J. KIEFFER.

Dies for Shaping Boot and Shoe Counters.

No. 222,283. Patented Dec. 2, 1879.

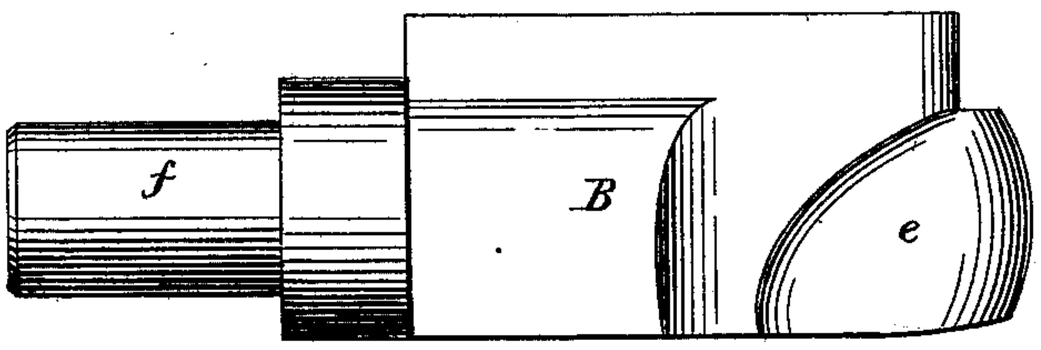

Fig.8.

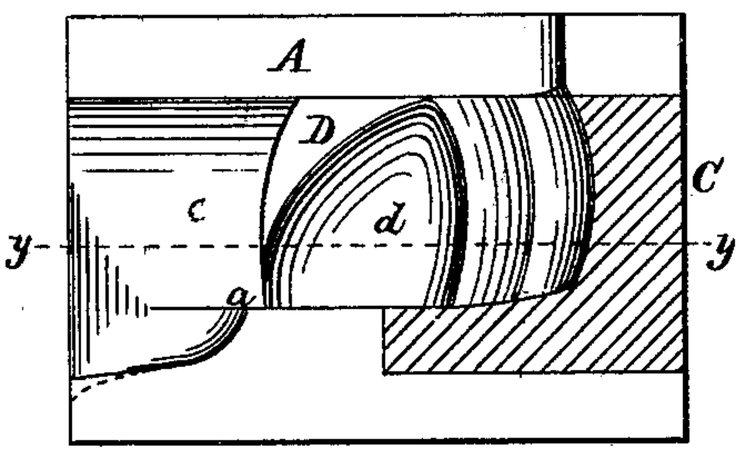

Fig.3.

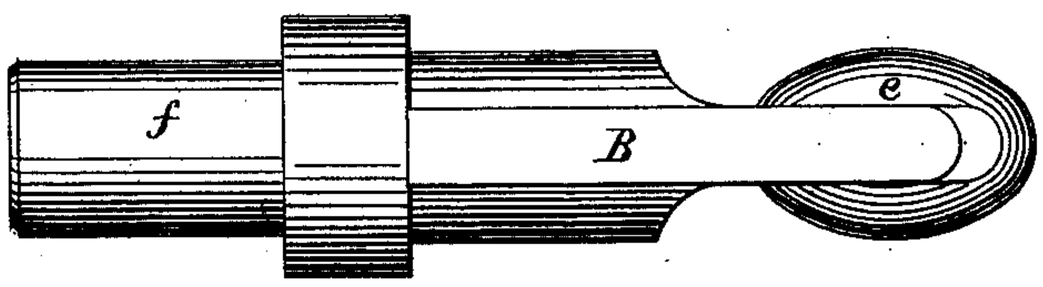

Fig.7.

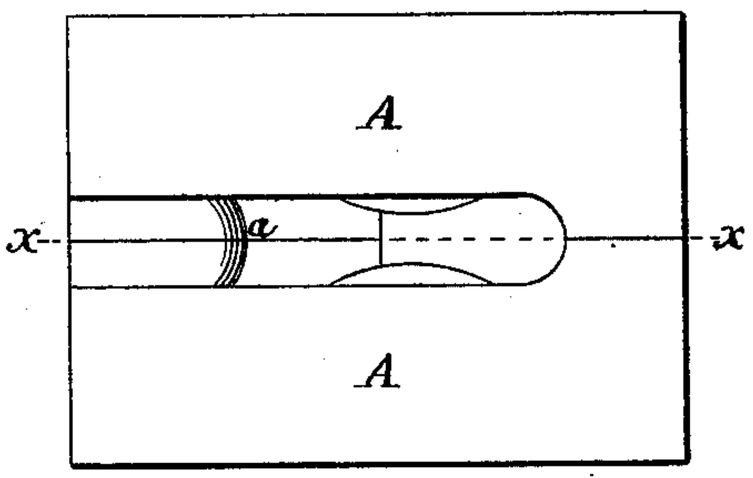

Fig.1.

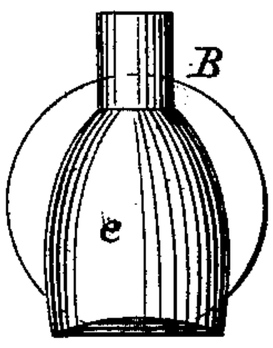

Fig.9.

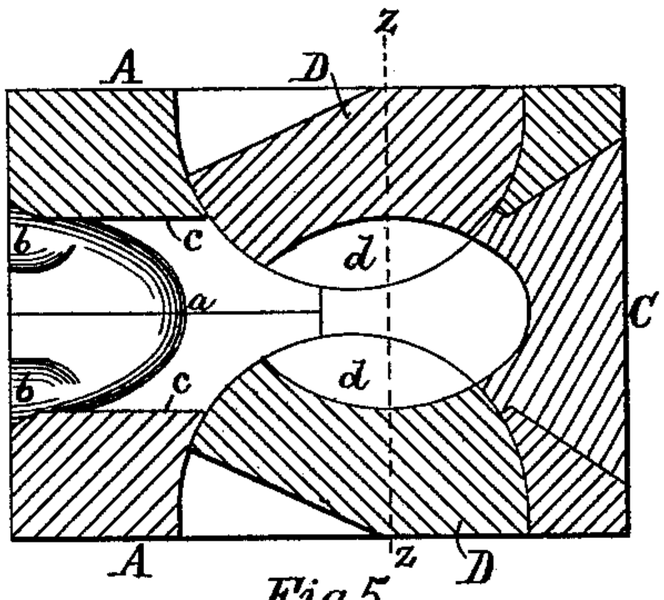

Fig.5.

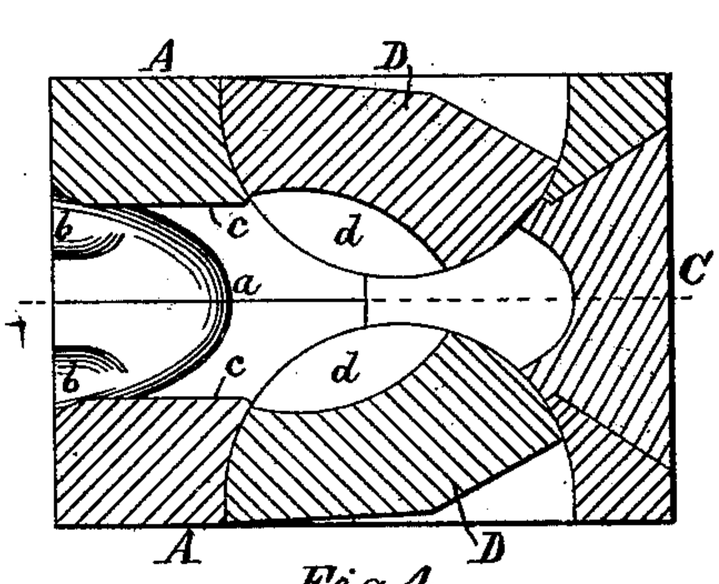

Fig.4.

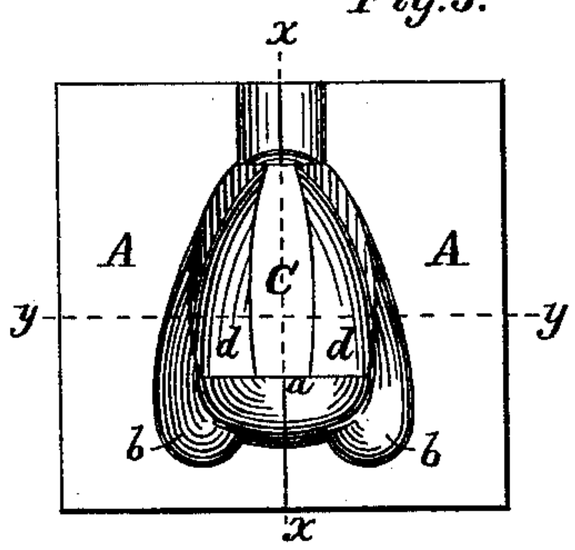

Fig.2.

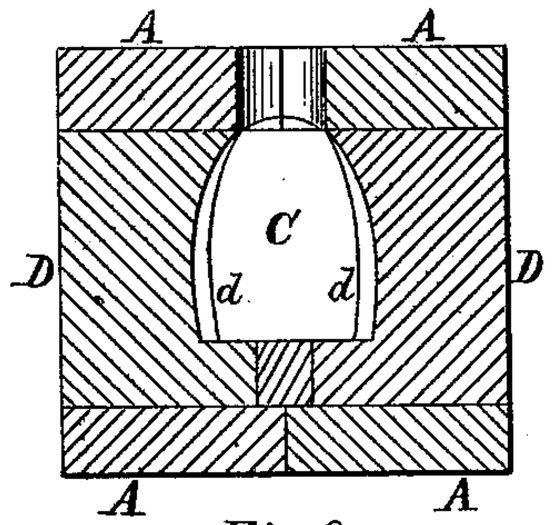

Fig.6.

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UNITED STATES PATENT OFFICE.

JOSEPH KIEFFER, OF MONTREAL, QUEBEC, CANADA.

IMPROVEMENT IN DIES FOR SHAPING BOOT AND SHOE COUNTERS.

Specification forming part of Letters Patent No. **222,283**, dated December 2, 1879; application filed January 6, 1879.

To all whom it may concern:

Be it known that I, JOSEPH KIEFFER, of Montreal, in the Province of Quebec and Dominion of Canada, have invented certain new and useful Improvements in Dies and Formers for Shaping Heel Counters or Stiffeners for Boots and Shoes, of which the following, taken in connection with the accompanying drawings, is a specification.

My present invention is an improvement upon the invention described in Letters Patent No. 205,191, granted to me June 25, 1878, for machine for molding heel-counters, and relates to the construction of the mold or female die and the former, whereby the counter is more perfectly shaped; and it consists in the combination of a reciprocating male die or former having its front or operating end shaped to correspond to the desired inner contour of the counter or stiffener, and a female die or mold having a parallel-sided entrance, a back concaved to fit the convex end of the former, and movable central side sections provided upon their inner sides with concaved molding-surfaces, and each adapted to be partially rotated about an axis of motion perpendicular to the plane of movement of the reciprocating former by the movements of said former, and thereby curve inward the forward ends of the counter and cause them to assume, as near as may be, the desired shape of the finished counter.

It further consists in a female die or mold for shaping counters, composed of two main side dies, placed side by side, and provided with straight molding-surfaces at or near their front or mouth ends, and having openings cut in their sides in the rear of said straight molding-surfaces, two movable side sections placed in said openings in the main die-pieces, and having formed in their inner sides curved molding-surfaces, each adapted to be partially rotated about an independent axis of motion, and a back piece provided with a curved inner surface to fit the convex end of the former, as will be further described.

It further consists in a sectional female die or mold for shaping counters in which the main sides and back or end piece yield slightly, moving in straight, or nearly straight, lines, and the central side sections have imparted to them a reciprocating rotary motion about independent axes of motion.

It further consists in a sectional female die or mold provided with side molding surfaces or shapers, adapted to be partially rotated about independent axes of motion located forward of the back or rear end of the mold.

Figure 1 of the drawings is a plan of a female die or mold complete embodying portions of my improvements. Fig. 2 is an elevation of the open end of the same. Fig. 3 is a section on line *x x* on Figs. 1 and 2. Fig. 4 is a horizontal section on line *y y* on Figs. 2 and 3. Fig. 5 is a similar section, showing the movable side sections in the positions which they assume when the male former has completed its forward motion. Fig. 6 is a vertical transverse section on line *z z* on Fig. 5; and Figs. 7, 8, and 9 are, respectively, a plan, elevation, and end view of the male die or former.

In my previous patent heretofore cited the female die or mold was made in two parts, F F, placed side by side within a box or casing composed of adjustable plates *g*, *g*, and *l*, held in position by bolts and wedges, with sheets or plates of rubber or other elastic material placed between said female die and its inclosing-casing, and the male former was a straight plunger having a rounded end, as shown and described in said patent.

The construction of the mold and former there described worked admirably; but there was one objectionable feature connected therewith, which was the fact that the machine left the two sides of the counter too straight, such sides being substantially parallel with each other as viewed in plan, when in fact a properly-shaped counter requires to be narrower between the two sides at their extreme forward ends than at a point nearer the extreme rear of the counter.

To obviate this objection and produce a counter by means of a reciprocating former and a female die or mold that shall be shaped to conform to the shape of the last upon which the shoe is to be built is the object of my present invention; and as my improvements are limited to the construction of the former and the female die or mold which are to be used in place of the former and mold shown and described in the before-mentioned Letters

Patent I have not thought it necessary to show or describe the other working parts of the machine.

In the drawings, A A are the two main portions of the female die or mold, but containing only a small portion of the molding or shaping surface, and that at or near the entrance or mouth, where the said parts A A are each provided with a shoulder, *a*, and curved recess *b*, to aid in the proper doubling under of the blank to form the bottom lip or flange, as described in my former patent.

The sides *c* of the entrance to the mold are made straight and parallel with each other longitudinally for some little distance, though curved toward each other vertically, which straight surface, by its adhesion to the blank as it is forced into the mold by the male die or former B, (shown in Figs. 7, 8, and 9,) causes said blank to be drawn tightly around the curved end of the former B.

The side pieces, A A, are both cut away at their rear ends for a greater part of their height, and into the space so formed is fitted the back piece, C, having its inner face concaved to fit the convex end of the former B, the object of this back piece being to do away with a joint in the extreme rear of the mold, which I have found in practice to be objectionable on account of the formation upon the rear of the counter of a ridge caused by forcing the material into said joint.

Each of the side pieces, A A, also has cut through its side a mortise, into which is fitted the semi-cylindrical side piece, D, having formed in its inner or cylindrical side a concave recess, *d*, shaped to fit the side of the curved working-head *e* of the male former B, said side piece, D, being so formed and mounted in the skeleton side piece, A, that it may be partially rotated about an axis of motion by the forward motion of the former B, and may thus press the counter-blank around the inwardly-curved portion of the former-head *e*, which enters the mold last, and thus complete the shaping of the counter, and then it may be moved in the opposite direction around its axis as the former is withdrawn.

The former B is provided with a shank, *f*, by which it is secured in position in the reciprocating plunger of the machine, and has formed on its opposite end the head *e*, before referred to, shaped to correspond to the desired contour to be given to the counter, as shown in Figs. 7, 8, and 9.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination of a male die or former having a curved or rounded end and sides curved vertically and longitudinally, as set forth, and a sectional female die or mold, the entrance of which is straight, or nearly so, longitudinally, and having a back or rear end surface concaved to fit the convex end of the male die or former, and provided with central side sections concaved upon their inner sides to fit the curved sides of the former-head, and adapted to be partially rotated about an axis of motion perpendicular to the plane of movement of the former, substantially as and for the purposes described.

2. The combination of the male die or former B, provided with curve-sided and convex-ended head *e*, and a sectional female die or mold composed of the main side pieces, A A, provided with the longitudinally-straight surfaces *c*, the central movable side sections, D D, and the back piece, C, all arranged and adapted to operate substantially as and for the purposes described.

3. A female die or mold for shaping shoe-counters, composed of the main side pieces, A A, having openings cut through their sides, and provided at or near the entrance or mouth thereof with longitudinally-straight surfaces *c*, shoulders *a*, and curved recess or cutaway *b*, the central movable side sections, D D, and separate back piece, C, all constructed and arranged relative to each other substantially as described.

4. A die or mold for shaping shoe-counters in which the main sides and back yield only slightly in straight, or nearly straight, lines, and the central side sections have imparted thereto a reciprocating rotary or vibratory motion about independent axes of motion, substantially as described.

5. In a female die or mold for shaping shoe-counters, two side molding or shaping surfaces adapted to be partially rotated about independent axes of motion located forward of the back or rear end of the mold, substantially as described.

6. In an apparatus for molding boot and shoe counters, the combination, with a male die or follower, of a female die having a concave heel-block and wings or side pieces, each adapted to be moved about a fixed vertical axis of motion, substantially as set forth.

7. In an apparatus for molding or shaping boot and shoe counters, the combination of a reciprocating male die or former, a concave heel-block, and wings or side pieces forming a continuation of the heel-block, and adapted to be vibrated about a fixed vertical axis of motion, substantially as and for the purposes described.

Executed at Montreal, Province of Quebec, this 26th day of December, A. D. 1878.

J. KIEFFER.

Witnesses:
MÉDÉRIC CONSTANTIN,
I. A. O. LA BADIE.