(No Model.)

C. WILHELM & F. ECAUBERT.

TOOL FOR ORNAMENTING WATCHCASES, &c.

No. 531,455. Patented Dec. 25, 1894.

Fig. 2.

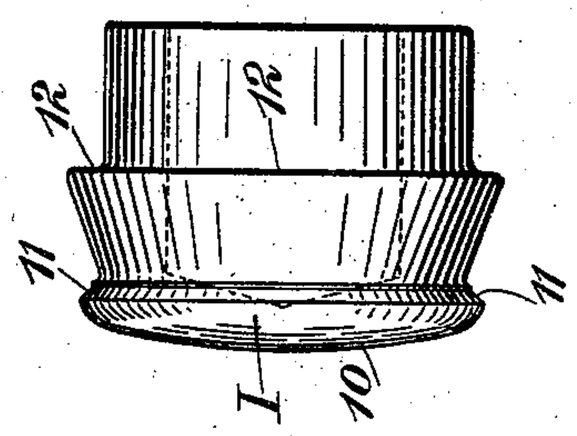
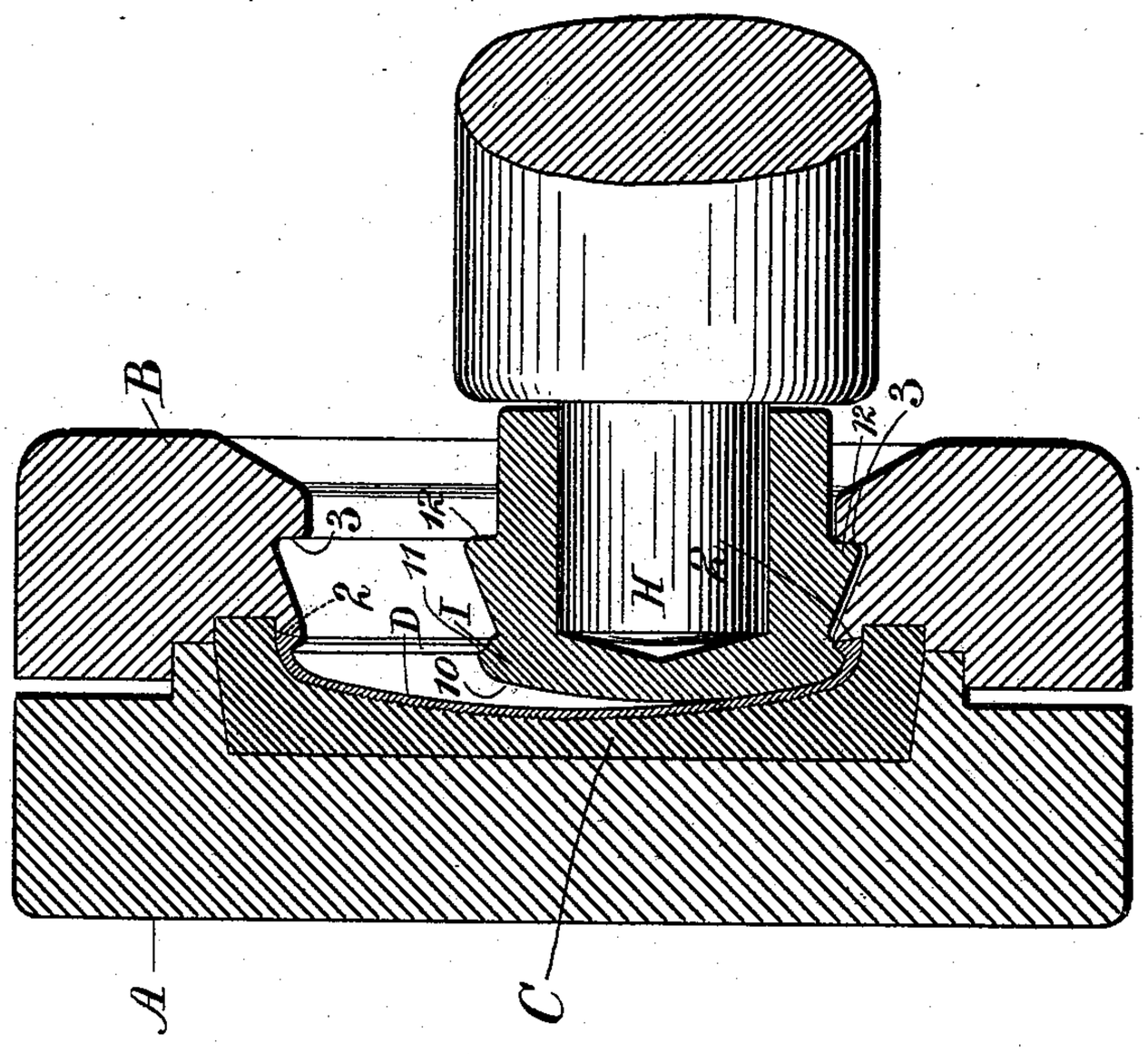


Fig. 1.



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TOOL FOR ORNAMENTING WATCHCASES, &c.

SPECIFICATION forming part of Letters Patent No. 531,455, dated December 25, 1894.

Application filed May 23, 1894. Serial No. 512,156. (No model.)

To all whom it may concern:

Be it known that we, CHARLES WILHELM, of the city and county of New York, and FREDERIC ECAUBERT, residing at Brooklyn, in the county of Kings, State of New York, citizens of the United States, have invented an Improvement in Tools for Ornamenting Watchcases and Analogous Articles, of which the following is a specification.

In Letters Patent No. 472,490, granted April 5, 1892, to C. Wilhelm, a die is represented for receiving a watch case lid or back and a roller upon a suitable support for acting upon the interior surface of such lid and spreading the metal and pressing it into the ornamental surface of the die. In a tool of this character difficulty has been experienced in properly finishing the interior surface of the lid within the periphery or outer portion of such case, and the present improvement is made with reference to giving facility in the manipulation of the roller which is first made use of within the lid, and to supporting the second roller that finishes the interior of the lid near the edges thereof. We make use of a conical roller in a stock or holder somewhat similar to that in aforesaid patent and by which said tool is allowed to act from the center of the case at the inside toward the outer edges of the case for the spreading of the metal and the forcing of the same into the ornaments on the interior surface of the die, and this roller is then removed and a second roller introduced having the axis of the roller substantially parallel to the axis of rotation of the die and its chuck upon the mandrel, so that such roller acts within the lid to spread the metal laterally and fill the die completely around the outer edges of the lid, and this roller is effectually supported as it revolves by an annular shoulder, so that the convex surface of the roll presses the metal backwardly at the rounding portion of the lid adjacent to the periphery, so as to cause the metal to thoroughly fill the ornaments of the die and thereby be fully perfected by the rolling operations.

In the drawings, Figure 1. represents the dies made use of by us in section, together with the roller and its support that is made use of in finishing up the interior of the lid or similar article near the edges of the same, and Fig. 2. is a separate view of the roll.

The dies A and B are adapted to being received into a chuck of any suitable character and firmly clamped together. A chuck adapted to receive such dies is represented in Patent No. 362,615, granted May 10, 1887, to F. Ecaubert.

The back die A is adapted to receiving the ornamenting die C, the recess of which is to be of the size and shape corresponding to the article to be produced, and the interior surface is more or less ornamented according to the ornaments that are to be placed upon the watch case lid or other article.

The front die B is open having an edge 2 that may be slightly beveled and against which the nearly flat surface of the watch case lid, bezel or other article is formed, and the opening within this edge is to nearly correspond to the size of the inturned edge or snap of the watch case lid or similar article, and at 3 there is an annular shoulder around within the opening of the front die B.

We have represented the blank that forms the watch case lid or other article at D, and we remark that it is to be struck up in dies in any ordinary manner so as to be approximately of the shape ultimately required so that such blank can be inserted into the ornamenting die C, and then the edge 2 of the die B will bear against the edge of such blank to hold the blank into its place in the die C while being acted upon by the roll hereinafter described.

After the blank D, has been placed in the dies it is usually necessary to act upon the same from the center outwardly by a conical roll similar to that in the aforesaid patent to form the lid or back except the outer or peripheral portions.

The pin H is adapted to fit the interior of the finishing roll I, and upon which pin H the finishing roll I is free to revolve, and the end of the finishing roll I is convex, as shown at 10 with a beveled or conical edge 11 or of other desired shape adapted to finish the interior of

the watch case lid or other article immediately adjacent to the surface 2 of the open front die B, the convex surface 10 of the roll being adapted to finish the rounding portion of the lid D as the dies and roll revolve together, but in order to prevent the metal of the lid pressing the roll I outwardly so that the metal of the lid may not be of uniform thickness, we support such finishing roll I by the annular shoulder 12 of such roll I resting upon the annular shoulder 3 of the front die B, as indicated in Fig. 1, it being understood that the pin H and roll I are moved laterally and bodily after the shoulder 12 rests upon the shoulder 3 and the necessary force is applied in the lateral direction for finishing up the interior of the lid and pressing the metal thereof fully into the ornaments upon the surface of the ornamenting die C, and at the same time the periphery of the lid is filled out perfectly, and the face of the lid which comes in contact with the watch case center is also completely finished, and the internal edge forming the snap of the case is also completed so as to be adapted for use or to be slightly turned as usual in fitting the snaps of the case together.

It is usually advantageous to make the roll I in one piece, but the cylindrical portion of such roll may be separate from the conical part.

In Patent No. 416,831, there is a shoulder upon the open face die upon which the shoulder or conical surface of the roller rests when spinning up the lid or similar article, but in consequence of such shoulder being closely adjacent to the inner edge of the lid and of considerably less diameter difficulty has arisen in properly finishing this edge, and the shoulder at the point named contracts the opening in the face die and interferes with the manipulation of the rollers, and the foregoing remarks also apply to Patent No. 382,517.

By our improvement the annular shoulder being at a distance from the edge of the lid and of larger diameter than the inner edge of the lid, the difficulties aforesaid are avoided and the opening in the face die corresponds or nearly so to the inner edge of the lid, and hence such opening is as large as possible to give room for manipulating the rolls.

We claim as our invention—

1. The combination in tools for making watch case lids and similar articles, of a die corresponding internally to the exterior of the article to be produced, a die having a central opening corresponding or nearly so to the inner edge of the lid or similar article, a roller corresponding at its periphery to the interior of the article near the edges thereof, and shoulders in rigid connection with the die and at a distance from such article and by which the roll is supported while finishing the interior of such article, substantially as specified.

2. The combination with an internal die having a configuration corresponding to the exterior of the watch case lid or other article to be made, of a die having a central opening corresponding or nearly so to the size of the inner edge of such article, and a separate annular shoulder of larger diameter, a roll having a peripheral configuration corresponding to the interior of the lid or similar article to be produced near the edge thereof, and an annular shoulder of larger diameter resting upon the shoulder of the internal die while the lateral motion is being communicated to the roll within the lid or similar article, substantially as set forth.

3. The combination in tools for making watch case lids and similar articles, of a die corresponding internally to the exterior of the article to be produced, a die having a central opening extending to the inner edge of the surface against which the inner edge of the lid or similar article is formed, and a separate offset shoulder of larger diameter, a roller for finishing the interior of the article near the edges thereof and an annular shoulder on such roll to rest on the offset shoulder and support the roll during its operation, substantially as set forth.

Signed by us this 21st day of May, 1894.

CHAS. WILHELM.
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Witnesses:
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