

No. 614,273.

Patented Nov. 15, 1898.

J. W. OUTLAW.
HORSESHOE.

(Application filed Feb. 3, 1898.)

(No Model.)

Fig. 1,

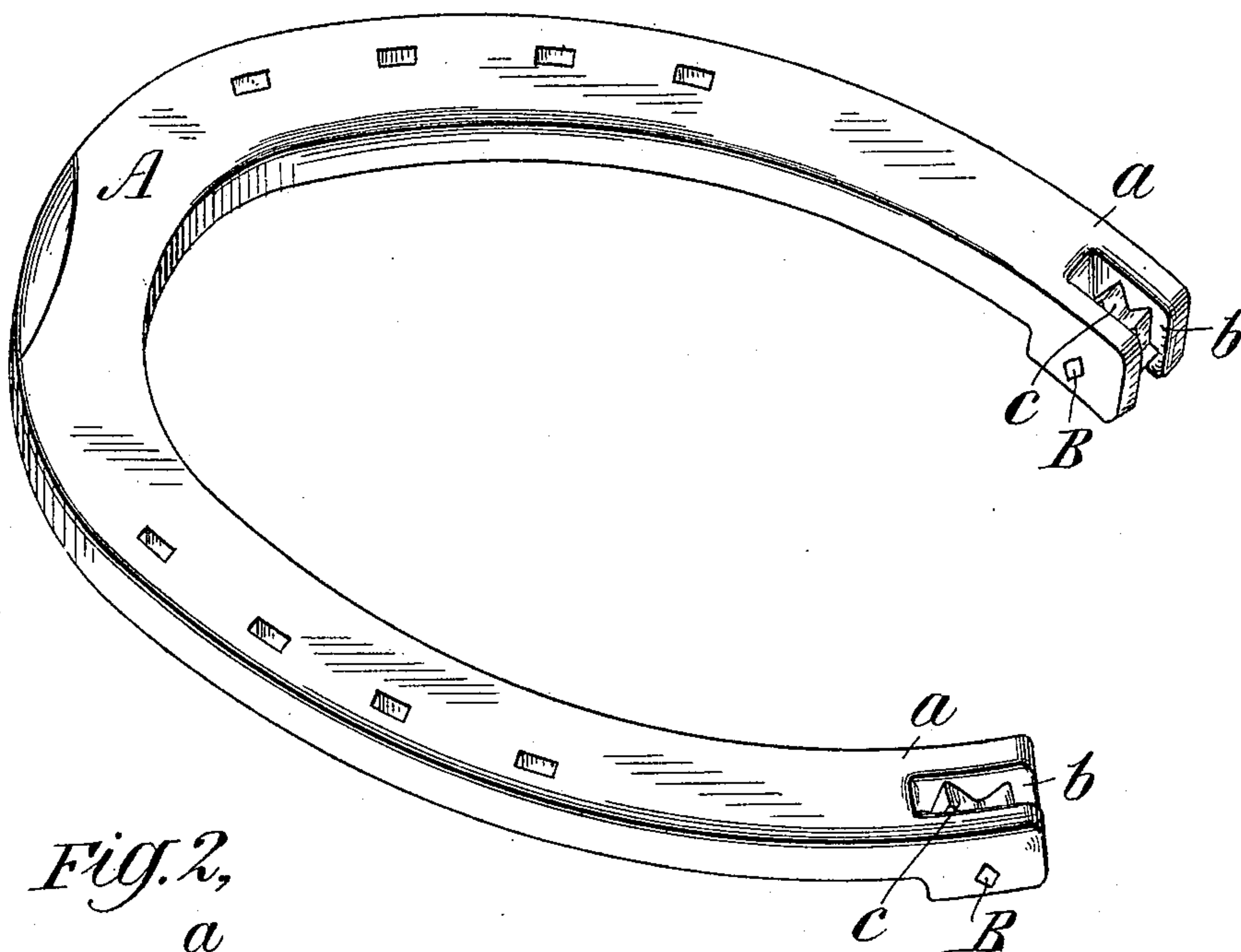


Fig. 2,

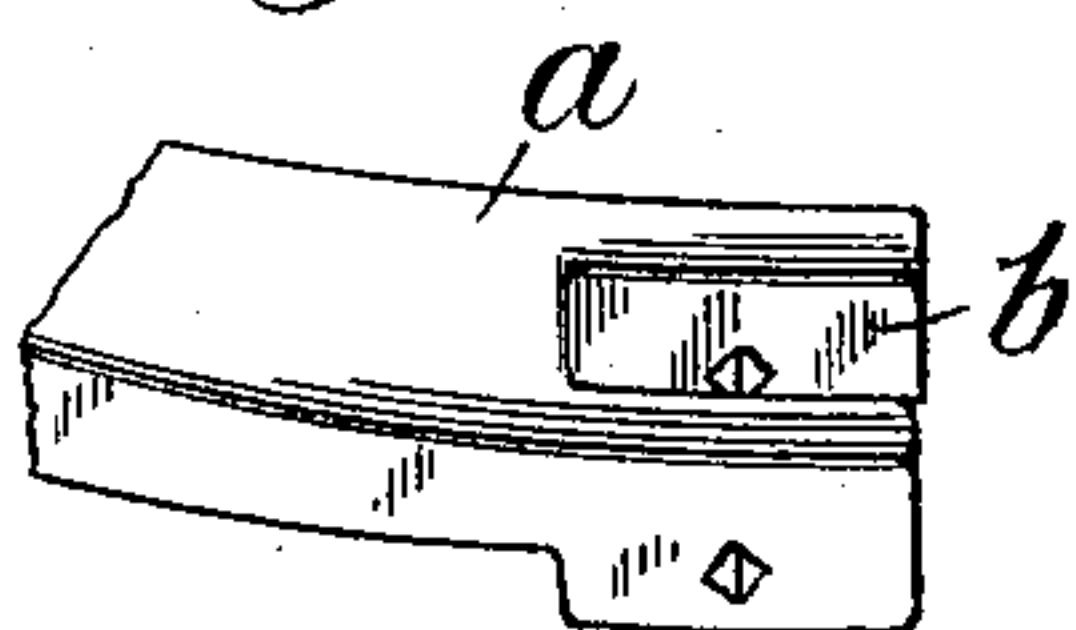
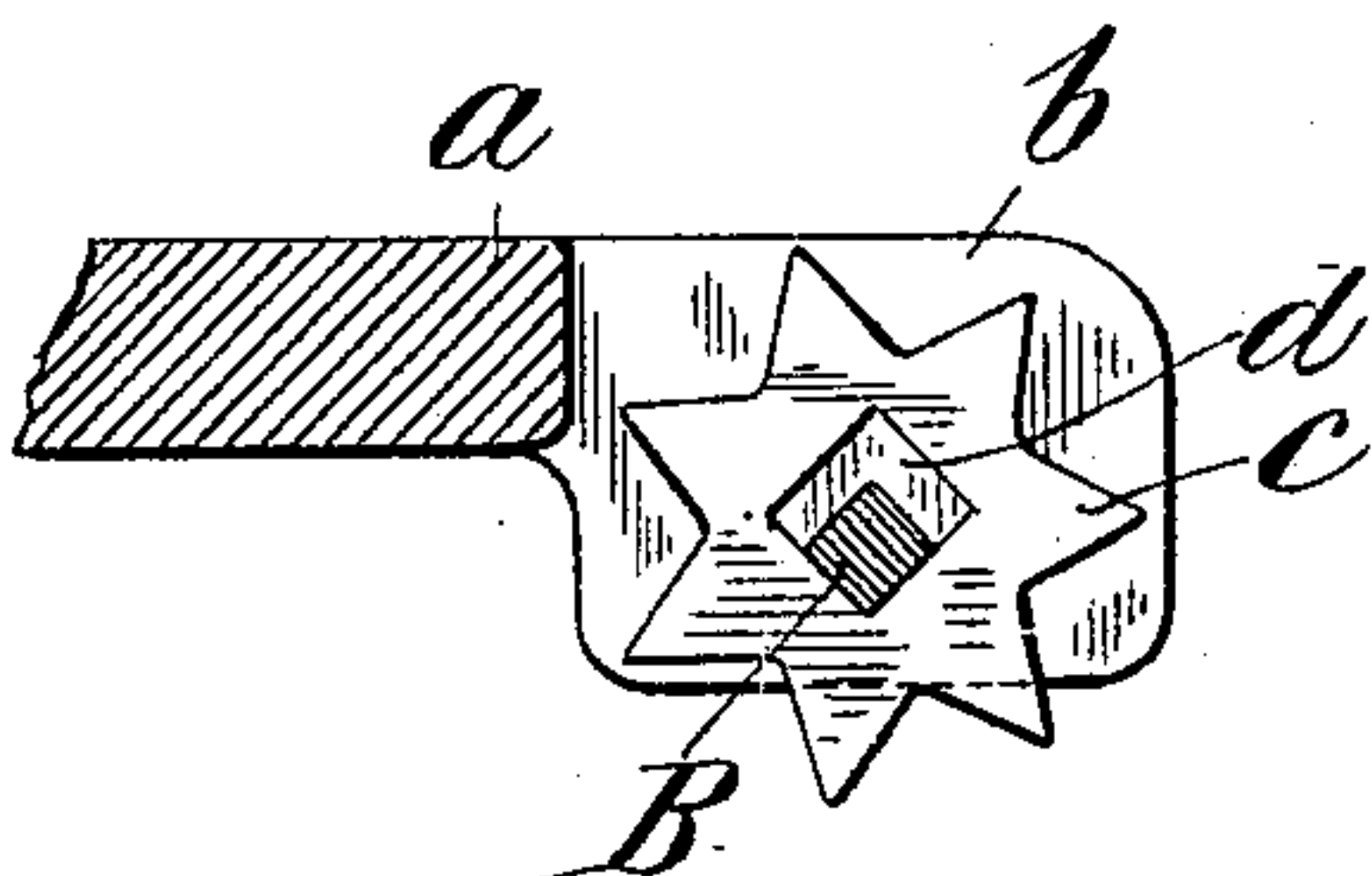
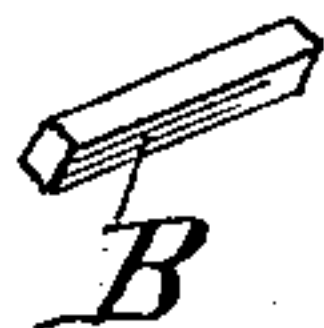


Fig. 3,



WITNESSES:

J. C. Hornel
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INVENTOR

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BY
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UNITED STATES PATENT OFFICE.

JOHN W. OUTLAW, OF NEW YORK, N. Y., ASSIGNOR OF ONE-FOURTH TO
CELINDA PORTER ROBINSON, OF SAME PLACE.

HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 614,273, dated November 15, 1898.

Application filed February 3, 1898. Serial No. 668,961. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. OUTLAW, of New York city, in the county and State of New York, have invented certain new and
5 useful Improvements in Horseshoes, of which the following is a full and exact description, reference being had to the accompanying drawings, which form a part of this specification.

10 This invention relates to an improvement in horseshoes, and is designed especially to secure a better foothold for horses on smooth or slippery pavements.

In the drawings, Figure 1 shows in perspective a horseshoe made according to my
15 invention, with a toothed roller in each heel. Fig. 2 shows one roller with its axle removed from the shoe, the better to show its construction. Fig. 3 shows one heel of a shoe
20 partly broken away.

Similar letters refer to similar parts in the different figures.

Referring to the drawings, A is a horseshoe made in the ordinary way. The heels *a a* are
25 made rather thicker than usual. In each heel is cut a vertical longitudinal slot *b b* of such size as will properly accommodate a toothed roller *c c*, mounted therein. This roller, made
30 of hardened steel and having, preferably, seven points or teeth, is mounted on an axle whose section is a polygon having any suitable number of sides, which passes transversely through the side walls of the slot and through
35 a hole *d* in the center of the roller. This hole is also polygonal, and the number of its sides may be varied in like manner as the axle. In the best form of my invention I prefer to use a square axle and a square hole in the roller. The hole in the roller is of such size in relation
40 to the axle that passes through it that the roller may turn easily on the pin when free from pressure.

In the best form of my invention I prefer so to set the axle in the shoe that the diagonals of its square section are respectively in the plane of the shoe and in a plane perpendicular to the plane of the shoe, as is shown
45 at B in Fig. 3. It may, however, be so set that its sides have any position desired, as
50 that two opposite sides of the square section

are parallel with the plane of the shoe and the other two sides perpendicular thereto, without departing from my invention.

The size of the roller and its teeth is such that when the roller is raised to its highest
55 position (it having, necessarily, some horizontal and vertical movement, because the hole in the roller must be larger than the axle to allow it to turn) the lowest tooth will project below the thickened portion of the heel of the
60 shoe and the uppermost tooth will project only slightly or not at all above it.

The operation of my invention is as follows: When the horse puts his foot upon the ground, his weight upon the shoe forces the roller up-
65 ward in the slot as far as the axle will allow it to go. The square hole in the roller then takes the position on the axle shown at B in Fig. 3, for any other position would be one of unstable equilibrium. From this position it
70 cannot move so long as there is any weight on the shoe, and the teeth projecting below the shoe give a firm hold upon the ground. When the horse raises his foot from the ground, the roller is free to turn and so bring other teeth
75 into use.

It is evident that many changes can be made in this device without departing from my invention, for the toothed rollers may be located elsewhere than in the heels of the
80 shoe, or the upper part of the slot may be covered to prevent possible injury to the hoof from the teeth of the roller, or the axle, instead of being attached to the shoe and having the roller turn upon it, may be attached
85 to the roller and turn with it in similar holes in the walls of the slot.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a horseshoe, a
90 toothed roller adapted to revolve when relieved from pressure, a polygonal axle fastened to one of the parts, a corresponding hole in the other part through which the axle passes but larger than the axle, so that the
95 part having the hole and the part having the axle can revolve with reference to each other when relieved from pressure, substantially as set forth.

2. In combination with a horseshoe, a 100

toothed roller having through it a polygonal axle fastened to the shoe, substantially as described.

3. In combination with a horseshoe, a
5 toothed roller in the heel thereof, having through it a square hole, and mounted on a square axle fastened to the shoe, substantially as described.

4. In combination with a horseshoe, a
10 toothed roller in the heel thereof, having through it a square hole, and mounted on a square axle, said axle being so set that the

diagonals of its square section are respectively in the plane of the shoe, and in a plane perpendicular to the plane of the shoe, substantially as set forth. 15

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

JOHN W. OUTLAW.

Witnesses:

JAS. C. HOWELL,
GEO. W. MILLS, Jr.