

(No Model.)

3 Sheets—Sheet 1.

W. H. FITZ GERALD.

MANUFACTURE OF CROWNS FOR WATCH CASES.

No. 353,929.

Patented Dec. 7, 1886.

Fig. 1.

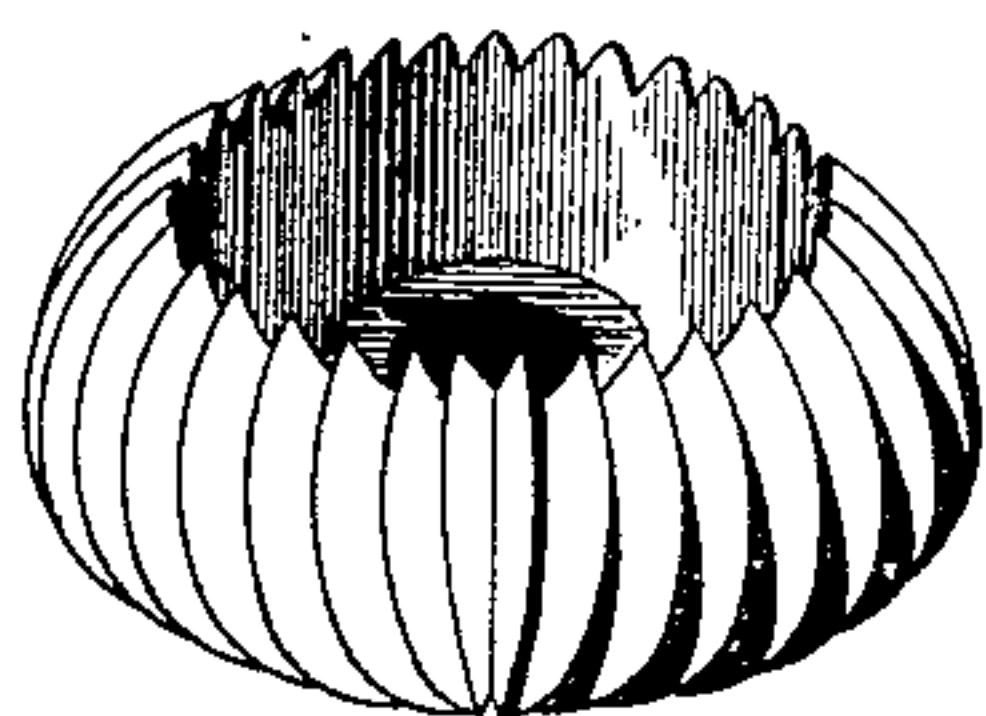


Fig. 2.

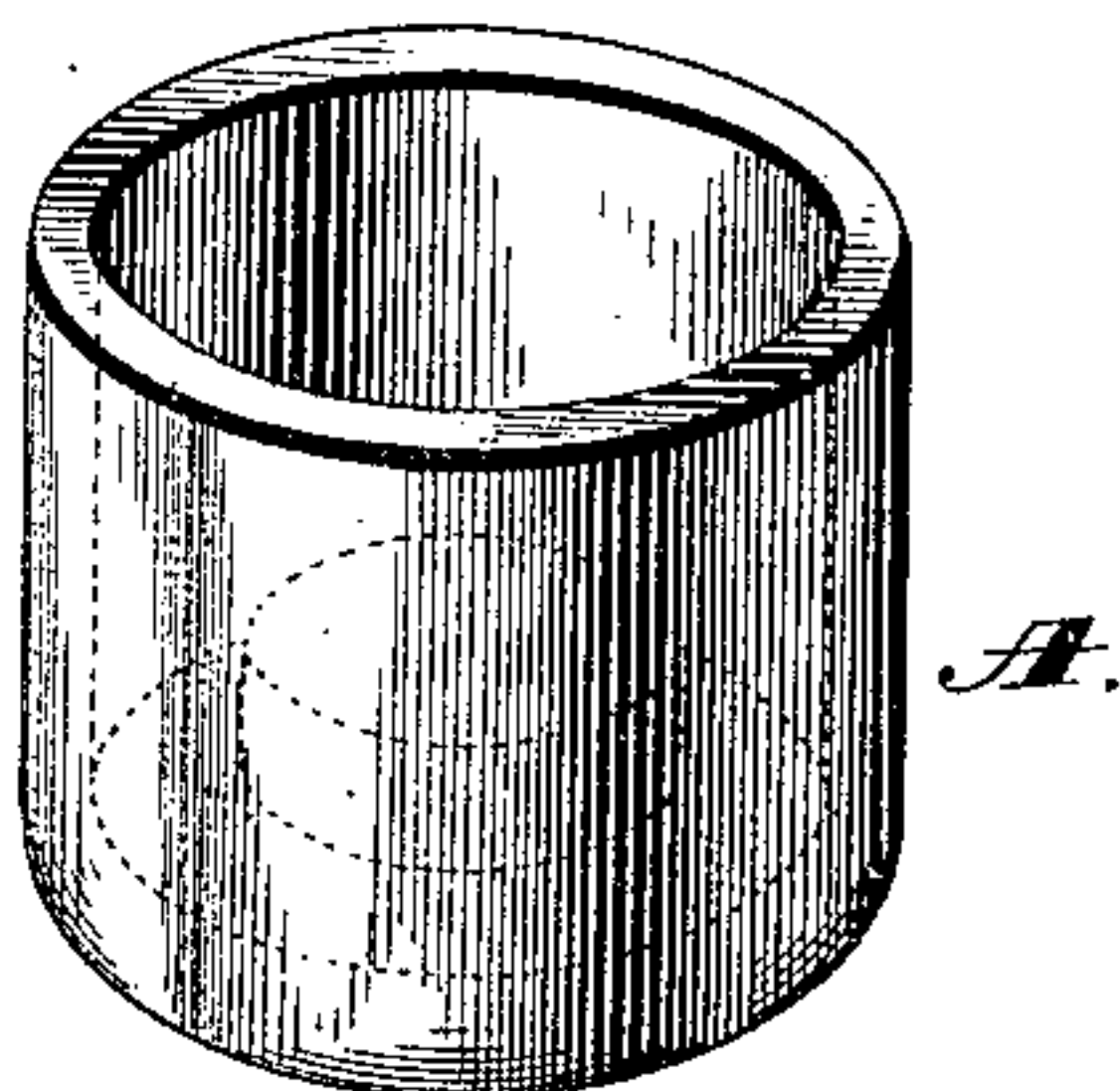
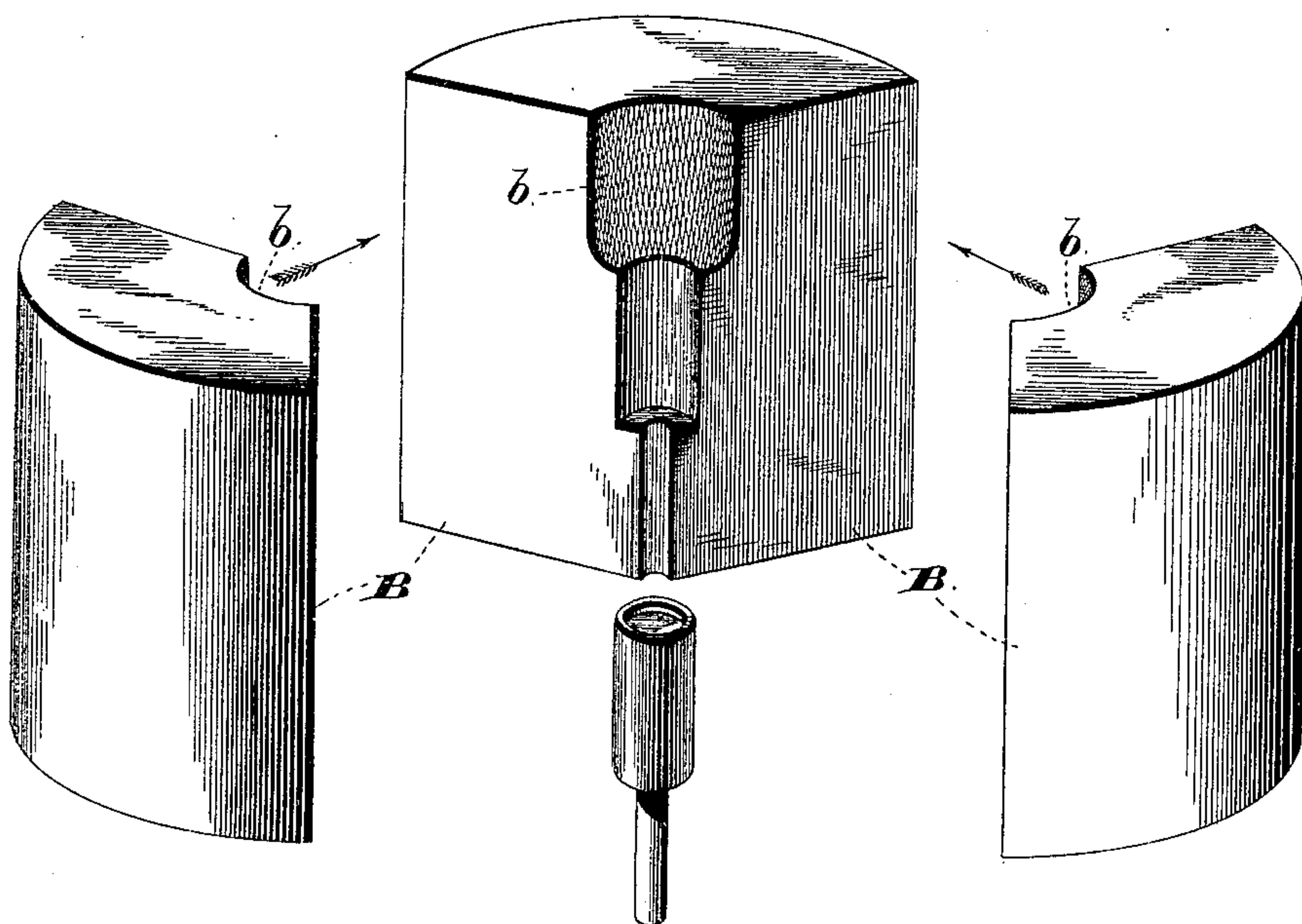
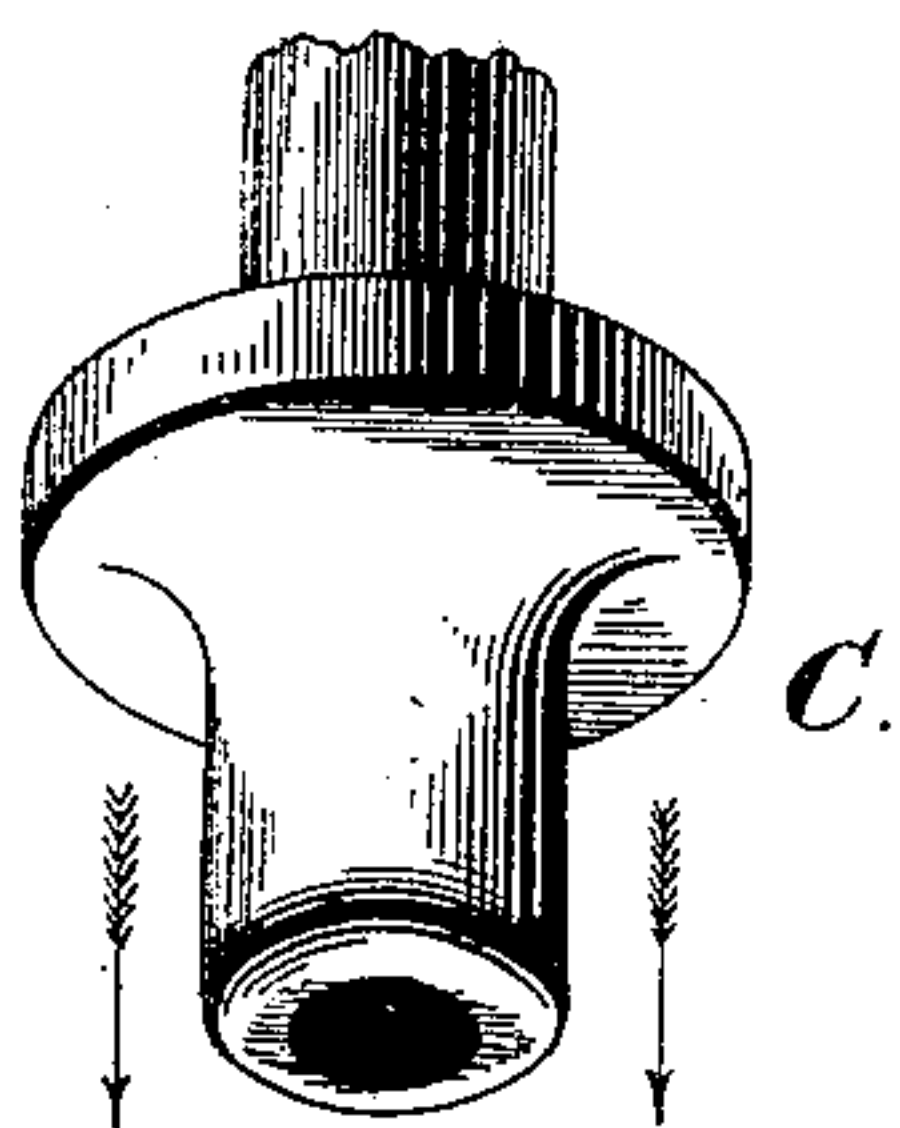


Fig. 3.



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Charles Russell, his Att'y

(No Model.)

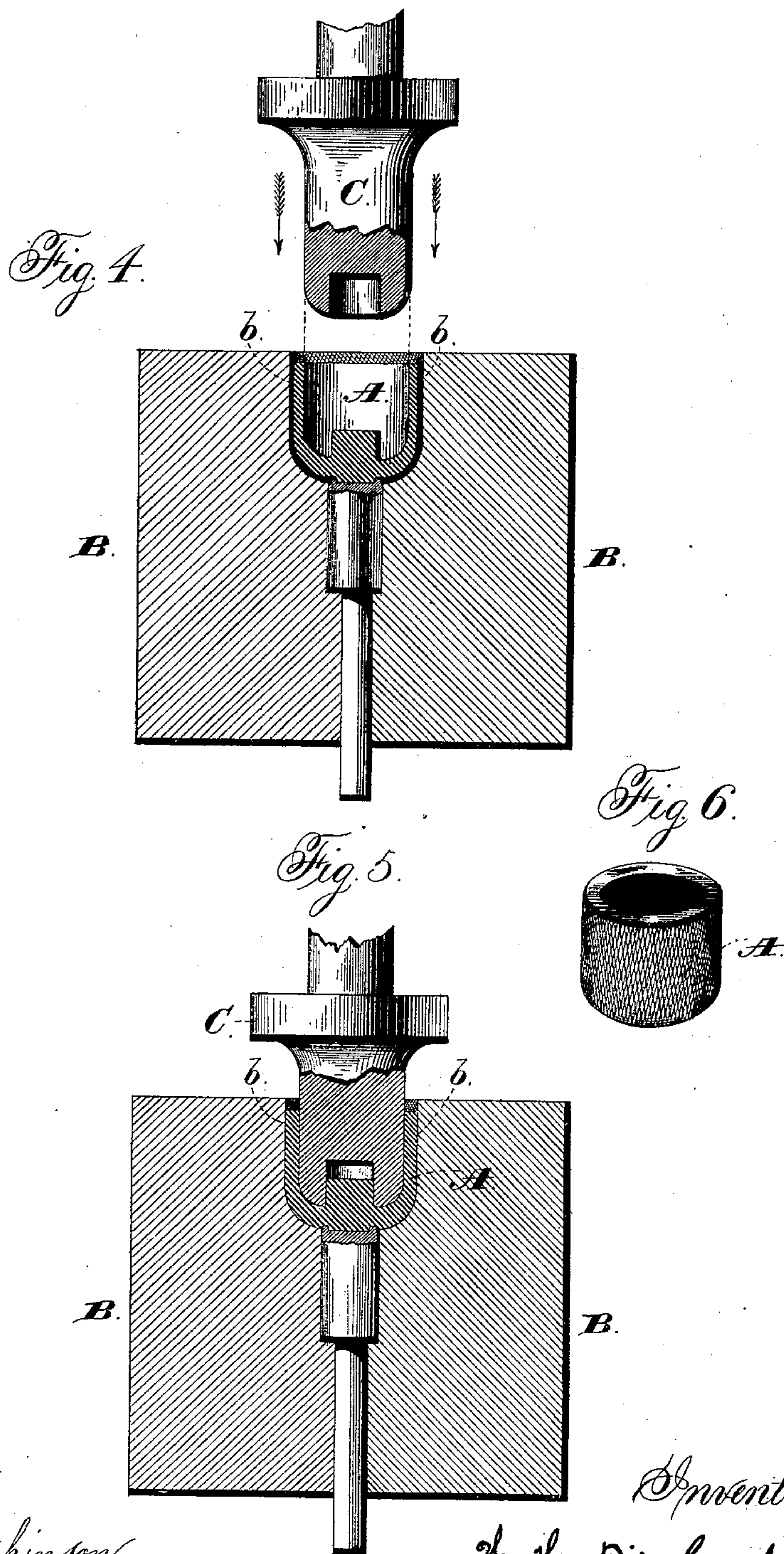
3 Sheets—Sheet 2.

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(No Model.)

3 Sheets—Sheet 3.

W. H. FITZ GERALD.

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Fig. 7.

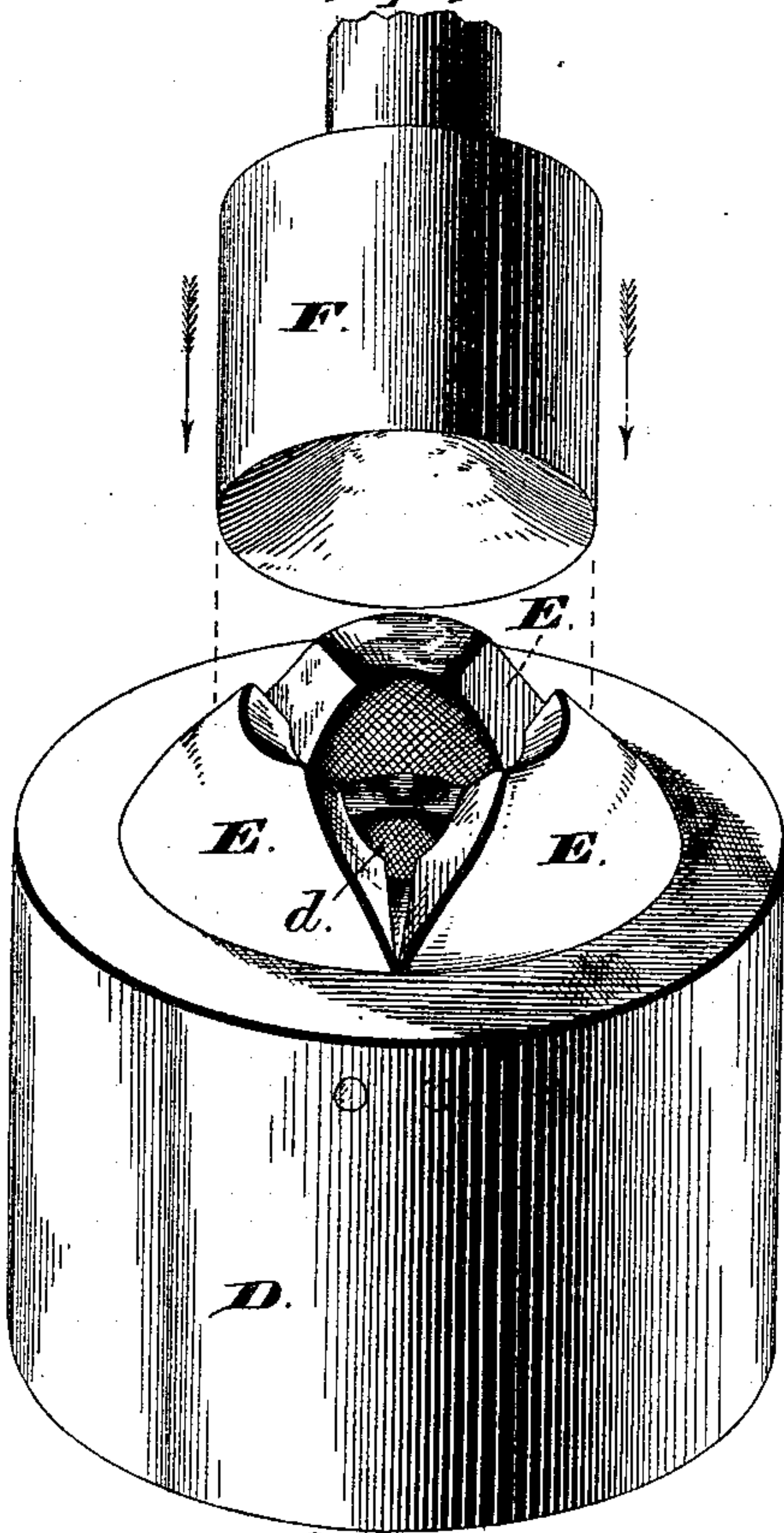


Fig. 8.

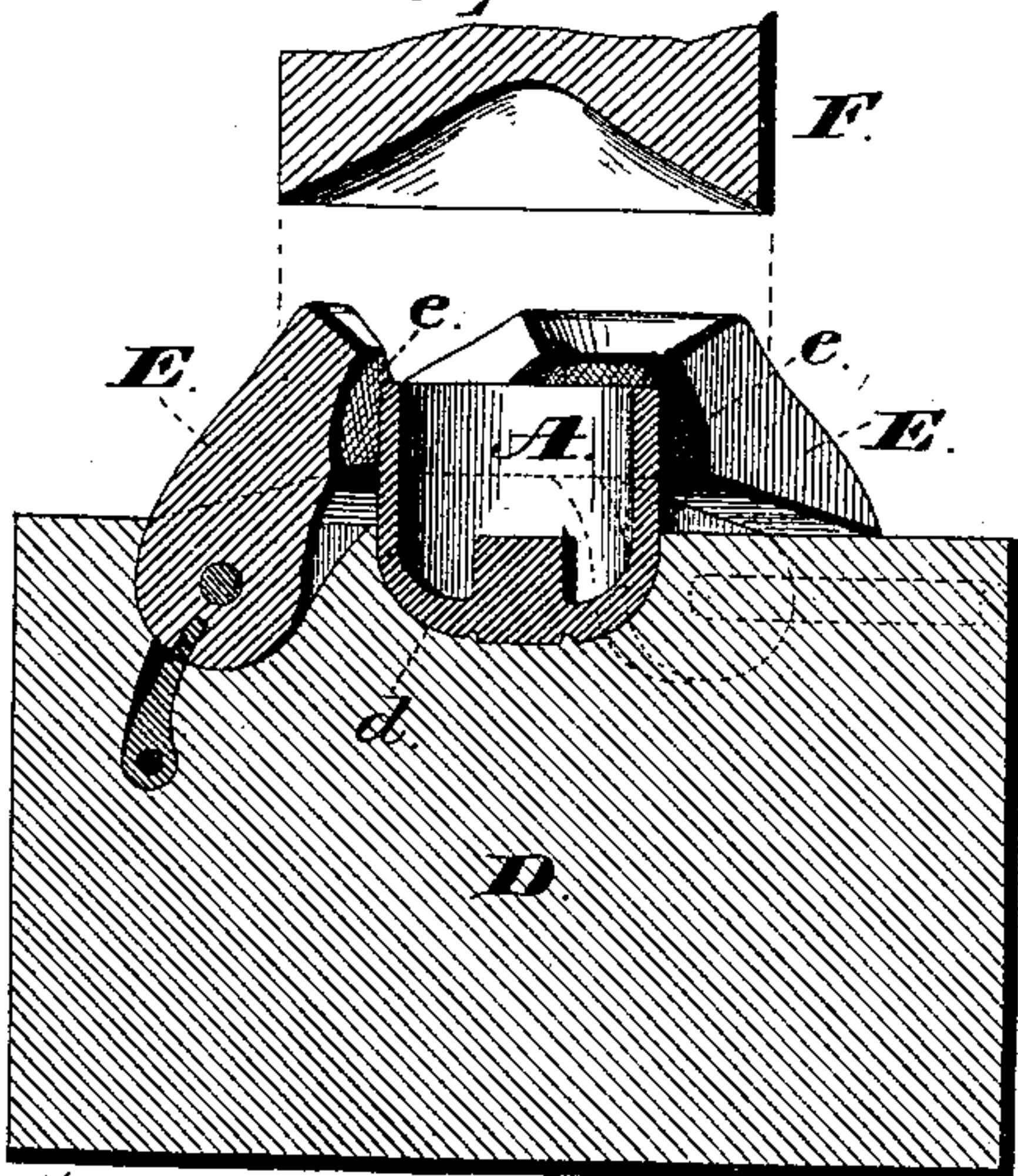


Fig. 9.

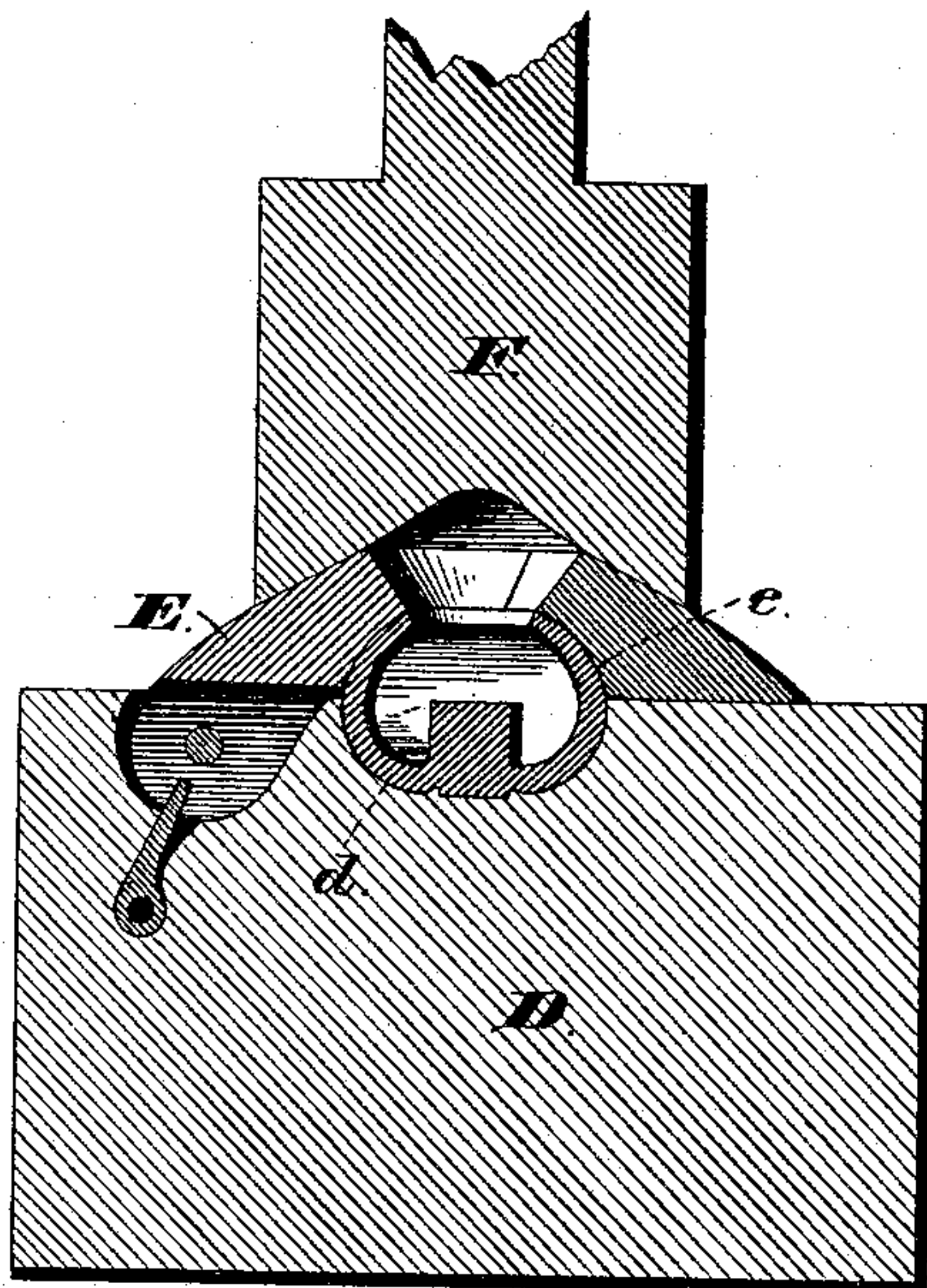


Fig. 10.

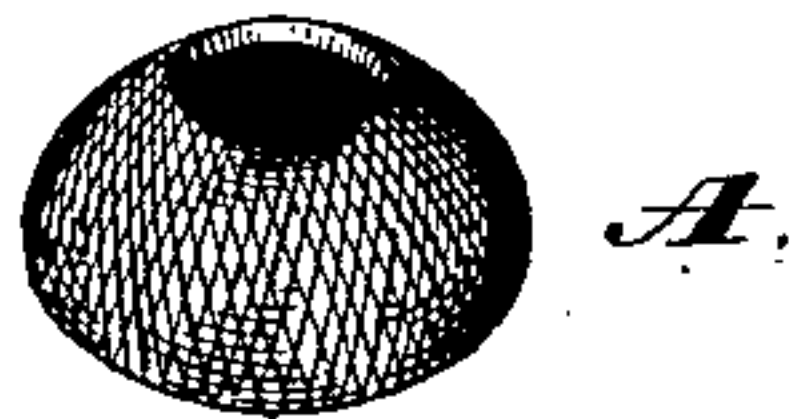


Fig. 11.



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UNITED STATES PATENT OFFICE.

WALTER H. FITZ GERALD, OF BROOKLYN, NEW YORK.

MANUFACTURE OF CROWNS FOR WATCH-CASES.

SPECIFICATION forming part of Letters Patent No. 353,929, dated December 7, 1886.

Application filed May 20, 1886. Serial No. 202,755. (No model.)

To all whom it may concern:

Be it known that I, WALTER H. FITZ GERALD, of Brooklyn, in the county of Kings, and in the State of New York, have invented certain new and useful Improvements in the Manufacture of Crowns for Watch-Cases; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of the usual form of watch-crown. Fig. 2 is a like view of a blank which is ready for completion by my method and dies. Fig. 3 is a perspective view of the first dies used separated from each other. Fig. 4 is a vertical central section of the same immediately before operating upon a crown-blank. Fig. 5 is a like view of said dies when closed together upon said blank. Fig. 6 is a perspective view of the blank after having passed through said dies. Fig. 7 is a like view of the dies employed for cupping or contracting the open end of said blank separated from each other. Fig. 8 is a vertical central section of the same immediately before operating upon the blank shown in Fig. 6. Fig. 9 is a like view of the same when closed together upon said blank, and Figs. 10 and 11 are perspective views of two forms of watch-crowns after having passed through said cupping or contracting dies.

Letters of like name and kind refer to like parts in each of the figures.

My invention is designed for use in the manufacture of watch-crowns in which the external ornamentation is wholly or in part composed of diagonal grooves or ribs or irregular lines; and to this end said invention consists, principally, in the method employed for cupping the crown, substantially as and for the purpose hereinafter specified.

It consists, further, in the dies used, substantially as and for the purpose hereinafter shown.

In the manufacture of watch-case crowns by dies the blank A is by any suitable means given the general cup shape seen in Fig. 2, after which it is placed within a die, B, that is composed of two or more sections, and the same united upon radial lines. Said die has a recess, *b*, that corresponds to the general shape of, while somewhat larger than said

blank and contains within or upon its face the configuration which it is designed to give to the finished crown. The blank A is placed within the recess *b*, either before or after the sections are closed together, and is caused to closely fill the same by means of a second die or punch, C, that has the form of the interior of said blank, but is somewhat larger than the same, so that when forced down into the blank the latter will be spread laterally and brought into such perfect contact with the face of said recess as to cause its surface to have the exact reverse of the configuration of the same. The next step is to cup the open end of the blank A, for which purpose I employ a die-block, D, which is provided at or within the center of its upper face with a recess, *d*, that corresponds in size, shape, and ornamentation of surface to the like features of the semi-spherical end of said crown, and is adapted to receive and contain the same and to permit of its ready insertion therein or removal therefrom.

Hinged upon or within the upper face of the die-block D are a number of blocks, E, preferably three, which are arranged in radial lines at equidistant points around the recess *d*, and are adapted to turn inward toward or outward from said recess. When turned inward, said pivoted blocks impinge upon the said block D, and their contiguous sides meet, so as to be practically continuous and to form a circular die superimposed upon said lower solid die.

Within each pivoted die-block E is formed a recess, *e*, that, when said die is turned inward, coincides with the recess *d* and with the recesses *e* of the other die-blocks, E, the whole constituting a recess which exactly corresponds to the size, shape, and exterior finish of the completed crown.

Each pivoted die-block E is held with a yielding pressure at the outer limit of its motion by means of a spring, as seen in Figs. 8 and 9, and is moved inward simultaneously with the other pivoted die-blocks by means of an upper die or punch, F, that has a concave lower end, which in descending engages with the inner upper ends of said pivoted die-blocks, and moves the same downward and inward. If, now, a crown-blank is placed in position within the lower die, as shown in Fig.

8, and the upper die then moved downward, the pivoted die-blocks will be caused to impinge upon the upper part of the shell of said crown and compress the same, as seen in Fig. 9, into the form shown in Figs. 10 and 11, such operation, termed "cupping," being performed without defacement of the previously-formed ornamentation of said shell.

If desired, the dies E may be arranged to slide horizontally inward, instead of moving upon pivots, as shown.

For some forms of crown it may be necessary that the bottom die, D, should be made in sections which are capable of being spread apart to receive or release the crown.

Having thus described my invention, what I claim is—

1. As an improvement in the manufacture of watch-crowns by dies, the method of cupping the shell of a partially-completed crown by placing the lower semi-spherical end of the same within a correspondingly-shaped die-recess, and causing other dies, which move upon radial lines, to impinge upon and compress the upper portion of said shell, substantially as and for the purpose specified.

2. As an improvement in the manufacture of watch-crowns, the method which consists, first, in placing a cup-shaped blank within a correspondingly-shaped die-recess that has upon or within its face any desired ornamentation, next causing said blank to closely fill said ornamented recess by forcing into the interior of the former a correspondingly-shaped but larger die, and, lastly, placing the lower semi-spherical end of said crown-blank within a corresponding die, and causing other dies,

which move upon radial lines, to impinge upon and compress the upper portion of said blank, substantially as and for the purpose set forth.

3. As an improvement in mechanism for the manufacture of watch-crowns, a die-recess which is adapted to receive and contain the semi-spherical lower portion of the shell of a partially-completed externally-ornamented watch-crown, in combination with dies that are adapted to move upon radial lines, and with means whereby said dies may be simultaneously moved inward and caused to impinge upon and curve inward the upper portion of said shell, substantially as and for the purpose shown.

4. As an improvement in mechanism for the manufacture of watch crowns, an interiorly-ornamented die-recess which is adapted to receive a cup-shaped crown-blank, and a plunger that is adapted to be pressed into the interior of said blank and force the latter against the face of said recess, in combination with a die-recess which is adapted to receive and contain the semi-spherical lower portion of said crown-blank, and with dies that are adapted to move upon radial lines and to impinge upon and curve inward the upper portion of said blank, substantially as and for the purpose shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 27th day of March, A. D. 1886.

WALTER H. FITZ GERALD.

Witnesses:

JAY WOOD,

EDW. O. WEED.