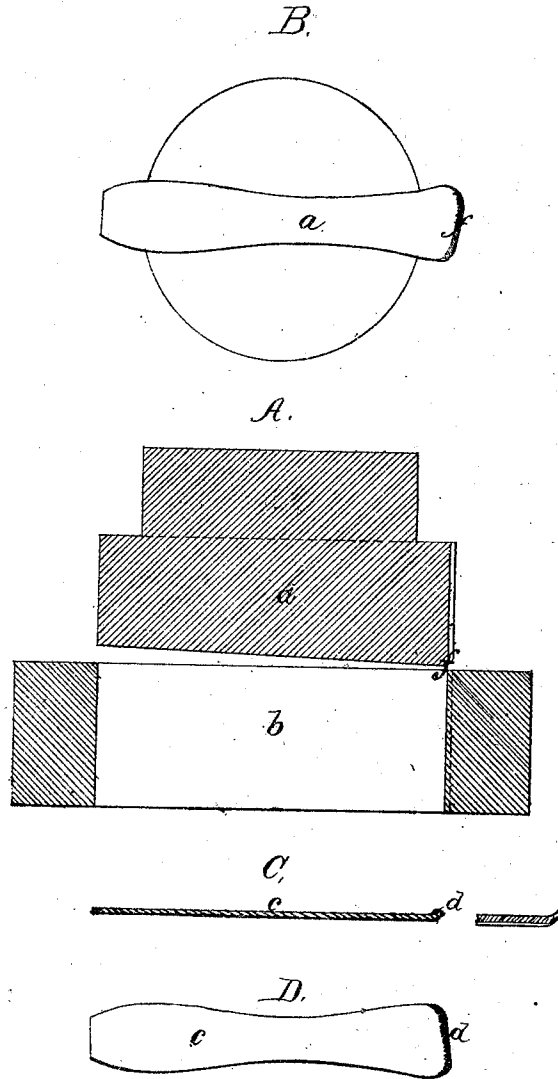


*H. F. Whidden,
Impt in the Manufacture of Metal Ganks for
Boots and Shoes.*

No. 118,660.

Patented Aug. 29, 1871.



*Witnesses,
M. W. Frothingham.
L. H. Latimer.*

*H. F. Whidden,
by his Attor
Crosby & Gould*

UNITED STATES PATENT OFFICE.

HOSEA F. WHIDDEN, OF SOUTH ABINGTON, MASSACHUSETTS.

IMPROVEMENT IN DIES FOR MAKING METALLIC SHANKS FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. 118,660, dated August 29, 1871.

To all whom it may concern:

Be it known that I, HOSEA F. WHIDDEN, of South Abington, in the county of Plymouth and State of Massachusetts, have invented an Improvement in the Manufacture of Metal Shanks for Boots and Shoes; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention, sufficient to enable those skilled in the art to practice it.

My invention relates to an improved method of forming metal shank-stiffeners for boots and shoes.

Of late years steel shanks have been largely used in the manufacture of boots and shoes as a substitute for leather. It is customary in such shanks to bend the end down slightly to form a lip for preventing the end of the shank from wearing through the inner sole, between which and the outer sole the shank is inserted. This lip is generally made by hand-use of a hammer or by a special lip-bending machine. To avoid the necessity of such manipulation, and to form the lip in the process of punching out the shank, is the object of my invention.

My improvement consists in shaping the shank, both as to its contour and as to its beveled lip or end, by a die and punch, the punch having a bevel at one end, so that the action of the end of the punch upon the metal placed on the die forms the lip.

The drawing represents a punch and die, the punch being formed to impart the lip to the spring. A shows the punch and die in section. B is a bottom view of the punch. C is a section of the shank-spring or blank cut by the punch and die. D is a plan of the same.

a denotes the punch; *b*, the die, the contour of the punch being the same as the contour to be given to the metal shank, and the die-opening corresponding thereto. *c* denotes the metal shank-spring or blank. When finished the shank is to have the form shown at E, and if the point is left as a straight continuation of the front part of the shank the friction against the inner sole soon wears through the sole and hurts the foot. To obviate this the point or extreme end of the shank is abruptly bent so as to form a lip, *d*, the end of the spring sliding against the inner sole, thereby presenting a rounding corner against the surface of the inner sole.

Now, to form this lip in the operation of punching I make the cutting-face of the punch at the end thereof with an abrupt retreating angular face or corner, *f*, as seen at A and B, this angle being the reverse of the shearing-angle given to the main face of the punch or of the die. As the punch begins to cut it drives the metal down into the die and bends the end around the corner *f* before it severs on the line *x x*, the strain upon the metal bending it against the corner incline and effecting the permanent lip-forming bend *d*, the continuation of the movement of the punch shearing the metal to complete the blank. By this method of operation the lips of the shanks are all uniformly bent, and without any cost additional to the cost of punching the blanks.

I claim—

The dies *a* and *b*, constructed and operating as shown and described.

H. F. WHIDDEN.

Witnesses:

SAML. P. ALLEN,
JOSEPH PETTEE, Jr.