H. J. BATCHELDER.

Manufacture of Horseshoes.

No. 200,425. Patented Feb. 19, 1878.

Fig. 1.

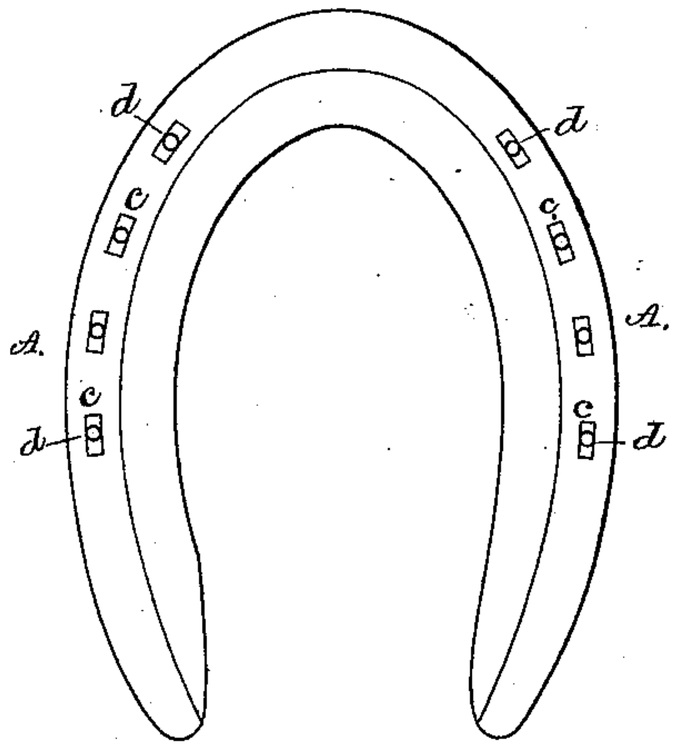


Fig. 2.

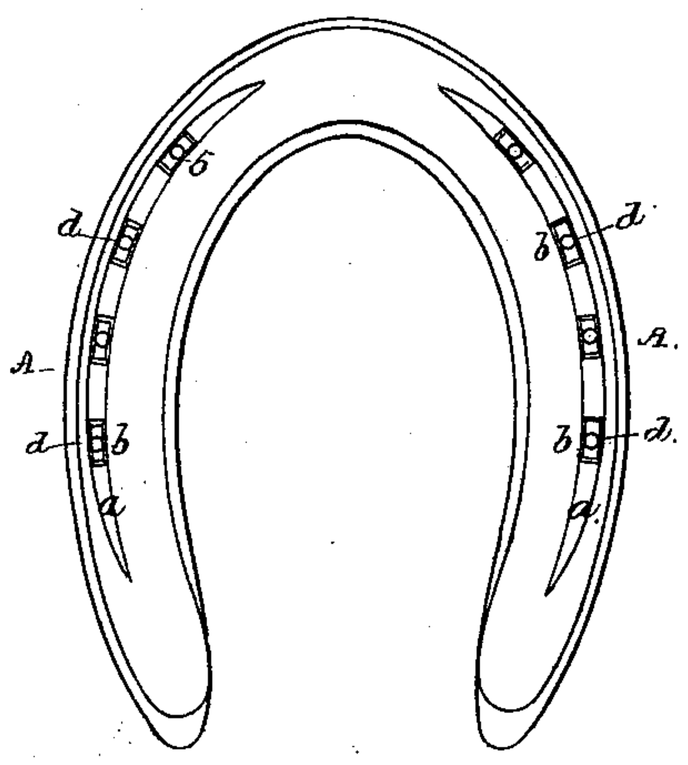
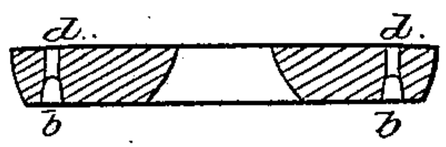


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

HAZEN J. BATCHELDER, OF FITCHBURG, ASSIGNOR TO HARVEY K. FLAGLER AND T. I. VERY, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN THE MANUFACTURE OF HORSESHOES.

Specification forming part of Letters Patent No. **200,425,** dated February 19, 1878; application filed July 21, 1876.

To all whom it may concern:

Be it known that I, HAZEN J. BATCHELDER, of Fitchburg, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in the Manufacture of Horseshoes; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

In the drawings, Figure 1 denotes a top view, Fig. 2 a bottom view, and Fig. 3 a transverse section, of a horseshoe constructed in accordance with my invention.

My invention relates to the manufacture of horseshoes of the class in which the shoes are adapted to be attached to the hoof by nails, in contradistinction to those which are adapted to be attached by screws.

Heretofore, in the manufacture of shoes of the first-named class, it has been usual to form the nail-holes by punching through the shoe, thereby not only displacing the metal laterally and forming protuberances on the outer edge of the shoe, (which protuberances have to be reduced by a subsequent operation,) but also condensing the metal around the holes and making the shoe of unequal density.

When the holes are formed by punching entirely through the shoe from one side, burrs or projections are formed on the side of the shoe opposite to that from which the punch enters, and it becomes necessary to flatten these burrs, in order to give the foot-bearing side of the shoe an even surface. This latter operation tends to partially fill up the nail-holes, so that they have to be subsequently enlarged.

It will be seen, therefore, that shoes in which the nail-holes are punched have to undergo considerable manipulation before they are in condition to be applied to the hoof.

My invention consists in forming the nail-holes without condensing the metal or forming burrs or protuberances, by making creases or indentations in the shoe, and drilling the holes from side to side, as described hereinafter.

In carrying out my invention I make the shoe A preferably in a machine from a rolled blank having the desired form in transverse section. I prefer to make creases *a a* in the under surface of the shoe, and in these creases form countersunk cavities *b* for the nail-heads. I also prefer to make similar cavities, *c*, in the opposite side of the shoe. I then drill holes *d* from the creases *a* (commencing at the centers of the cavities *b*, if these are used) entirely through the shoe, these holes being in diameter substantially equal to the thickness (or narrower portion of the transverse section) of an ordinary horseshoe-nail near the head thereof.

I prefer to make all the holes *d* simultaneously by using a gang of drills properly arranged. The shoe is then ready for the market, and when taken by the farrier or blacksmith for use, the only operation necessary to make the nail-holes is to elongate or enlarge the holes *d* in one direction only—that is, longitudinally of the shoe—by a "pritchel" or other appropriate tool, which converts the round hole made by the drill into an oblong hole corresponding in size and shape to the cross-section of the nail to be used.

It will be seen that by making the drilled holes *d* of a diameter equal only to the thickness of the nail to be used enough metal is removed to permit the introduction of the enlarging-tool and the elongation of the hole without increasing its width or displacing the metal laterally, and at the same time the removal of so much metal as would weaken the shoe is avoided.

The cavities *c* in the upper side of the shoe prevent the slight burrs which may be formed at the ends of the holes by the pritchel from projecting beyond the foot-bearing surface of the shoe, although the burrs so formed are not of sufficient size to be a disadvantage in ordinary cases.

The creases *a* serve, as in other shoes, as recesses or continuous countersinks for the nail-heads.

It will be apparent that the holes may be

enlarged by boring or drilling two parallel holes in such close proximity that one will merge into the other, forming an elongated drilled hole, which is squared by the pritchel in the same manner as the round-drilled hole.

By this invention shoes of any thickness, whether of iron or steel, can be readily provided with nail-holes of the proper size and shape without impairing the shoe or rendering subsequent hammering or finishing necessary.

I claim—

The described improvement in the method of forming nail-holes in horseshoes, which consists in forming the crease and a series of indentations or countersinks on both sides of the shoe, drilling holes through the bottom of such indentations, and subsequently enlarging, squaring, and finishing the hole by means of a pritchel, substantially in the manner and for the purpose specified.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

HAZEN J. BATCHELDER.

Witnesses:

F. P. HALE,

F. C. HALE.