C. THIERY.

Improvement in Dies for Swaging-Up Watch-Cases.

No. 130,603. Patented Aug. 20, 1872.

Fig. 7.

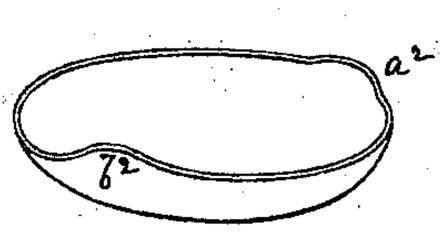

Fig. 1.

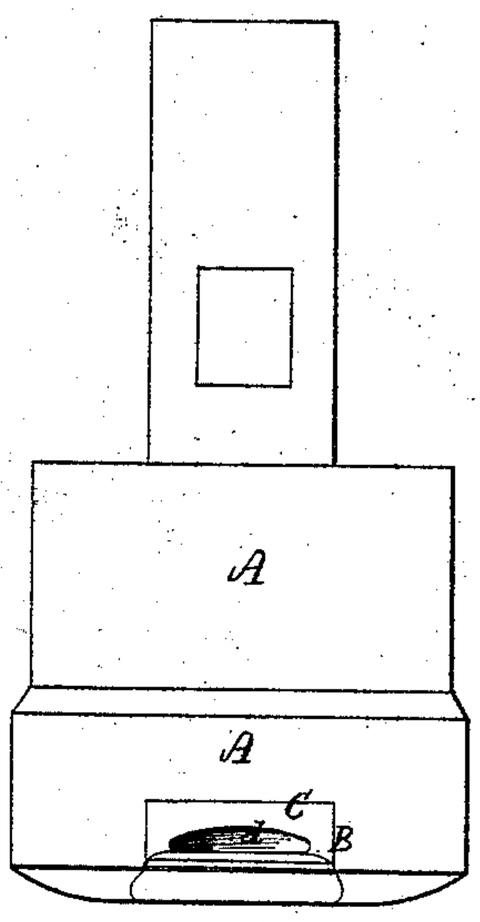

Fig. 3.

Inverted.

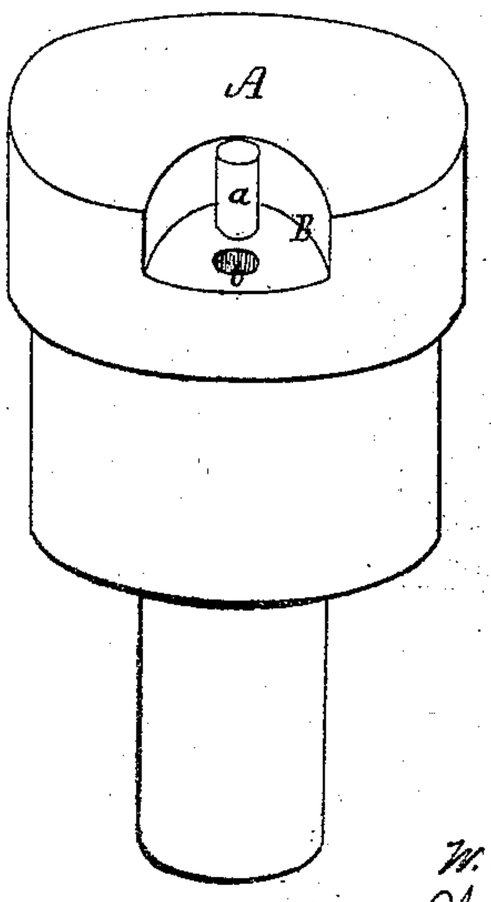

Fig. 6

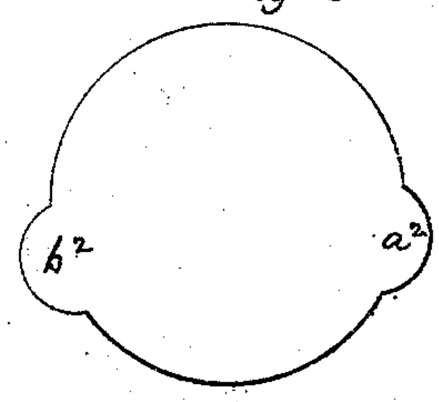

Fig. 2.

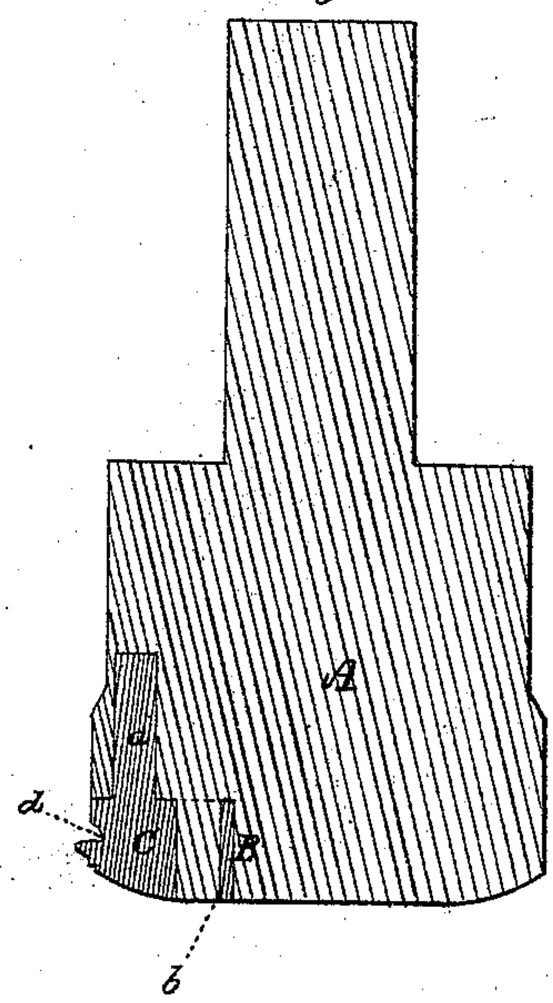

Fig. 5.

Inverted.

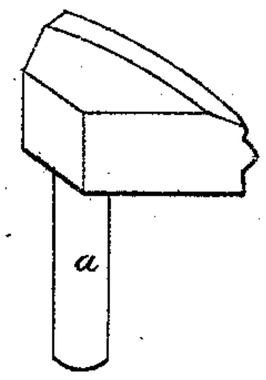

Fig. 4.

Inverted.

Witnesses.
W. Geo. Alden
W. E. Boardman

Charles L. Thiery.
by F. Curtis. Atty.

UNITED STATES PATENT OFFICE.

CHARLES L. THIERY, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN DIES FOR SWAGING UP WATCH-CASES.

Specification forming part of Letters Patent No. **130,603**, dated August 20, 1872.

Specification describing an Improvement in Dies for the Manufacture of Watch-Cases, invented by CHARLES LOUIS THIERY, of Boston, Suffolk county, Massachusetts.

In the manufacture of watch-cases by machinery under the system upon which this improvement is based the elementary portions of the case—that is, the center and covers—are each struck up or formed from a homogeneous piece of metal. In fashioning the cover containing the "hinge-bearer" or stay it has been found necessary heretofore to braze or solder to the cover the small piece of metal requisite to constitute this "bearer," as the system of manufacture above referred to has not anticipated and provided for the inability to remove the cover from the male die, after the formation of the "bearer," which projects inwardly toward the center of the cover and of the die. To provide for this emergency is the object of this improvement; and to this end I form the portion of the male die which produces this bearer in a piece of metal independent of such die, and let it into the periphery of the latter in such manner as to be readily detached therefrom and removed from it adhering to the cover after the formation of the bearer.

The drawing accompanying this specification represents, in Figure 1, an elevation, and in Fig. 2 a section of a male die containing my improvement; Fig. 3 being a perspective view of the major portion of such die, and Fig. 4 a perspective view of the lesser or auxiliary portion thereof; while Fig. 5 is a perspective view of a modification of the auxiliary die, to be hereinafter explained.

In the drawing, A denotes the male die, which I employ, in connection with a corresponding matrix, in the impressing or forming up of certain portions of a watch-case, this die being a cylindrical block of steel of the proper shape. As before premised, the cover of a watch-case has heretofore, under certain patented methods practiced by myself, been impressed or formed with the die and mold above named, with the exception of the "hinge-bearer," which has been subsequently added to it. As this bearer extends inwardly toward the center of the cover upon its concave side, such cover could not be detached from the die if a solid piece was added to the latter for the purpose of producing the bearer. To effect my present object I create, in one side of the working end or head of the die A, a cavity or depression, B, of any suitable shape for securely holding within it an auxiliary die, which is shown at C in the drawing as a metal block of a size to fill the cavity, and of a general external form to constitute a continuation of the periphery of the die A. The die A and its sectional block or die C are to be provided with any suitable joint or means of preventing displacement or change of position of the two, the means herein shown to effect this result being to add to the inner end of the block C and to the adjacent end or bottom of the recess B a projecting pin, *a*, which pins enter, respectively, coinciding sockets *b* formed in each die to receive them. The recess B, as herein shown, is semicircular in a cross-section; but this form is not arbitrary, as it may be polygonal, as shown in Fig. 5 of the drawing, and provided with one steady-pin, or otherwise shaped and provided, so long as its peripheral portion corresponds with that of the main die in general outline. The peripheral portion of the auxiliary die is formed with a shallow depression or notch, *d*, cut in its face, as shown in the drawing, this depression being of a size and shape corresponding to that of the "hinge-bearer," which it is to fashion. In use the descent of the die into the matrix and the compression of the metal of the cover about the former, in the formation of such cover, impresses the said metal into the depression *d*, and by this means produces the "hinge-bearer;" the auxiliary die adhering to the interior of the finished cover, and, being withdrawn by and with it, forms the main die, and after removal from the cover being returned to its recess *b*.

In the system of manufacturing watch-cases by producing their main portions in one homogeneous piece of metal, as practiced by myself under various Letters Patent issued to me, I have found that the metal blank, as originally employed, did not contain sufficient "stock" to produce the "hinge-bearer," "thumb-piece," &c., in the perfect condition in which my system anticipated; and to remedy this objection I form the punch, with which I cut the blanks,

in such manner as to create upon each blank an offset or extension of a size sufficient to obtain the requisite metal from which to produce the "hinge-bearer" or other projecting part of a watch-case. Figs. 6 and 7 of the drawing represent, in two stages of progress, a metal blank for producing a cover, the first being a flat plate as cut by the punch, and having two curved offsets or extensions, a^2 b^2 projecting beyond its periphery, one of such projections being for the "hinge-bearer" and one for the "thumb-piece." Fig. 7 represents the blank as formed into a shallow cup, in readiness to be introduced to the machine which molds it into perfect shape, the projections a^2 b^2 being, by the action of the machine, reduced and fashioned into the desired object.

Claim.

A male die for forming that portion of a watch-case or cover carrying the "hinge-bearer," consisting of the auxiliary removable die C, constructed as herein described, in combination with the main die A, substantially as set forth.

CHARLES LOUIS THIERY.

Witnesses:
F. CURTIS,
W. E. BOARDMAN.