C. H. Field,

Making Watches,

No. 54,136. Patented Apr. 24, 1866.

Fig. 1.

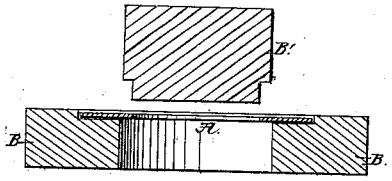


Fig. 2.

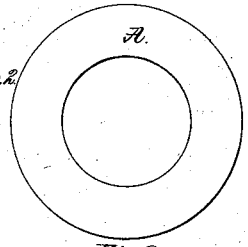


Fig. 3.

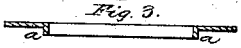


Fig. 4.

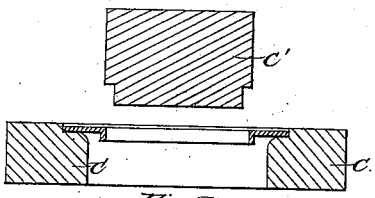


Fig. 5.

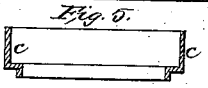


Fig. 6.

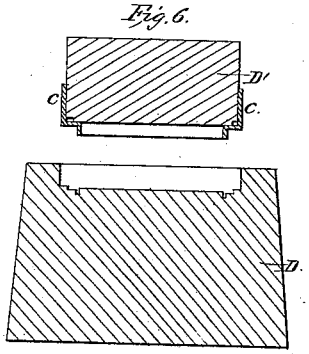


Fig. 7.

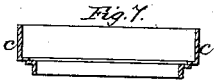


Fig. 13.

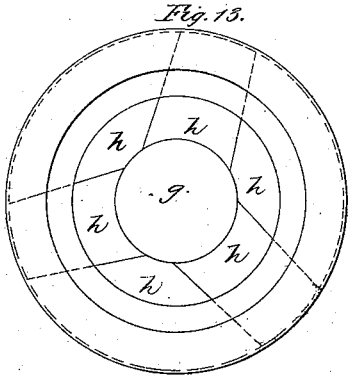


Fig. 14.

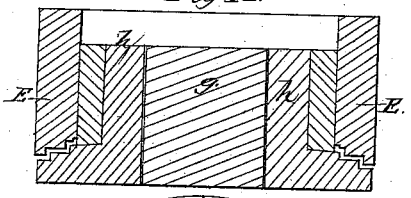


Fig. 15.

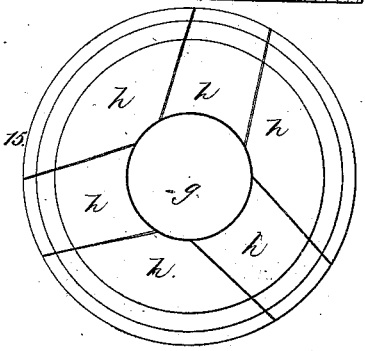


Fig. 9.

Fig. 8.

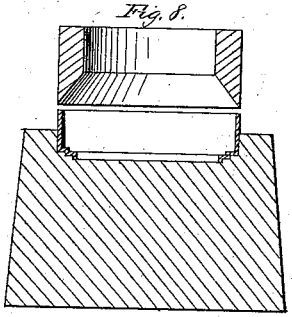


Fig. 10.

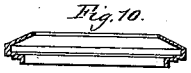
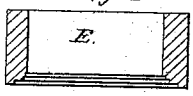


Fig. 11.



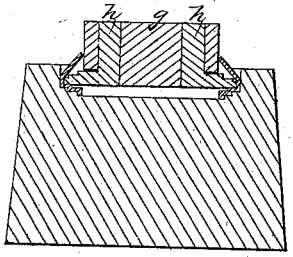


Fig. 12.

Witnesses:
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Edwd Shafer

Inventor:
Chas. H. Field
by his Attys
Munn, Munn & Shannon

UNITED STATES PATENT OFFICE.

CHARLES H. FIELD, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN THE MANUFACTURE OF WATCH-RIMS.

Specification forming part of Letters Patent No. **54,136**, dated April 24, 1866.

To all whom it may concern:

Be it known that I, CHARLES H. FIELD, of Providence, in the county of Providence and State of Rhode Island, have invented a new and Improved Mode of Making Watch-Rims; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 shows, in section, the first die which is used in the operation of producing the rims. Fig. 2 shows the perforated plate before it is subjected to the pressure of said die. Fig. 3 shows the plate after it leaves the first die. Fig. 4 shows, in section, the second die for pressing the plate into the form shown in Fig. 5. Fig. 6 is a diametrical sectional view of the die and counter-die for producing the form shown in Fig. 7. Figs. 8 and 9 show the beveled-edge contractors for drawing in the upper edge of the rim, as shown in Fig. 10. Fig. 11 show the dies for producing the finished rim, as shown in Fig. 12. Figs. 13, 14, and 15 are views of the sectional die which is used in the last stage of the process.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to produce a watch-rim from a single piece of metal by means of dies.

Before my invention watch-rims were made in sections and these sections brazed or soldered together, requiring considerable time and labor to make them present a neat finish. This objection I have obviated by constructing each rim of a single piece of metal, as will be hereinafter described.

To enable others skilled in the art to understand my invention I will describe its construction and operation.

I first take a perforated ring, A, and anneal it and place it within the circular recess of a perforated counter-die, B. The die B′ is then brought down and the inner edge of the ring A is depressed, so as to form an annular flange, *a*, as shown in the sectional view, Fig. 3. This flanged ring A is then placed upon a counter-die, C, and a die, C′, is used to produce the cylindrical form shown in Fig. 5 by drawing the metal down through the central opening through the counter-die.

The cylinder thus produced is placed within the counter-die D or upon the die D′, as shown in Fig. 6, and the form shown in Fig. 7 is produced.

It is now necessary to contract the upper edge of the cylinder *c*, as shown in Fig. 10, previously to finishing the opposite side of the rim. This is done by means of two or more cylindrical dies, (shown in Figs. 8 and 9,) which have their lower ends beveled from the inside surface downward.

The rim shown in Fig. 7 is left in the counter-die D, and a sectional die (shown in Figs. 11, 13, 14, and 15) is slipped within the cylindrical portion *c* and pressed down upon one of its shoulders. The cylinder (Fig. 8) having the greatest bevel is now slipped over the hub of said sectional die and a sufficient pressure put upon it to contract the upper edge of the cylinder *c*. The second cylinder (Fig. 9) is now used precisely as stated for the cylinder, Fig. 8, and the rim shown in Fig. 10 is produced. The cylinder (Fig. 9) is then withdrawn from the hub of the sectional die, and a cylinder, E, (shown in Figs. 11 and 14) is used in its stead. This cylinder E has its lower edge or end stepped, so as to conform to and produce the stepped surfaces on the upper side of the watch-rim, as shown in Figs. 11 and 12. This completes the rim and the sectional die is removed by first withdrawing the central core, *g*, and then removing the segments *h h* one at a time.

In these several operations which I have above described the blanks may be repeatedly annealed, if desirable, so as to preserve the softness of the metal and admit of its being swaged into the required shape.

I do not confine my invention to the precise form of the dies and counter-dies shown in the drawings, as these will vary as the form and size of the watch-rims vary; nor do I confine my invention to the number of operations or stages through which the blanks are passed before the rims are finally produced, as these may be increased or diminished.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The means, substantially as herein described, for producing a watch-rim from a single piece of metal, as set forth.

CHARLES H. FIELD.

Witnesses:

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HENRY MARTIN.