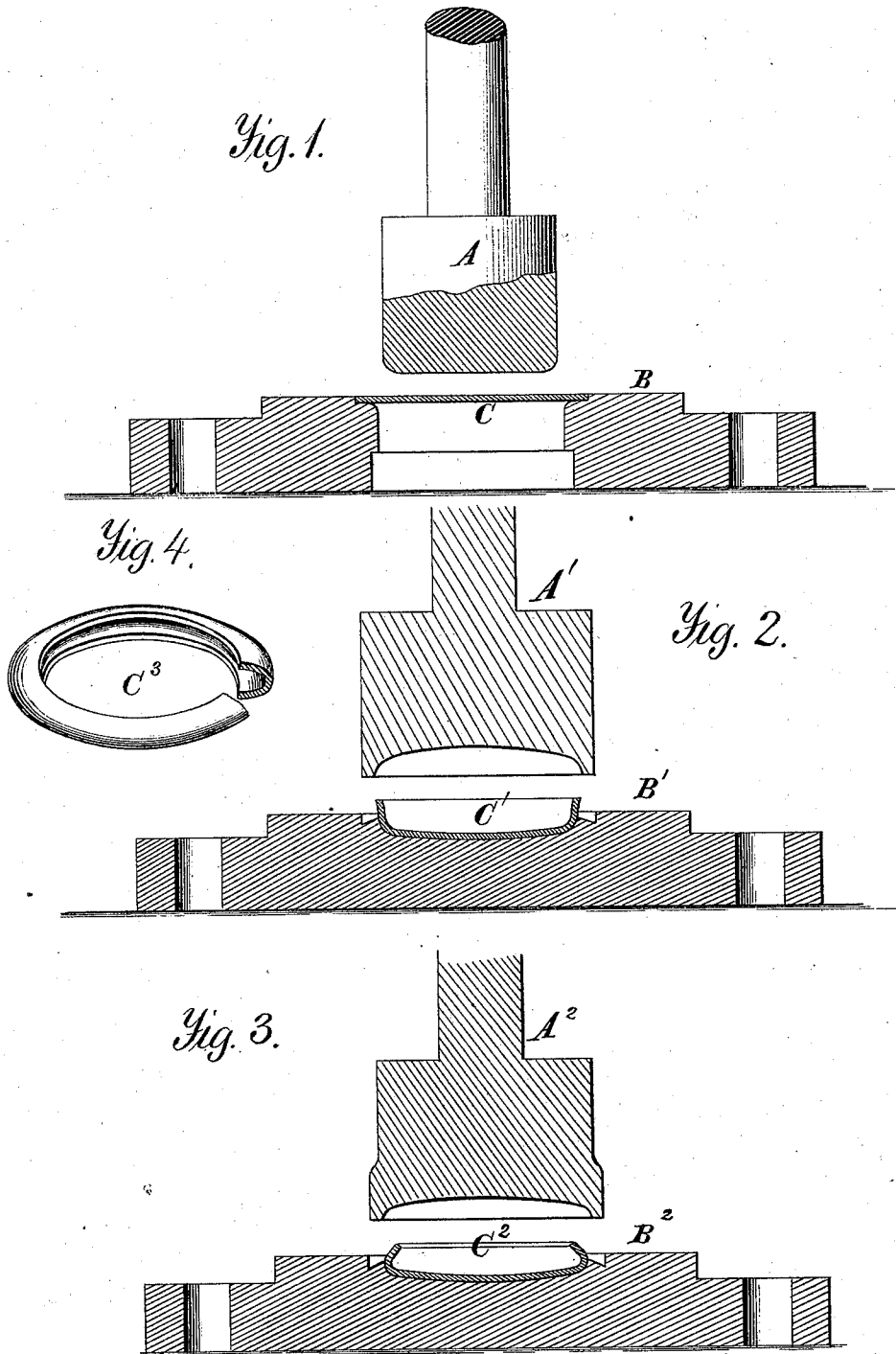


J. GELDREICH.

DIES FOR MAKING WATCH-CASE CENTERS

No. 170,076.

Patented Nov. 16, 1875.



Witnesses.
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UNITED STATES PATENT OFFICE.

JOSEPH GELDREICH, OF CINCINNATI, OHIO, ASSIGNOR TO GEORGE DOERR,
OF SAME PLACE.

IMPROVEMENT IN DIES FOR MAKING WATCH-CASE CENTERS.

Specification forming part of Letters Patent No. **170,076**, dated November 16, 1875; application filed
September 25, 1875.

To all whom it may concern:

Be it known that I, JOSEPH GELDREICH, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Dies for Forming Watch-Case Centers, of which the following is a specification:

The object of this invention is to make watch-case centers in one piece, by swaging them, by successive operations, into proper form from a plate, and then cutting out the middle, so as to leave the center of the required form.

The usual mode has been to form the centers in one piece, and then binding and uniting the ends. Swages have also been used for forming the centers; but from these mine differ in the use of the die for completing the curvature after the edge has been turned over.

In the annexed drawings, Figure 1 is a vertical section of the die which performs the first operation. Fig. 2 is a similar section of the die for performing the second part of the operation, showing the plate as formed by the first die. Fig. 3 is a similar section of the die for performing the finishing operation of turning the edge, and showing the plate as it is formed by the second die. Fig. 4 is a perspective view, partly in section, showing the center as completed.

The plunger may be attached to such a screw-press as is in common use among tinners, or to any other convenient mechanism, or it may be operated by hammering, as in other forms of swaging. The plunger or die shown in Fig. 1, at A, is the first die employed,

a simple cylindrical head rounded at the lower end. B is the female die of a corresponding form, with a recess to receive the circular blank C, to be operated upon, which is cut from a flat sheet of silver or other suitable metal. The descent of the male die swages the plate into the form shown at C¹ in Fig. 2, when it is transferred to the female die B¹, and further curved by the action of the concave die A¹ into the form shown at C² in Fig. 3. This is as far as the operation has been heretofore carried, and it is not enough to give the proper form to the center. While the plate remains on the female die B¹ or is transferred to another, B², just like it, which has a solid support for the middle portion of the plate and the correct outline of one side of the center, the die A² is brought down and the edge formed to the shape shown in Fig. 4. After this the middle portion is cut out, and the watch-case center is formed in one piece, and with a perfect equality of curvature of the two edges.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the series of dies A B, A¹ B¹, and A² B², for forming the watch-case center, by successive compressions, from a flat plate, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH GELDREICH.

Witnesses:

GEORGE DOERR,
ADOLPH GELDREICH.