

(No Model.)

W. W. MINER.

DIE FOR SWAGING BLANKS FOR HORSESHOE NAILS.

No. 484,220.

Patented Oct. 11, 1892.

Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5

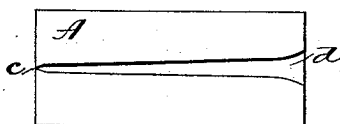


Fig. 6

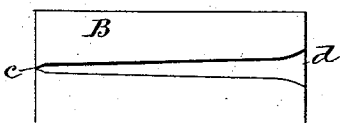
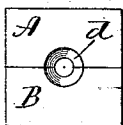


Fig. 7



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM W. MINER, OF NEW HAVEN, ASSIGNOR TO THE NEW PROCESS
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DIE FOR SWAGING BLANKS FOR HORSESHOE-NAILS.

SPECIFICATION forming part of Letters Patent No. 484,220, dated October 11, 1892.

Application filed February 23, 1892. Serial No. 422,433. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. MINER, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Dies for Swaging Blanks for Horseshoe-Nails; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view of the completed blank; Fig. 2, the preliminary blank from which the blank Fig. 1 is produced; Fig. 3, a face view of a completed nail; Fig. 4, a side view of the same; Fig. 5, a face view of one part of the die; Fig. 6, a face view of the other part of the die; Fig. 7, a front or mouth end view of the two parts of the die set together.

This invention relates to an improvement in dies for the manufacture of that class of horseshoe-nails in which the blank for the nail is made round in transverse section from tip to tip, the area of the transverse section of this round blank at all points corresponding substantially to the transverse section of the finished flattened nail, such blanks after being formed round throughout being flattened from tip to tip to give the required flat surfaces and requisite thickness to the nail from tip to tip, the object of my invention being a construction of dies adapted to be employed in machines carrying rapidly-reciprocating die-holders and so that the dies coming together produce a hammering effect upon the blank to draw it into the required shape; and the invention consists in the construction of the dies as hereinafter described, and particularly recited in the claim.

In Fig. 1 the blank is represented such as is required to be produced for the formation of the nails, as hereinbefore described.

In Fig. 2 the preliminary blank is represented. The preliminary blank has a cylindrical body *a*, with a substantially-spherical head *b*, this preliminary blank containing sufficient metal for the production of the completed blank of Fig. 1. The dies by which the preliminary blank Fig. 2 is brought into

the shape of the completed blank, as seen in Fig. 1, according to my invention, consist of two parts A B. These dies have corresponding flat faces, so as to close together, as seen in Fig. 2. In the adjacent faces of the dies longitudinal cavities are formed, each of substantially a half-circle in transverse section, the cavities in the two parts being alike. The cavities extend through the length of the blank from end to end. The cavity at the one end *c* starts at substantially a point and increases rapidly for about one-eighth of an inch in length, so as to produce a conical point, and from that point the diameter gradually increases toward the opposite end, where it terminates in a bell shaped recess *d*. Preferably the cavity should increase in diameter more rapidly from the point for about one-third the length of the completed blank than from that one-third toward the head, and as seen in Figs. 5 and 6. The cavities in the two parts are in line with each other and so that when set together, as seen in Fig. 7, the recess between the two parts corresponds to the blank to about midway of the length of the head or enlarged portion and to the point indicated by the broken line in Fig. 1.

These dies are employed in a suitable machine—may be such as is well known as the “Hopson & Brooks” machine—where both dies will reciprocate, or one may be stationary and the other reciprocate, as in a common swaging-press.

The preliminary blank, Fig. 2, is introduced at the mouth or bell-shaped end of the cavity, and as the dies reciprocate the blank is rotated, so that the body of the metal *a* is drawn out, reducing its diameter and lengthening the blank until the complete blank, Fig. 1, is produced. The dies leave that portion of the original blank outside the broken line, Fig. 1, in its original condition.

As an illustration of the completed nail I show in Figs. 3 and 4 a face and side view of the nail, and thus formed the nail is completed by simply a flattening operation to bring the blank Fig. 1 into the shape as seen in Figs. 3 and 4; but this flattening operation constitutes no part of the present invention.

I claim—

The herein-described dies for the manufac-

ture of horseshoe-nails, consisting of two parts, their faces adapted to meet in a plane common to both, the said meeting surfaces each having a longitudinal cavity therein and each
5 cavity substantially semicircular in transverse section, the said cavity starting from the outside of one end of the parts and contracting to form a bell-shaped mouth opening outward, thence gradually diminishing in
10 diameter to near the opposite end of the cavity, the said opposite end of the cavity con-

tracting rapidly and so as to form a sharp close point, substantially as described, and whereby the dies are adapted to produce a blank with a sharp finished point. 15

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

WILLIAM W. MINER.

Witnesses:

JOHN E. EARLE,
FRED C. EARLE.