F. ECAUBERT.

MANUFACTURE OF WATCH-CASES.

No. 187,753. Patented Feb. 27, 1877.

Fig. 1

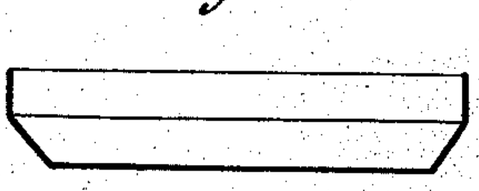


Fig. 2

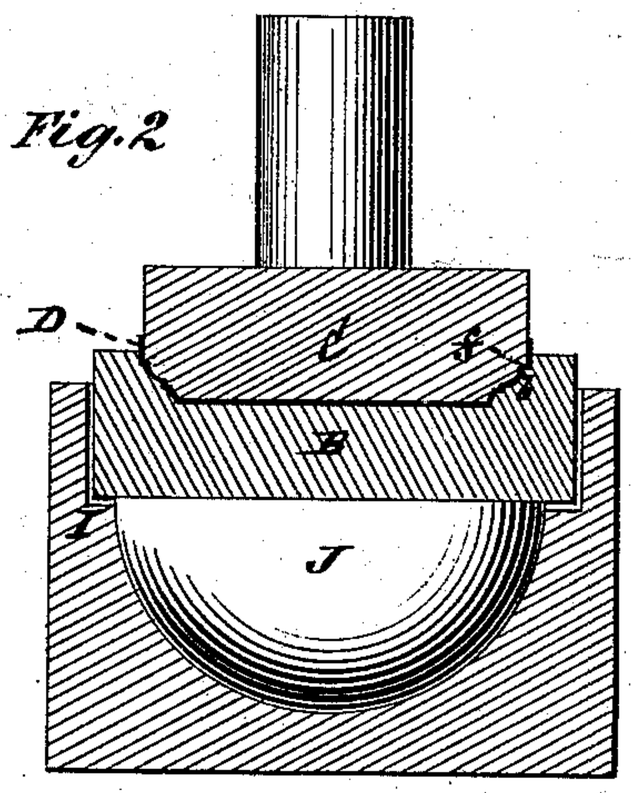


Fig. 5

Fig. 4

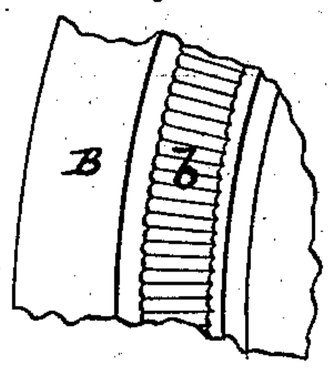


Fig. 3

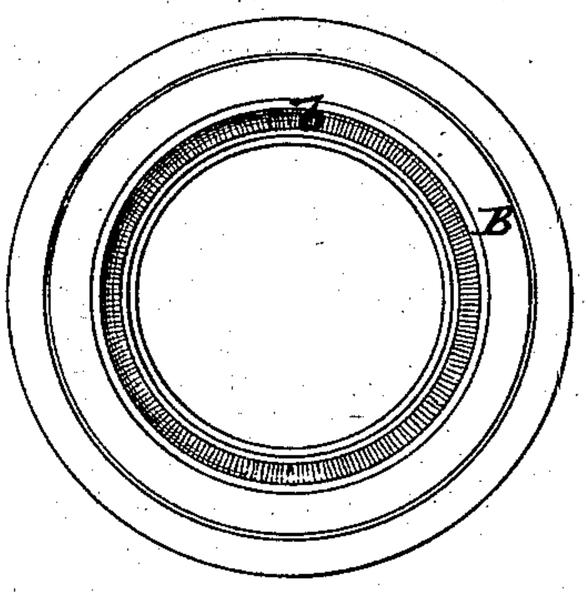


Fig. 6

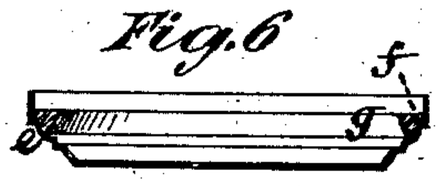
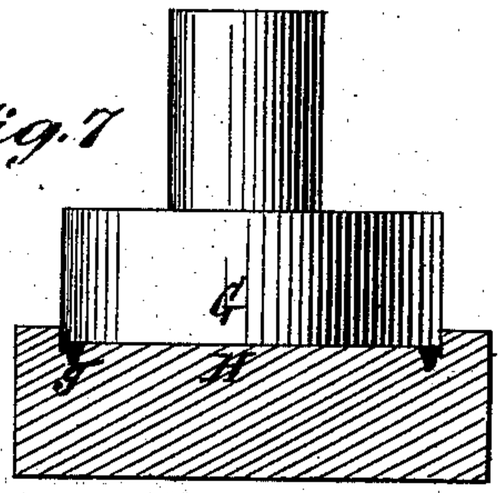


Fig. 7



Witnesses:
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Fred. Haynes

Frederic Ecaubert
by his Attorneys
Brown & Allen

UNITED STATES PATENT OFFICE.

FRÉDÉRIC ECAUBERT, OF NEW YORK, N. Y.

IMPROVEMENT IN THE MANUFACTURE OF WATCH-CASES.

Specification forming part of Letters Patent No. **187,753**, dated February 27, 1877; application filed January 31, 1877.

To all whom it may concern:

Be it known that I, FRÉDÉRIC ECAUBERT, of the city, county, and State of New York, have invented certain new and useful Improvements in the Manufacture of Watch-Cases; 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, forming part of this specification.

This invention relates to the manufacture of the fronts and backs of watch-cases, and more particularly to such of said fronts and backs as have milled exterior surfaces around their rims or borders.

The invention consists in a novel construction of male and female dies, to form and shape out of the same disk or piece of metal both the center portion and rim of the front or back of a watch-case, so as to give to said front or back its required profile in transverse section, and to simultaneously mill the exterior of its rim or border, and to strike up at the same time, within it, the shoulder which supports the ring that snaps on the case center, whereby time, labor, and metal are economized in the construction of the watch-case front or back.

Figure 1 represents a transverse section of a partly-cupped blank, suitable for making a watch-case front or back, in accordance with my invention. Fig. 2 is a vertical section of said blank and the dies used to shape it into a front or back having a milled rim, the dies being represented as in the course of completing their operation, and the lower die being shown as resting on an automatically and universally adjustable seat. Fig. 3 is a plan of the lower die and its seat, and Fig. 4 a like view of a portion of said die upon a larger scale. Fig. 5 is an edge view of the watch-case front or back as it comes from the dies, and Fig. 6 a transverse section of the same, with the ring which snaps on the watch-case center inserted and secured within the front or back. Fig. 7 is a vertical section of a pair of dies used to produce said ring, and as in the act of forming the same.

Prior to describing my invention, as shown in the drawing, I would explain that heretofore it has been customary in manufacturing fronts and backs of watch-cases having externally milled borders to make the center portion of the front or back of a separate piece of metal from the rim thereof and afterward to braze the two together. This sectional construction has been necessary to save precious metal, owing to the fact that it has been requisite, under the mode of manufacture heretofore practised, to make the rim portion of the front or back much thicker than the center portion thereof, to provide for turning up the rim into form, both externally and internally, and to produce the milled surface around the rim by a special milling-tool. Such is both a wasteful and expensive mode of producing said watch-case fronts and backs.

By my improvement I am enabled to produce a like article with the rim of no greater thickness of metal than the center portion, and, consequently, to form the entire watch-case front or back of one and the same piece, and, by the same operation of a pair of dies in a stamp or press, to fashion said front or back into its required form as regards the transverse profile thereof, to mill its rim or border, and to form a shoulder for support of the internal ring, which snaps on the case-center. Thus I take a partially-cupped metal blank, as shown in Fig. 1, and introduce it within a female die, B, the internal surface of which is made to correspond with the required configuration of the exterior of the watch-case front or back to be produced. Such internal structure of the die B also includes a milled annular portion, *b*. The blank having been inserted within said lower die I bring down upon it a male die, C, having a transverse profile to correspond with that of the female die, but plain, instead of milled, where it conforms with the portion *b* of the female die. This action both shapes the watch-case front or back D, externally mills it, as at *e*, Fig. 5, around the rim, and, by the construction of the dies B C, forms an internal shoulder, *f*, all by one and the same operation. Perfect truth or regularity of form, too, is insured for said watch.case front or back. The internal shoulder *f* serves to support a ring, *g*, which is produced by means of dies G H, and which is soldered or braced to its place within the front or back D. This ring snaps on the watch-case center.

As, however, in the production of watch-

case fronts and backs by means of dies, whether said fronts and backs are milled externally or not, there is a liability, by reason of unequal wear of the dies, or of difference in the hardness of the metal thereof, or of the metal under operation, of the dies failing to compress equally at corresponding points all around, I place the female die B within or on an automatically-adjustable seat, composed, for instance, of a cup, I, and partially-spherical block J, which fits loosely within a similarly-shaped cavity in the cup, and which supports the die B.

I claim—

The female die B, constructed with an internally annular milled surface or portion, *b*, in combination with the male die C, substantially as shown and described, whereby the watch-case front or back is not only struck up into form, but is milled on its border or rim, and formed with an internal ring-supporting shoulder, *f*.

FRÉDÉRIC ECAUBERT.

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