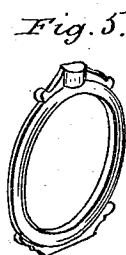
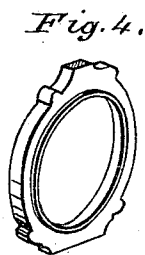
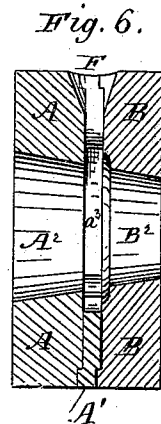
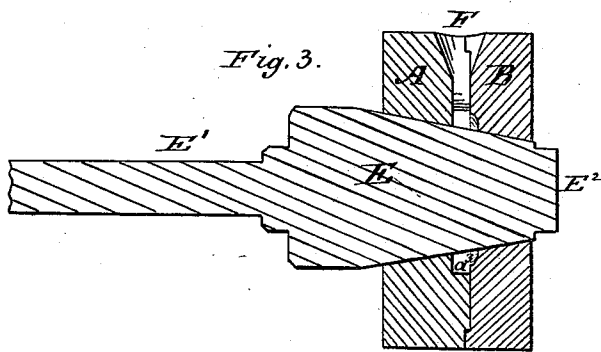
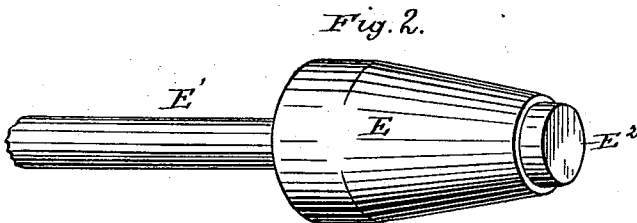
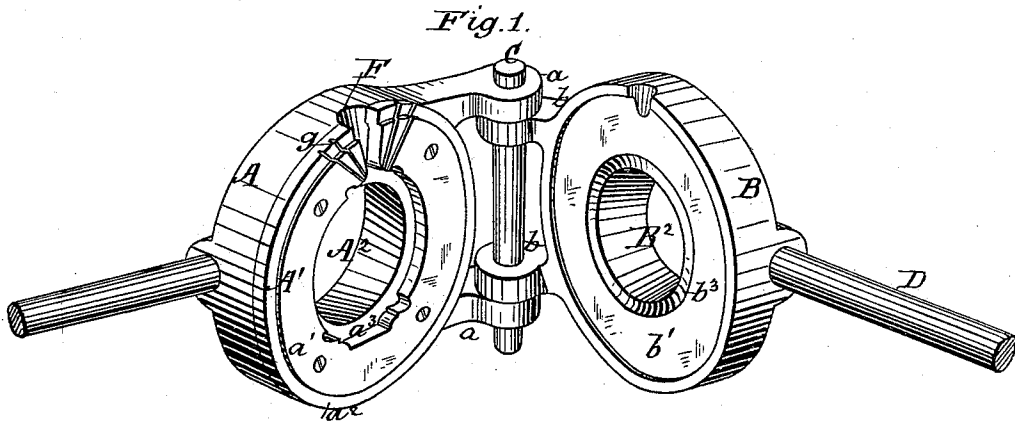


(No Model.)  
**L. DORIoT, L. LONGUET, J. CHEVRELOT & E. CHARPIAT.**  
 MOLD FOR CENTER RIM AND BEZEL OF WATCH CASES.

No. 244,202.

Patented July 12, 1881.



Witnesses  
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# UNITED STATES PATENT OFFICE.

LOUIS DORIOT, LEON LONGUET, JÉAN CHEVRELOT, AND EDOUARD CHARPIAT, OF ST. LOUIS, MISSOURI.

## MOLD FOR CENTER RIMS AND BEZELS OF WATCH-CASES.

SPECIFICATION forming part of Letters Patent No. 244,202, dated July 12, 1881.

Application filed May 26, 1881. (No model.)

*To all whom it may concern:*

Be it known that we, LOUIS DORIOT, LEON LONGUET, JÉAN CHEVRELOT, and EDOUARD CHARPIAT, of St. Louis city and State of Missouri, have invented a new and useful Mold for Molding the Center Rims and Bezels of Watch-Cases, of which the following is a specification.

Our invention relates to improvements in molds in which a central core is used to give form to the interior of the article to be molded, while the exterior thereof is shaped by the mold.

Our invention relates, mainly, to molds for molding the center rim and bezel of watch-cases made with ornaments projecting from the outer rim of the case, although it may be used for molding plain cases or other articles.

Heretofore watch-cases provided with projecting ornaments adjoining the stem, and on the part of the rim opposite said stem, have been made of many distinct pieces, the center rim being made of at least three pieces, and each bezel of three pieces, making at least nine pieces for the central portion of the case alone, requiring much time in forming each piece, fitting one to the other, soldering, &c., besides the large amount of gold lost in filing, &c., producing a case having lines of solder that very often interfere with the engraving of the case.

The objects of our improvements are to produce the center rim and bezel of a watch-case with its projecting ornaments cast in one piece, without blisters, and thus obviate the above-mentioned defects. Many attempts have heretofore been made to cast said parts of a watch without blisters. Sand molds and others have been tried; but, owing to the presence of air in the mold and to the want of passages for its immediate exit around the whole periphery of the device cast, the result was a failure. We have accomplished the desired result by means of the mold illustrated in the accompanying drawings, in which—

Figure 1 represents a perspective view of the mold open to show the interior. Fig. 2 represents a perspective view of the central plug or core of the mold removed therefrom. Fig. 3 represents a vertical central section of

the mold and central plug or core in position for molding. Figs. 4 and 5 represent respectively, and in perspective, the center rim and bezel of a watch, each one cast in one piece with its projecting ornaments in a mold constructed according to our invention. Fig. 6 is a vertical section of the mold shown in Fig. 1.

In the drawings, A and B represent the two halves of the mold, hinged together by means of a pin, *c*, passing through two pairs of lugs, *a* and *b*, projecting from the periphery of the mold. Each half of said mold is provided with a handle, D, so placed that when the mold is closed the operator can grasp them in one hand. The periphery of the inner face, *a'*, of the mold A is turned off at *a<sup>2</sup>* to correspond with and enter within the rim of the shallow cavity *b'* in the inner face of the mold B, so that the two halves of the mold will be closely united when brought together. The inner face of the mold A is cut away in the center at *a<sup>3</sup>*, according to the predetermined size and design, to give form to one side and to the outer periphery of the article to be molded, the face *b'* of the mold B being also generally recessed in the center at *b<sup>3</sup>*, to give form to the opposite side of the article. The interior configuration of said article is given by the periphery of the plug or core E, so constructed as to extend through both halves of the mold. This plug E is made conical, and of such size as to fit closely, but not air-tight, the central conical openings, *A<sup>2</sup>* and *B<sup>2</sup>*, made in the halves of the mold, and is also provided with a handle, E'. The periphery of the mold is provided with a sprue-hole, F, (cut partly out of each half of the mold,) at an angle of ninety degrees, or thereabout, with the axis of the plug E, through which hole the melted metal is poured into the mold, and a series of vent-holes, *g*, on each side of the sprue-hole, to facilitate the escape of air at the top of the mold.

In Fig. 1 the inner face of the mold A is shown as made of a distinct piece, A', (giving the form to the outer periphery of the article to be molded,) screwed to the mold A; but although some saving may thus be made in the cost of the mold by forming rings having the same inner periphery, but distinct ornamenta-

tion, or a different outer periphery, by simply changing the piece A', we prefer to make each half of the mold in one piece, as shown in Fig. 3. This mold is made out of metal, and the plug is also preferably made of metal, as it is the best material to produce smooth castings.

In operating with this mold the parts to receive the melted metal are first rubbed with horse-hoof horn and a little oil, and wiped off clean, and the mold and plug heated to about 400° Fahrenheit. The mold is then closed, the handles being partly cooled off with water. They are grasped with a piece of cloth by the operator, and the plug E pressed snugly within the conical recess of each half of the mold, as shown in Fig. 3, and the metal poured in the sprue-hole until it fills the mold. The air within, being thereby brought to a very high temperature, escapes not only through the vent-holes *g*, but through the small interstices found all around between the plug and the metal of the mold forming the seat of said plug, on both sides of the consolidating metal, and thus the presence of blisters is entirely obviated. Immediately after pouring the metal, and while it is yet red-hot, the plug E is withdrawn, either by its handle or by hitting it gently on its small end E<sup>2</sup>, if held too fast, the mold opened, and the casting dropped out or removed therefrom, and the operation can be repeated.

By this means of casting ornamented watch-case rims and bezels, in place of forming them of independent pieces fitted and united to-

gether by the common process, we find that a workman can finish about five times as many cases as heretofore in the same length of time.

Having now fully described our invention, we claim—

1. A mold for casting the center rim and bezel of watch-cases, composed of two halves, A and B, united together and having a tapering central opening extending through each half, with a conical plug adapted to fit said opening, (but not air-tight,) the axis of the plug being at right angle with the sprue-hole of the mold, substantially as described.

2. The combination of the part A of a mold, having the central conical opening, A<sup>2</sup>, and recess a<sup>3</sup>, and part B, having conical opening B<sup>2</sup> extending therethrough, with plug E, having its axis substantially at an angle of ninety degrees to the axis of the sprue-hole of the mold, as described.

3. The combination of the part A of a mold, having the conical central opening, A<sup>2</sup>, and a recess to receive the melted metal, and part B, hinged to part A and having the conical opening B<sup>2</sup> extending therethrough, with plug E, passing through openings A<sup>2</sup> and B<sup>2</sup> and fitting therein, but not air-tight, substantially as and for the purposes described.

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