

C. Hopkins,
Jewelers' Tool.
N^o 78,803. *Patented June 9, 1868.*

Fig. 1.

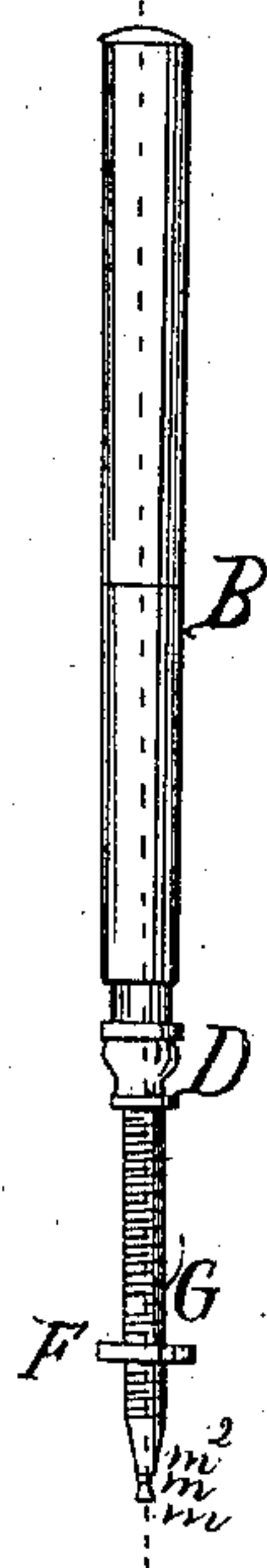


Fig. 2.

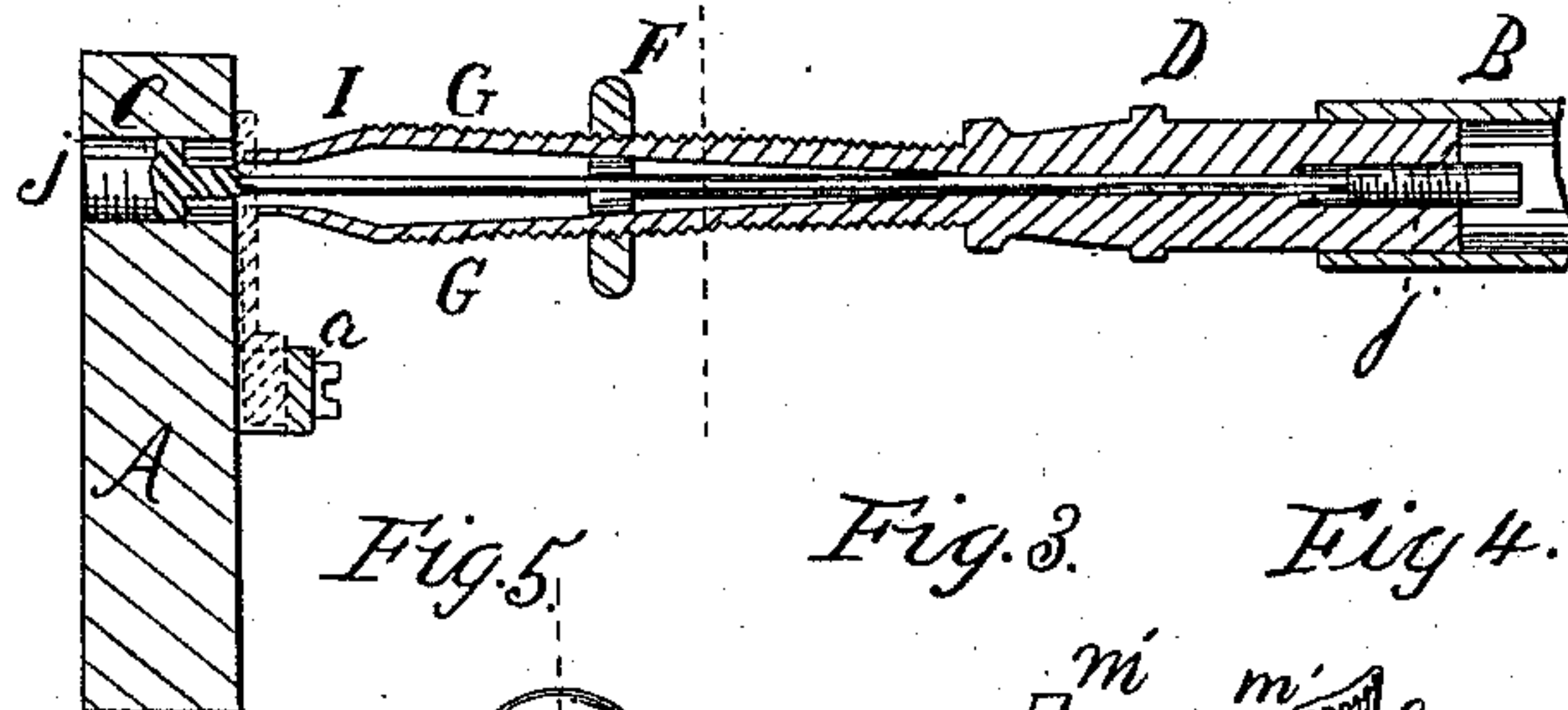


Fig. 5.

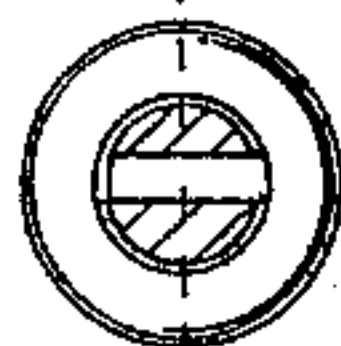


Fig. 3.

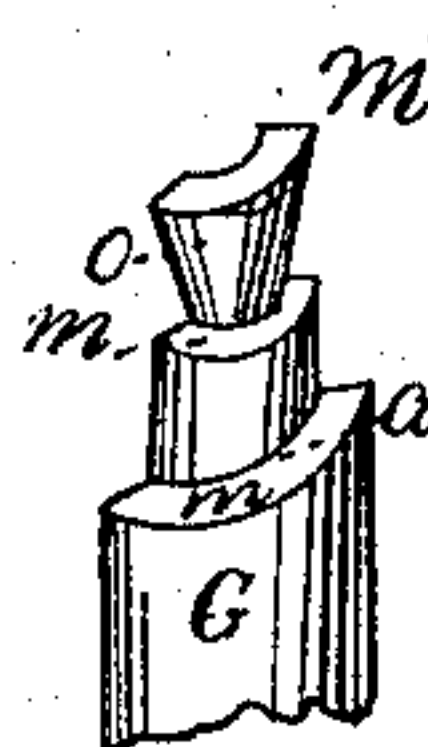


Fig. 4.

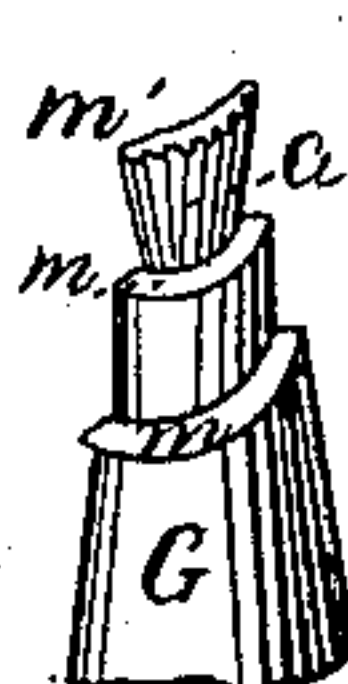


Fig. 6.

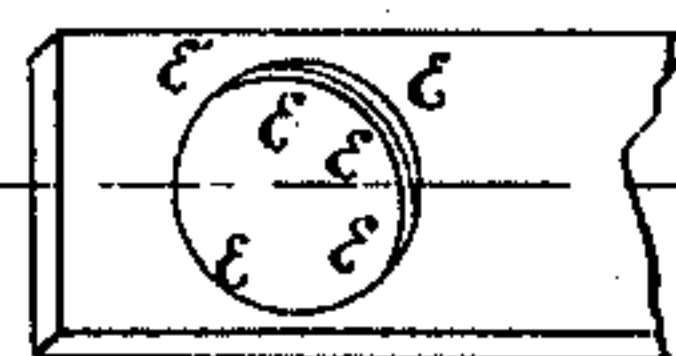


Fig. 7.



Witnesses.

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Letters Patent No. 78,803, dated June 9, 1868.

IMPROVED TOOL FOR REJEWELLING WATCHES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, C. HOPKINS, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and improved Tool for Rejewelling Watches; and I do hereby declare the following to be a full, clear, and exact description of the same, sufficient to enable those skilled in the art to which my invention appertains to make use of it, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a side view of the reaming-instrument.

Figure 2 is a longitudinal section, showing the tool when applied to its work.

Figures 3 and 4 are side views of the end of the reaming-tool.

Figure 5 is a cross-section of the reaming-tool through the line *x x* of fig. 2.

Figure 6 is a perspective view of the socket which holds the jewel, and

Figure 7 is a cross-section of the same.

In all the figures the parts are represented as greatly magnified.

This tool is designed to facilitate the work of the watch-repairer in lifting the flange of the socket or bezel in which the previous jewel, now broken out, was set, so that the new jewel can be readily dropped into place. It may also be employed for reaming out the socket or bezel where it is too small for the new jewel, or has been damaged by the breaking out of the old one.

In the drawings, A represents a circular or octagonal metallic bed, provided with a clamp, *a*, regulated by set-screws. That part of the watch which is to be rejewelled, represented by the red lines in fig. 2, is laid upon the bed, and fastened firmly in position by means of the clamp just described.

In thus adjusting the part of the watch, care must be taken to bring the jewel-hole directly over a hole, *c*, in the bed A. The hole *c* contains a centring-screw, J, which has a point, *z*, projecting upward towards the jewel-hole, provided at the centre of its extremity with a minute acicular depression, in which the centring-needle of the reaming-tool is stepped during the operation. The part to be rejewelled having been thus brought into position and clamped, the centring-screw J is adjusted by screwing it up or down in the bed to the extent required to bring the point *z* to the proper place, and the operation of preparing the socket to receive the new jewel is ready to commence.

The great difficulty in resetting watch-jewels arises from the form of the socket in which they are held, which is shown clearly in figs. 6 and 7. The plate to be jewelled is thin, and the jewel-hole is a circular aperture through it, having a V-shaped groove or channel around its circumferential wall, a little below the middle of the wall. The jewel rests on the under flange *e e*, formed in the wall by the groove above described, and the upper flange, *e' e'*, laps over the edge of the jewel, holding it firmly down in place. When the jewel is broken out it is exceedingly difficult to lift or turn up this upper flange *e' e'*, in order to make room to drop the new jewel into place, from the fact that the holes are so minute that the groove and flanges are almost microscopic, and it is well nigh impossible to get hold of the flange properly and turn it up uniformly around the hole, except by use of an expensive jewelling-lathe, possessed by comparatively few watch-makers, and, from its expense, quite beyond the reach of many.

To obviate this difficulty I have invented the apparatus above described for properly holding the part to be rejewelled, and in connection with that apparatus I use a tool for lifting the flange or reaming out the hole, which is represented clearly in figs. 1 and 2, and which I will now describe.

This tool consists of a handle, B, a shank or tang, D, and two long bent arms G G, projecting from the shank, as shown in fig. 2, and springing outward from each other. The periphery of these arms is cut into a screw, and a nut, F, encircles them, enabling the operator, by screwing it down towards their point, to force the arms together, or, by screwing it up towards the tang, to allow them to spring apart. Between these arms is a centring-needle, I, extending from their point through the tang, and terminating in a chamber or hollow in the handle B. In passing through the tang, it is provided with a screw-thread, *j*, by means of which it can

be set in or out to any degree required by the nature of the work. The handle B simply slips over or screws upon the end of the tang, and can be readily removed to allow the operator to get at the head of the centring-needle for the purpose of adjusting it.

The extremities of the arms G G are made of steel, and are formed as shown clearly in figs. 3 and 4, having several sharp projecting edges $m m^1 m^2$, arranged one above another, the metallic surfaces between them being either smooth, as shown in fig. 3, or cut longitudinally into sharp corrugations, as shown at $n n$, fig. 4.

This completes the description of the apparatus which I employ. Its operation is as follows:

Having the part to be rejewelled in position, as hereinbefore explained, I screw the nut F down on the arms G G until their ends will easily enter the jewel-hole together. Then I adjust the needle I as required, having done which, I step its extremity in the minute depression in the centring-screw, which I have already described. I then unscrew the nut F, when the arms spring out until their extremity m^1 comes in contact with the walls of the socket or bezel, the salient edge of the instrument entering under the upper flange e' of the socket, and lodging in the V-shaped groove or channel, as shown in fig. 2. The instrument may now be rotated upon the centring-needle, when the extremity of the arms G G at the point o will press out against the flange e' , so as to bend or burnish it up all around the hole, enlarging the opening of the socket to the extent desired. The instrument may now be withdrawn, and the jewel dropped easily into position, after which the turned-up flange e' may be burnished down again upon the edges of the jewel, by means of a small well-polished steel burnisher.

If the hole has been damaged, or is too small for the jewel, and it be desired to enlarge it, the form of tool shown in fig. 4 may be used, having the sharp cutting corrugations $n n$. This, upon being rotated as above described, will ream out the hole to any required size, the appropriate centre and depth of the hole or socket being, in the mean time, maintained by means of the centre-needle I, around which the instrument rotates.

It will be observed that the arms G G, between the points m^1 and m , taper upward from their extremity. This is to adapt their extreme ends to operating under the flange e' , in a bezel like that above described. Between the points m and m^2 , the diameter being larger adapts this part to holes too large for the small extreme points to operate in satisfactorily, and above $m m^1$ being still larger, adapts this part to very large holes, as for the fusee-wheel. Thus the instrument is adapted to all the varying necessities of this branch of the watch-maker's business.

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

1. The bed A, having the clamp a and the centring-screw J, substantially as and for the purpose above described.
2. Forming the ends of the reaming-instrument, as shown at $m m^1 m^2$, substantially as and for the purpose set forth.
3. The reaming-tool above described, composed essentially of the bent spring-arms G G, having the cutting-edges $m m^1 m^2$, and the exterior screw-threads, with the adjustable centring-needle I, and the screw-nut F, working up and down upon the arms G G, in the manner described, all said parts being constructed and arranged to operate together substantially as specified.

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Witnesses:

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