F. ECAUBERT.

DIES FOR FORMING WATCH-CASE CENTERS.

No. 172,720. Patented Jan. 25, 1876.

Fig. 1.

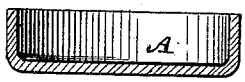


Fig. 2.

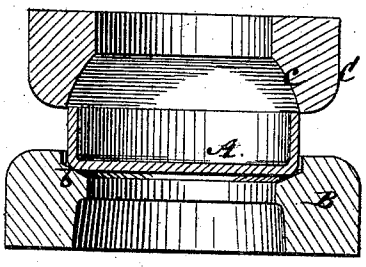


Fig. 3.

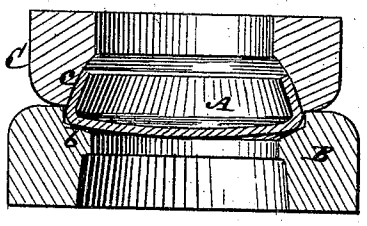


Fig. 4.

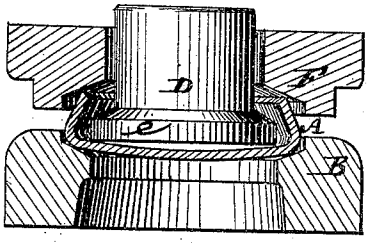


Fig. 5.

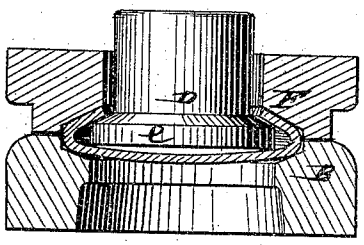


Fig. 6.

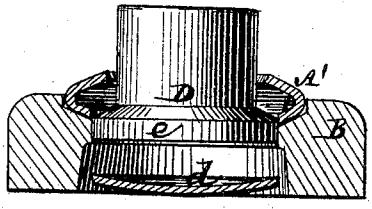
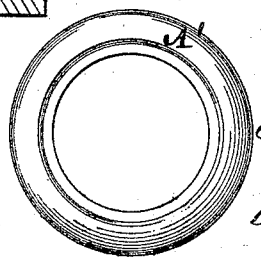


Fig. 8.

Fig. 7.



Witnesses.
John Becker
Fred. Haynes

Frederick Ecaubert
by his Attorneys
Brown & Allen

UNITED STATES PATENT OFFICE.

FRÉDÉRIC ECAUBERT, OF NEW YORK, N. Y.

IMPROVEMENT IN DIES FOR FORMING WATCH-CASE CENTERS.

Specification forming part of Letters Patent No. **172,720**, dated January 25, 1876; application filed December 18, 1875.

To all whom it may concern:

Be it known that I, FRÉDÉRIC ECAUBERT, of the city, county, and State of New York, have invented a certain new and useful Improvement in the Manufacture of Watch-Case Centers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

This invention has for its object the manufacture of watch-case centers or other hollow annular articles, from one and the same piece of sheet metal, by means of punches and dies; and consists in certain novel construction and combinations of said punches and dies whereby the same is done.

By this invention a watch-case center is shaped and produced by simply striking up and punching, without resorting to brazing or soldering.

Figure 1 represents a vertical section of a cup-shaped piece of metal, in illustration of the first stage of the operation; Figs. 2 and 3, transverse sections of the same in connection with certain dies, illustrating a succeeding stage of the process. Figs. 4 and 5 are further like views of similar devices, including a punch, illustrating a still further stage in the operation; Fig. 6, a like view, showing the finishing stage. Fig. 7 is a front or face view of a watch-case center constructed in accordance with the invention; and Fig. 8, a partially-sectional edge view of the same.

To construct a watch-case center in accordance with my invention, I first strike up from a piece of sheet metal, by any of the ordinary or well-known means or other suitable appliances, a cup, A, Fig. 1. This cup is afterward transferred, with its bottom downward, to and within a ring-shaped lower die, B, which is of a sloping or beveled construction on its receiving base portion *b*. (See Figs. 2 and 3.) An upper annular die, C, having upwardly-contracting inner sides *c*, is then brought down over the mouth of the cup A. This partially bends inward or closes the mouth of the cup, and gives belly or shape to its bottom.

Said stage in the operation is distinctly shown in Figs. 2 and 3 of the drawing,

The upper die C is then removed, and a punch, D, introduced within the cup A. (See Figs. 4 and 5.) This punch is constructed to cut out the center *d*, Fig. 6; also to form the core upon which to give shape to the interior of the ring or watch-case center A′, and to regulate its depth; but the cutting out of the center *d* is an after proceeding, and, so far as the action of the combined punch and core D in Figs. 4 and 5 is concerned, the same simply operates as a core to shape the interior of the watch-case center and regulate its depth, such core being formed with an enlarged cylindrical shaping and cutting end, *e*, over which the mouth end of the cup A is bent by means of an upper inwardly-beveled annular die, F, which is brought down on the mouth portion of the cup for the purpose. The combined punch and core D is then inclosed within the unpunched watch-case center, as shown in Fig. 5, and to extract it, as well as to punch out the center *d*, its flanged cutting and shaping portion *e* is forced, by the application of suitable pressure, through the bottom of the metal ring or cup in the die B, as shown in Fig. 6, thus punching out the center *d* and shaping or finishing the watch-case center, as illustrated in Figs. 7 and 8.

I claim—

1. The combined core and punch D, in combination with the dies B F, essentially as and for the purposes herein set forth.

2. The combination of the series of dies B C F with the combined core and punch D, having an enlarged cutting end, *e*, and arranged to pass out through the opening punched after the metal has been shaped around it, substantially as described.

FRÉDÉRIC ECAUBERT.

Witnesses:

MICHAEL RYAN,

FRED. HAYNES.