon E' fits into the socket E, except being a little shorter, so as to allow of some circular movement, and takes a part of the bearing of the joint. This socket and projecting rib are shown in the drawings as forming only a part of a circle; but they can be made smaller in diameter and make a complete circle around
45 50 the joint, if desired.

F and G are two screws, having right and

left threads, and are connected by the coupling H, by turning which the screws can be simultaneously moved in or out. The screws are provided with heads F' and G', which fit
55 into sockets in the sides of the shoe and bear against them, so as to separate them forcibly when desired. This device is to be used in the ordinary manner for the cure or prevention of contracted hoofs, and is generally attached
60 when the horse is not in use. It can be removed from the shoe at will by turning the screws into the coupling.

The sockets in the shoe for the reception of the ends of the screws are constructed as follows: The shoe is intended to be made of malleable iron or struck in dies of forged iron. The socket is a simple recess in the top of the shoe, made with raised flanges or lips upon the sides, which are afterward turned down upon the
65 70 flat ends F' and G' of the screws, so as to hold them in place. It will be observed that this form of socket can be readily molded and cast without a core, or can be easily struck in dies, having no re-entrant parts until the lips are
75 turned down. The whole expanding device is easily constructed and much cheaper than those heretofore in use. The screws are easily made, and the coupling can be constructed from a piece of ordinary pipe, dispensing with
80 all machine-work except cutting the threads.

D is the toe-calk. It is furnished with the pin C, which serves as a pivot for the hinge of the shoe. It also has the two pins J and K, which pass into sockets in the two sides of the
85 shoe, and are riveted in place to give greater strength. These pins form part of the calk.

L are tenons or projections fitting into corresponding recesses or sockets in the shoe. When three pins are used, as shown in the
90 drawings, they may be omitted; but where only a central pin is formed upon the calk they serve to prevent a turning or displacing of the calk.

M is a hardened-steel interior part of the calk. It is formed with the upper part the thickest, in a wedge shape, as shown in the drawings, the better to retain it in its place. It is also made in a series of teeth, as shown in Fig. 6, and these teeth are made narrower on the front than on the rear edge, so as to give a better
95 100 hold on ice or a slippery road. It is intended to make the outer part, D, of the calk of mal-

leable or forged iron, formed with an opening, into which the steel is inserted, and then the whole is struck in a die, so as to clip and hold the steel plate M. It is not intended to use
 5 sufficient heat to destroy the temper of the steel. The steel then being harder than the iron, the teeth are left projecting as the calk wears down.

N is the iron part of one of the heel-calks, and O is a steel interior, inserted in the same manner as described for the toe-calk. For the purpose of attaching the heel-calk the rear end of each side of the shoe is made of a dovetail form, as shown in Fig. 1 at N', in which the
 15 dovetail inclines both ways, spreading both outward and downward, so as to prevent the calk from slipping either off the end of the shoe or downward. The calk is cast or forged with the opening to embrace the dovetails spread
 20 so as to easily slip on. It is then set fast on the dovetailed projection by being struck in a die, which closes the sides together.

P is a tenon fitting into a corresponding recess in the bottom of the shoe, and assists in
 25 holding the calk in place.

What I claim as my invention is—

1. The socket E and the projection E', in

combination with the joint of a hinged horse-shoe, substantially as described.

2. A horseshoe-calk composed of an exterior 30 soft-iron portion, D, and an interior hardened-steel portion, M, composed of separate teeth, substantially as described.

3. The steel interior part of the calk M, formed of a series of teeth having beveled edges, sub- 35 stantially as described.

4. In a horseshoe constructed of two overlapping parts hinged together, the pins C J K, integral with the part D of the toe-calk, adapted to hold the toe-calk on the shoe, and 40 the middle one constituting the pintle of the hinge, substantially as described.

5. In a horseshoe, the dovetailed attachment for the heel-calk N N', constructed and arranged substantially as described. 45

6. In the heel-calk of a horseshoe, the projection P and its corresponding socket in the bottom surface of the shoe, in combination with the dovetailed attachment, substantially as described.

EDWIN A. HILLS.

Witnesses:

THEO. G. ELLIS,

HENRY A. DEMING.