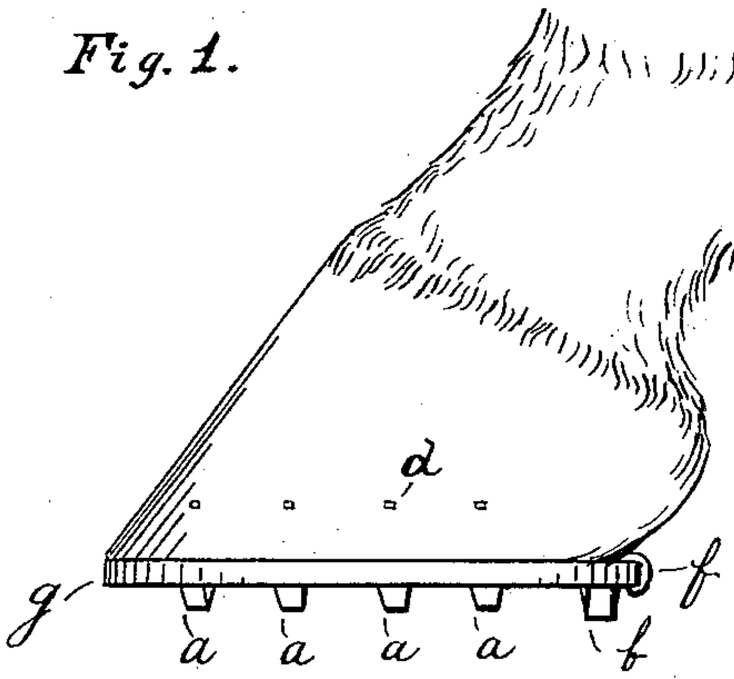
(No Model.)

B. WATKINS.

HORSESHOE NAIL.

No. 332,464. Patented Dec. 15, 1885.

Fig. 1.



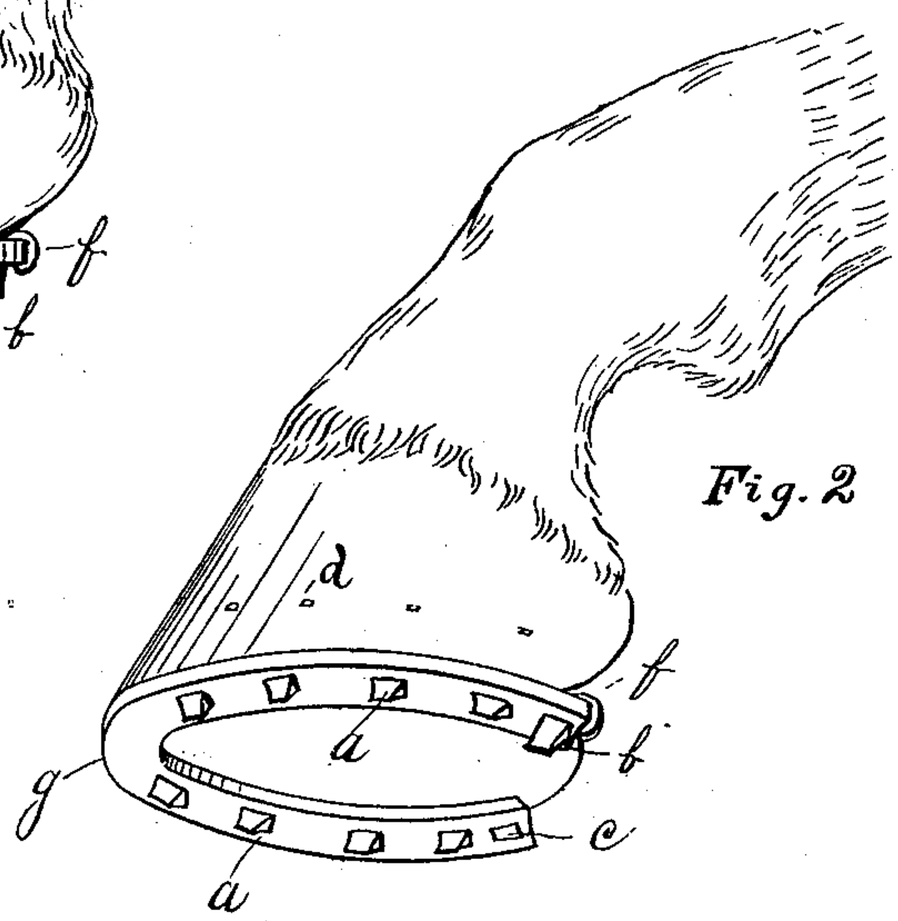


Fig. 2

Fig. 3

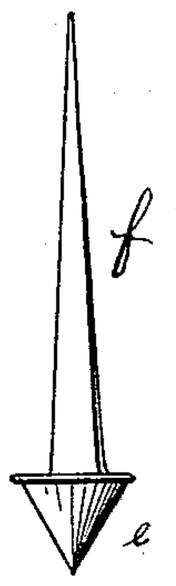


Fig. 4

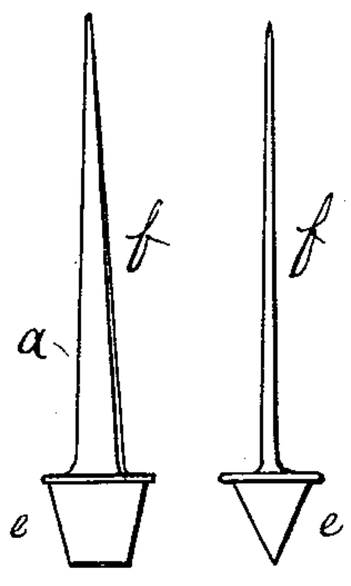
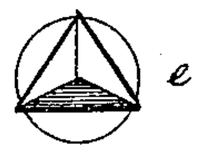


Fig. 5



Witnesses.
Charles Franklin
A. C. Barton

Inventor.
Benjamin Watkins

UNITED STATES PATENT OFFICE.

BENJAMIN WATKINS, OF AKRON, OHIO.

HORSESHOE-NAIL.

SPECIFICATION forming part of Letters Patent No. 332,464, dated December 15, 1885.

Application filed August 10, 1885. Serial No. 174,060. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN WATKINS, a resident of the United States, residing at Akron, in the county of Summit and State of Ohio, and formerly a resident of England, and still a subject of Great Britain, have invented a new and useful Improvement in Horseshoe-Nails, (for which I have obtained no patent whatever,) of which the following is a specification.

My invention relates to improvements in horseshoe-nails; and the objects of my improvements are as follows: First, to save the constantly-recurring expense of sharpening the toe and heel calks of horseshoes in frosty weather by the use of horseshoe-nails which shall answer the purpose of sharpened calks, and which nails may be renewed as occasion demands, and without entirely removing the shoe; second, to secure greater ease and safety to the animal by using such improved sharpened nails, so that the weight is more evenly distributed on the surface of the shoe than by the use of the ordinary heel and toe calks alone, and thereby enable the animal to secure a more natural and safe foothold; third, to secure greater durability than can ordinarily be obtained by the use of the ordinary heel and toe calks, which are usually a part of the shoe itself, made of wrought-iron, and which cannot be easily hardened or tempered, by using a nail of such material that it may be hardened or tempered at the head, so as to offer the greatest resistance. I attain these objects by the use of the nails illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation of a horse's hoof and shoe attached with my improved nails. Fig. 2 represents a perspective view of the same, showing the under side of the shoe and the heads of the nails projecting. Fig. 3 shows a nail with a round cone-head. Fig. 4 shows a nail with a chisel or wedge shaped head. Fig. 5 shows a nail with a three-sided or triangular cone-head.

Similar letters refer to similar parts throughout the several views.

The letter *e* refers to the heads of the various nails, the letter *f* refers to the shank or blade of the nails, the letter *d*, in Figs. 1 and 2, shows the nails clinched in the ordinary manner, and the letter *g* refers to the shoe.

The improved nails which I claim as my invention, and which are represented in Figs. 4 and 6 in the drawings, are made with the head *e* so constructed that it shall readily take hold in the ice or roadway, so as to perform the office of the ordinary heel and toe calks and prevent the animal from slipping. The heads of the nails should be of sufficient length to fully supply the place of heel and toe calks; but the size of the nail in all its parts must be in proportion to the size of the shoe used.

My method of tempering the heads of my nails is to dip only a small portion of the head in water when at a sufficient heat. The other parts of the nail, not touching the water, gradually cool and remain soft, while the head becomes hardened or tempered.

It will be seen that my improved nail differs very materially from the ordinary horseshoe-nail, as follows: First, the improved nail has a much longer head than the ordinary nail, which head decreases in size from its base to the top, the ordinary nail being of a short blunt top; second, the improved nail may be tempered at the head and be annealed or softened throughout the shank.

My improved nail also differs from any other nail ever invented or patented in many particulars, some of which may be enumerated, as follows:

First. It differs from the nail patented by Joseph Jorey, No. 126,712, May 14, 1882, as follows: the nail is made without the neck C, as marked in Jorey's specifications, and consequently my nail will fit any shoe, whether partly worn or not. The neck being dispensed with, the flat part of the base of the head of my nail will fit tightly upon the surface of the shoe, and will afford sufficient bearing to prevent the nail from working loose when striking the ground, to obviate which difficulty Jorey's Patent No. 147,271, of February 16, 1874, was granted.

Second. The nail which I claim as my invention is made with a round conical head, and with a triangular conical head, as shown in the drawings. By the use of these nails, when they are driven into the ice by the weight of the animal the foot is prevented from slipping in any direction, as the nail presents a face on all sides, which is not the case when the wedge-shaped nail is used.

Third. My nail may be hardened or tempered at the head, which greatly increases its durability.

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

A horseshoe-nail the head of which, tapered and terminating in a point, has a broad flat base, to insure a firm and even bearing against the under surface of the shoe and completely covering the nail-hole, as described and shown.

BENJAMIN WATKINS.

Attest:
CHARLES FRANKLIN,
N. C. BARTON.