

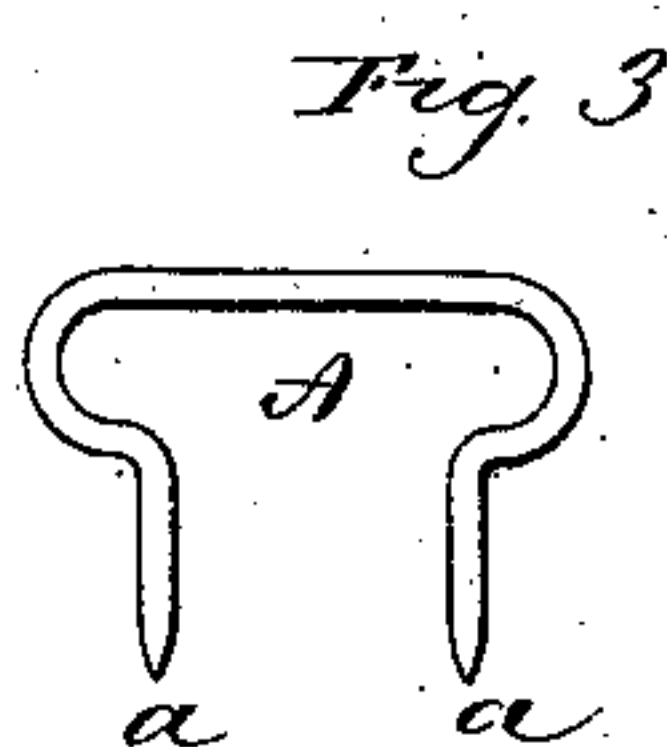
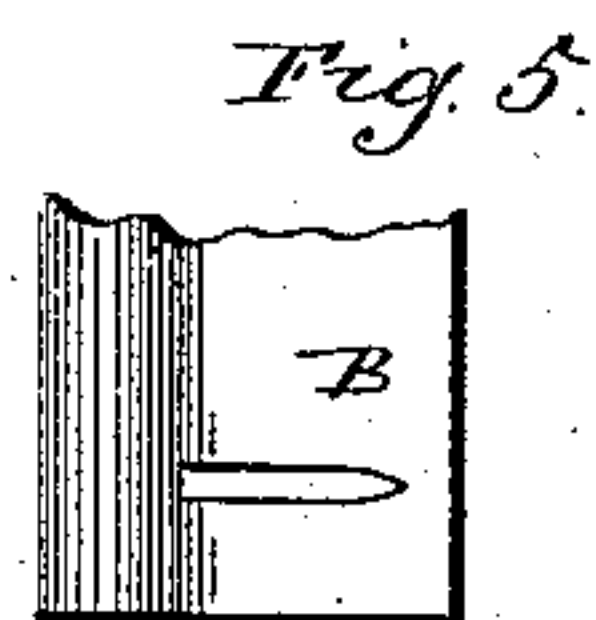
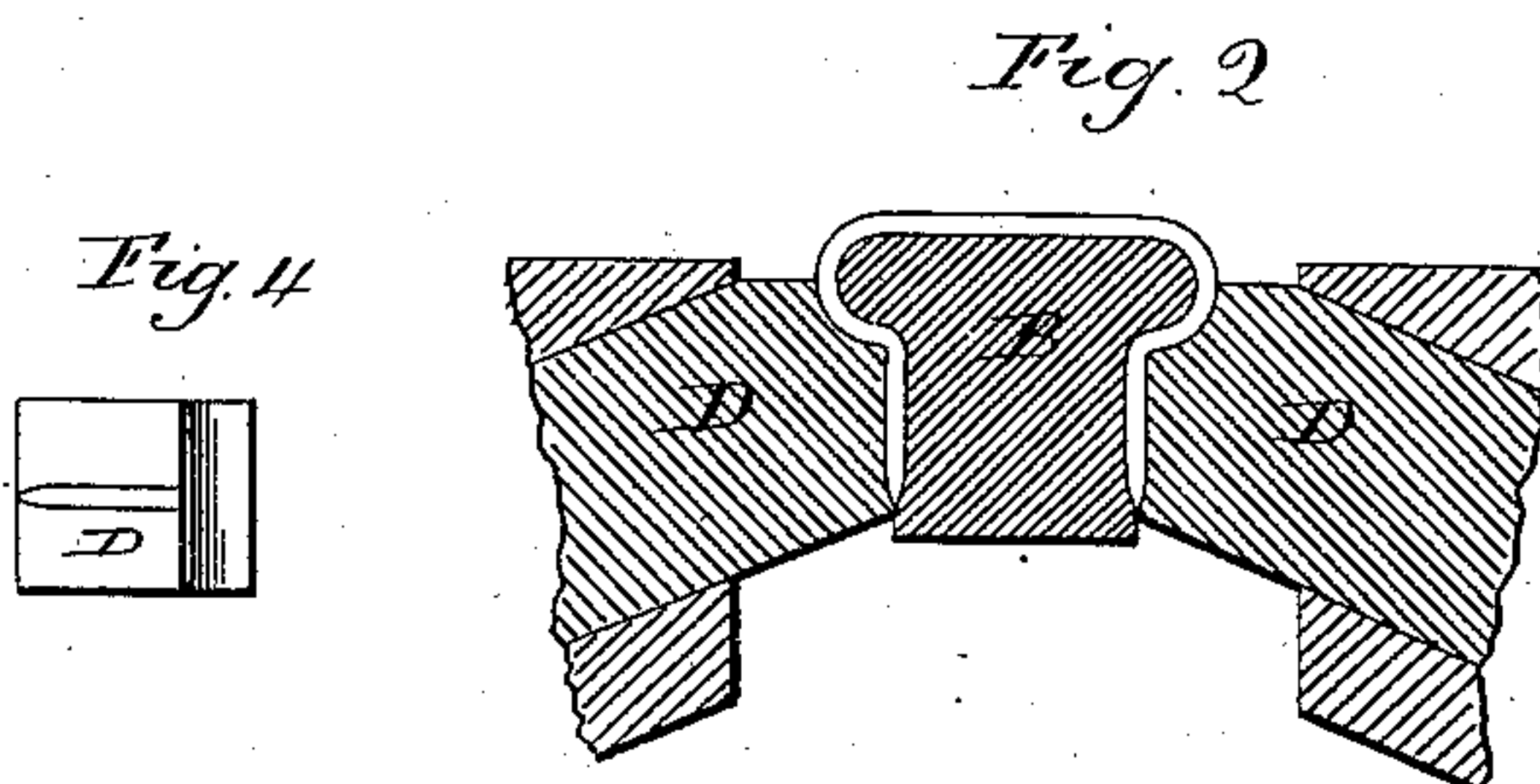
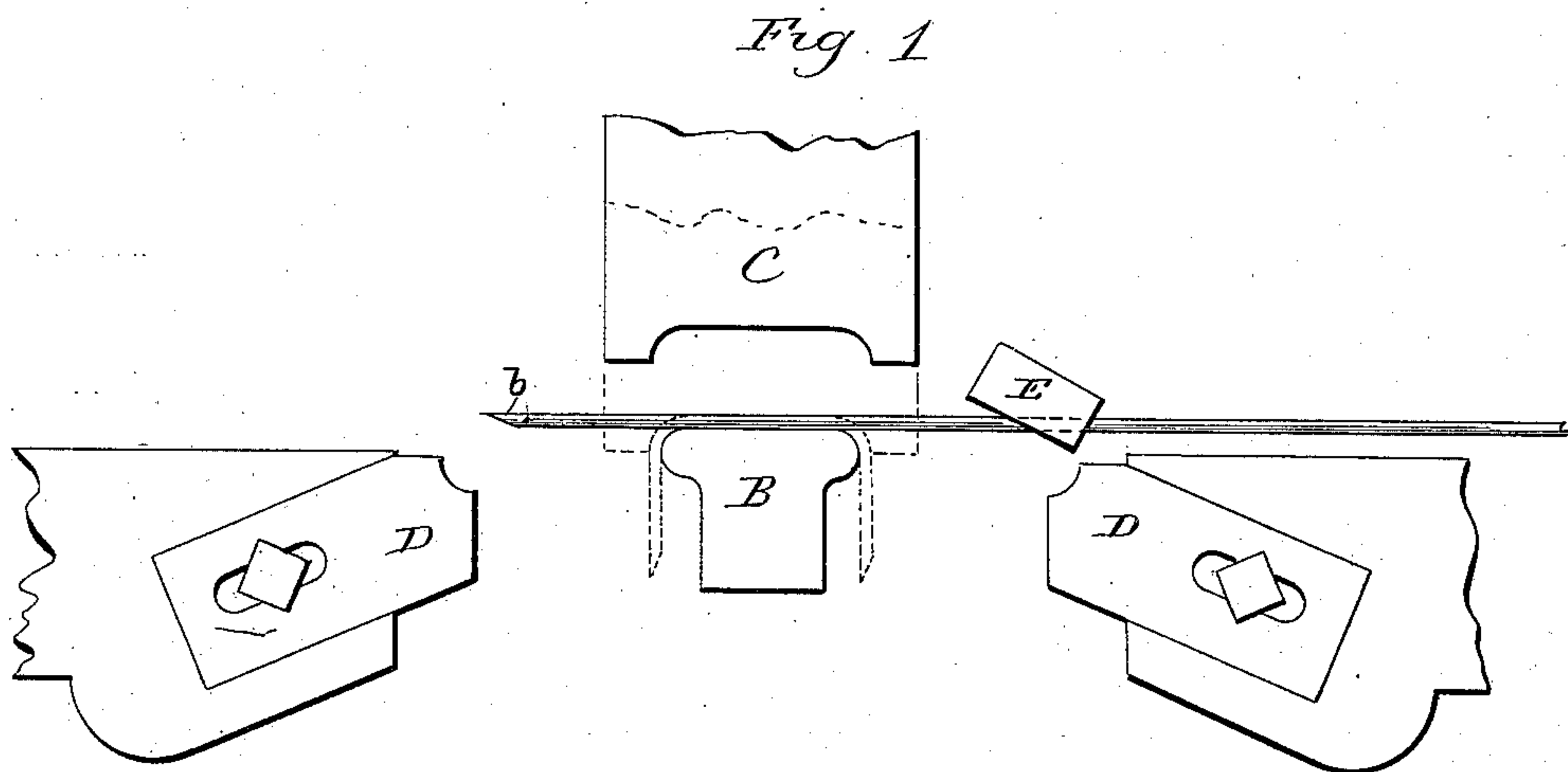
(No Model.)

H. G. KELSEY & H. A. HARTSHORN.

MECHANISM FOR FORMING BUCKLE TONGUES.

No. 372,152.

Patented Oct. 25, 1887.



Witnesses
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UNITED STATES PATENT OFFICE.

HORATIO G. KELSEY AND HENRY A. HARTSHORN, OF WEST HAVEN, CONNECTICUT, ASSIGNORS TO THE AMERICAN BUCKLE AND CARTRIDGE COMPANY, OF SAME PLACE.

MECHANISM FOR FORMING BUCKLE-TONGUES.

SPECIFICATION forming part of Letters Patent No. 372,152, dated October 25, 1887.

Application filed July 5, 1887. Serial No. 243,339. (No model.)

To all whom it may concern:

Be it known that we, HORATIO G. KELSEY and HENRY A. HARTSHORN, of West Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in the Manufacture of Buckles; and we 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 top or plan view of the active portions of the machine; Fig. 2, a horizontal section through the side benders and former in the plane of the tongue portion of the buckle on the former; Fig. 3, the tongue complete as formed by the machine; Fig. 4, the working-face of the side benders; Fig. 5, the working-face of the former.

This invention relates to an improvement in that class of buckles for wearing-apparel in which the buckle is composed of two parts—a frame and a tongue portion—each part made from wire, the tongue portion bent to form the loop, and the ends of the frame bent around the inner side of the loop to form the hinge, and such as commonly known as the “Hartshorn buckle,” and such as patented to Hartshorn July 10, 1855, No. 13,218.

In this class of buckles it is necessary that the engaging ends of the tongue shall be brought to a sharp point, or nearly so. Heretofore this has been done in some cases by grinding, in other cases by rotating hammers, and in other cases by squeezing the point ends between dies, which throw the surplus metal on opposite sides of the point end in the form of fins. Then the fins are cut off and the point finished by tumbling or otherwise; but in either case the operation adds considerably to the cost of manufacture, which it is the object of our invention to avoid. The tongue portion of the buckle is represented in Fig. 3. This part of the buckle is made from wire bent into the required shape to form the two tongues *a a* on one side of the loop *A*. To bend the blank, a former, *B*, (see Fig. 1,) stands vertical, and which in transverse section corresponds in shape to the inside of the tongue part of the buckle.

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C represents the preliminary bender, adapted to reciprocate toward and from the former, as indicated in broken lines, Fig. 1. On the face of the bender a recess is formed corresponding, substantially, to the outside of one-half the loop portion of the buckle. The wire is fed in between the former and the preliminary bender *C*, as indicated in Fig. 1, and cut off to the proper length. Then the bender *C* advances toward the former and turns the two ends onto the former, bringing the blank into *U* shape, as indicated in broken lines, Fig. 1. Then side benders advance and complete the loop, leaving the tongues projecting at right angles to the loop.

Instead of cutting off blanks from the wire at right angles, I make a diagonal cut, as indicated at *b*, Fig. 1. This leaves a partially-formed point upon the end of the wire, and as the wire advances the required distance another like diagonal cut is made, severing the blank from the body of the wire and leaving it between the bender and former, as seen in Fig. 1. The inclination of the two ends of the blank are opposite each other because of the diagonal cut made, as before described. The blank thus introduced is first bent by the preliminary bender *C*, as before described and as seen in Fig. 1.

D D represent two side benders, the face of which corresponds to the side of the former, and so that as the two advance upon opposite sides of the former they force the end portions inward and bring the ends of the blank parallel with each other and at right angles to the loop, completely forming the loop, as seen in Fig. 2. The faces of the two bending-dies *D D* have a cavity formed therein, as seen in Fig. 4, the cavity running to a sharp point corresponding in position to the point end of the blank. The former also has a corresponding recess upon its side, as seen in Fig. 5. As the two side benders, *D D*, advance, the cavity therein is brought onto the respective ends of the wire, and because of the point shape they

bring the partially-formed point of the ends into a completely-shaped point, as indicated in Figs. 2 and 3.

Because of the diagonal cut made, as before described, in severing the blank from the body of the wire, there is no more metal left upon the point end of the blank than is required for its proper shaping, the obliquity of the cut being made with due regard to the metal required for so completely forming the point.

By this method of forming the point the operations hitherto required for this purpose—such as before described—are avoided, the points being formed complete in the operation of bending—that is to say, in bending the tongue portion of the buckle precisely the same action of the dies is required as that which we have described; but by forming the point cavities in the respective benders the point is produced without additional operations over that which is necessarily required in bending the blank to shape. After the blank has been thus completed it is forced from the former by the stripper in the usual manner.

We have not shown the machine complete, as the mechanism for operating the respective slides which carry the preliminary bending-die and the side benders, as well as the stripper, are common and well known and do not require illustration, it only being necessary to say that a reciprocating movement is imparted

to the preliminary die and to the side benders toward the former, such movement being timed for the introduction or feed of the wire, which is also produced in the usual manner.

The diagonal cut is produced by cutters the cutting-edge of which is oblique to the line of the wire, as indicated at E, Fig. 1, which represents one of the cutters, the cutters being substantially the cutters employed in machines for this purpose, excepting in the diagonal position.

We claim—

The herein-described improvement in machines for manufacturing buckle-tongues, substantially such as described, consisting in the combination of the stationary former B, its shape corresponding to the interior of the tongue part of the buckle, a cutter the cutting-edge of which is oblique to the line of wire fed to the machine and whereby obliquely-cut points are formed on the blank, the reciprocating preliminary bender C, and the reciprocating side benders, D D, the said side benders having cavities in their face terminating in point shape for the point end of the blank, substantially as described.

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