Jacob, John & Joseph Fortenbach.

Watch-Case Cutter.

No 75892 Patented Mar. 24, 1868.

Fig. 1

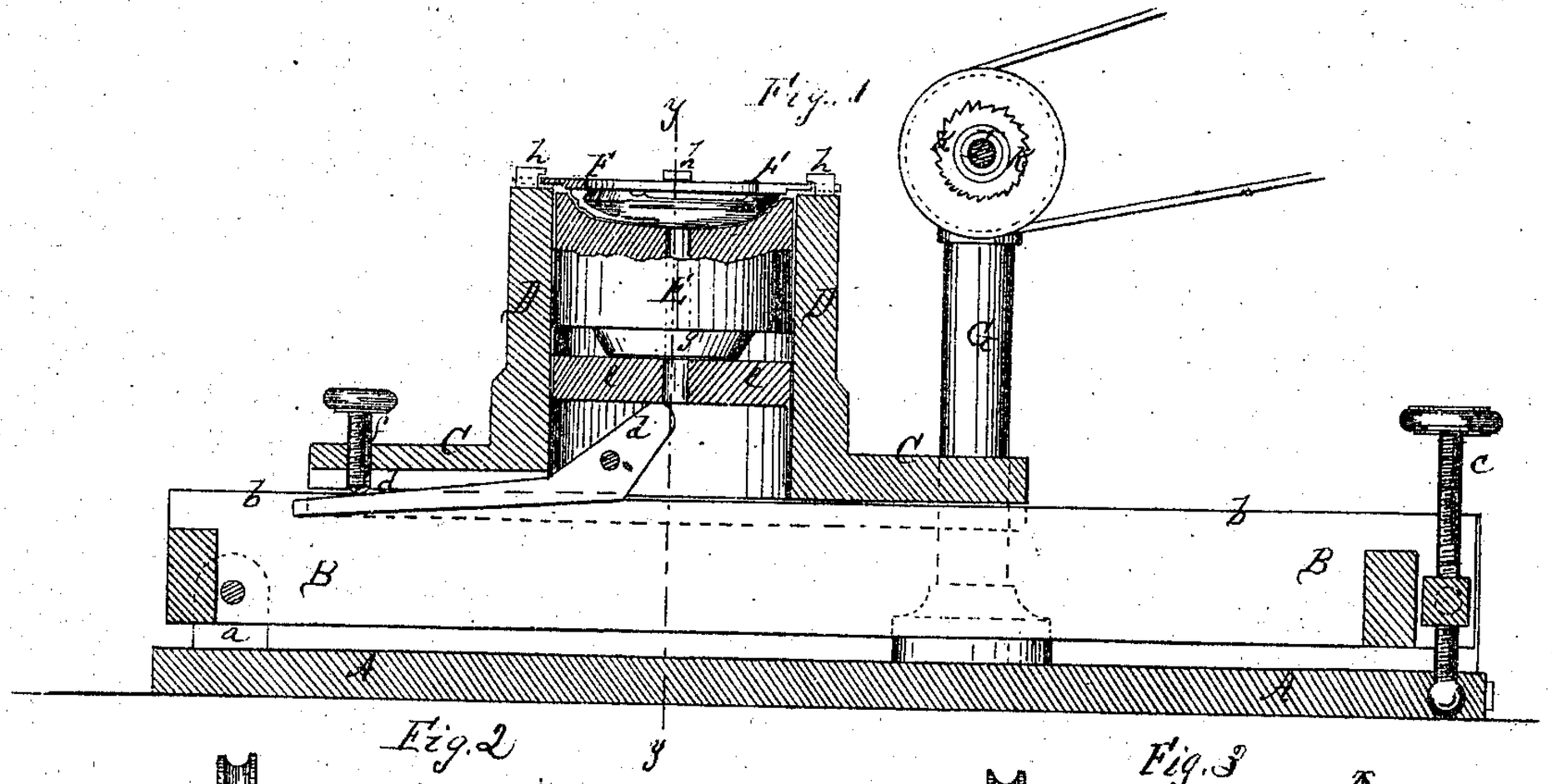


Fig. 2

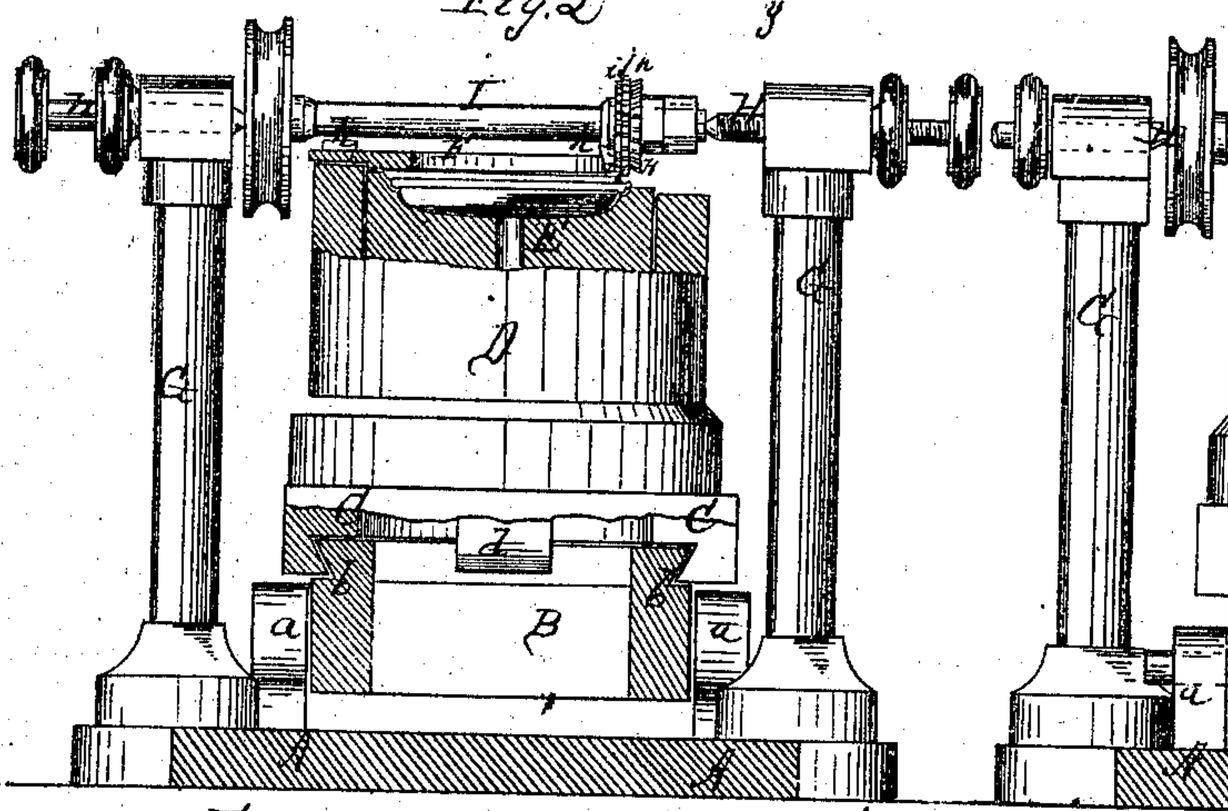


Fig. 3

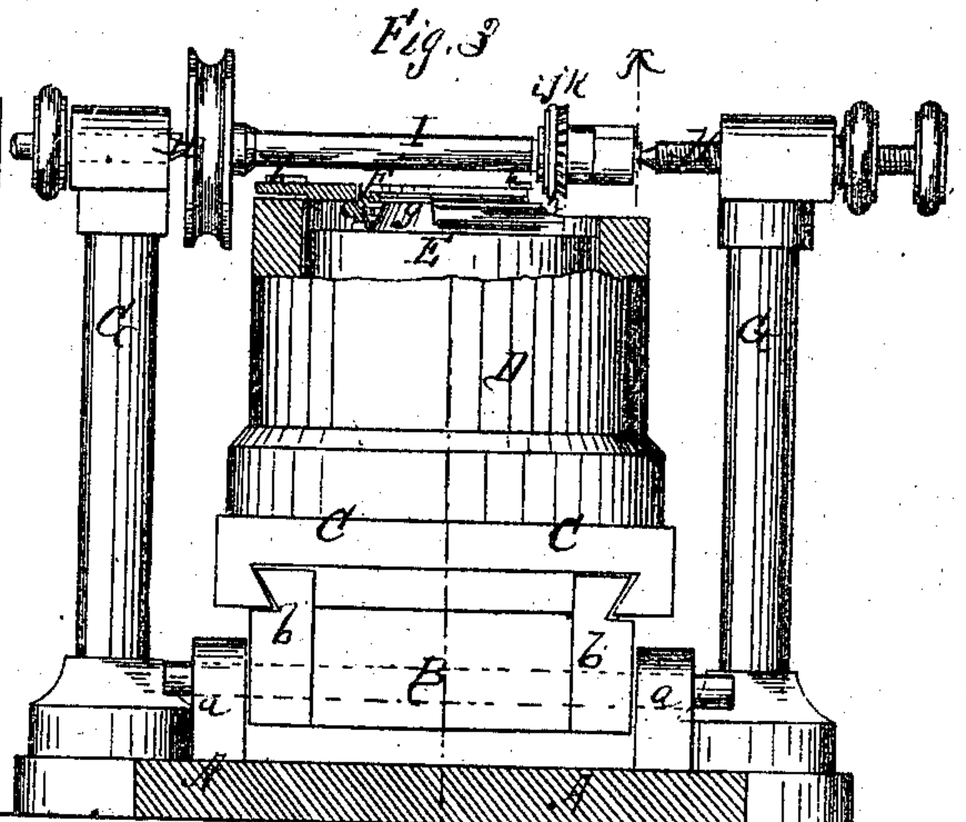


Fig. 5

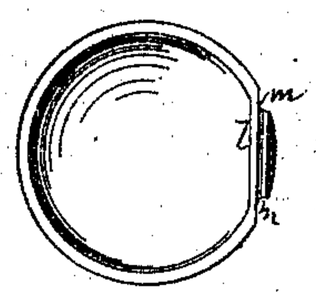


Fig. 6

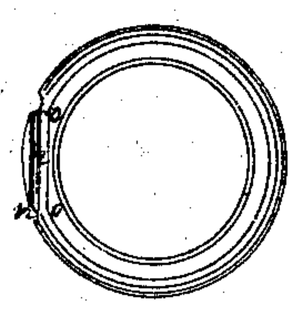


Fig. 4.

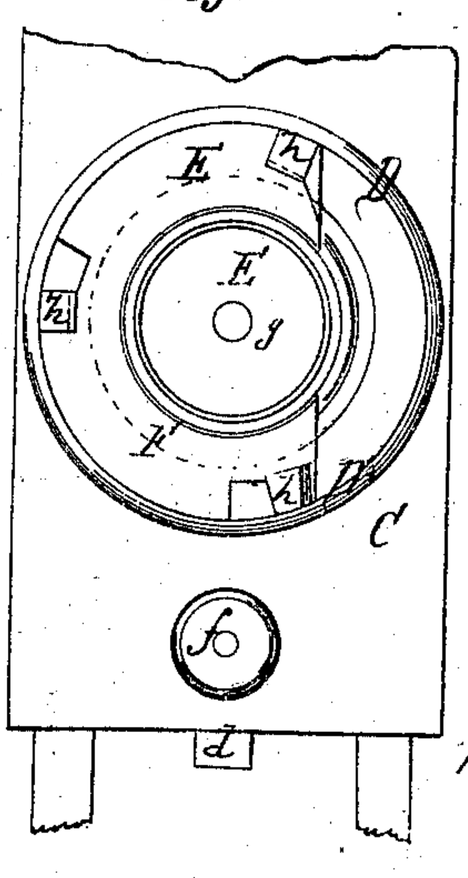
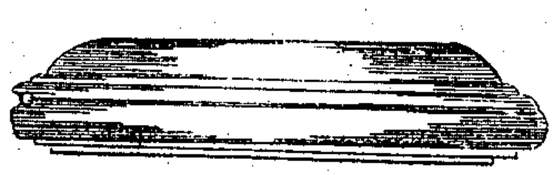


Fig. 7.



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Letters Patent No. 75,892, *dated March* 24, 1868.

IMPROVEMENT IN WATCH-CASE CUTTER.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that we, JOHN FORTENBACH, JACOB FORTENBACH, and JOSEPH FORTENBACH, of Carlstadt, in the county of Bergen, and State of New Jersey, have invented a new and improved Cutter for Watch-Cases; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 represents a vertical longitudinal section of our improved watch-case cutter, taken on the plane of the line *x x*, fig. 3.

Figure 2 is a side elevation, partly in section, of the same, the plane of section being indicated by the line *y y*, fig. 1.

Figure 3 is a similar view as fig. 2, showing the machine adapted for cutting centres.

Figure 4 is a detail plan or top view of the same.

Figure 5 is a plan view of the watch-cover or back cut by our improved machine.

Figure 6 is a plan view of a watch-centre cut by our improved machine.

Figure 7 is a plan view of a watch-centre and cover cut by our improved machine.

Similar letters of reference indicate corresponding parts.

This invention relates to a new machine for cutting the recesses into watch-centres and covers for the reception of the hinges, and consists in such a construction of the supports of the pieces to be cut, and in such an arrangement of cutters, that the desired result will be obtained with the greatest accuracy, ease, and dispatch.

Heretofore, the aforesaid recesses had invariably to be cut by hand, and the process of cutting them occupied a considerable time in the manufacture of watch-cases. Furthermore, no great accuracy can be obtained without the use of proper machinery.

A, in the drawing, represents a frame, of suitable construction, made of wood or metal, as may be desired. From the same projects an ear or ears, *a*, to which one end of a frame, B, is pivoted, which forms two parallel rails, *b b*. The free end of the frame B can be set at any desired height above the bed A by means of a screw, *c*, or other equivalent device, so that any desired degree of inclination can be imparted to the rails *b*. Upon the rails *b* is set a sliding carriage, C, from which a hollow turret, D, projects upward, as shown. To the under side of the carriage C is pivoted a lever, *d*, which, with one end, fits under a disk or block, *e*, that is arranged within the turret D, while its other end fits below the end of a screw, *f*, or other equivalent device, by means of which the height of the disk *e* in the turret can be regulated. Upon the adjustable disk *e* rests, within the turret D, a block, E, which is at its upper end made concave for the reception of watch-covers, as in fig. 2, or provided with a circular projection, *g*, for the reception of centres, as in figs. 3 and 4. or which, if desired, has one end concave and the other end provided with the projection *g*, as in fig. 1, in which latter case it is inserted in the turret, so that the desired end is on top. The centre or cover is then placed upon the end of the block E, so that it may project somewhat from the upper edge of the turret. By a C-shaped plate, F, which fits upon the upper end of the turret, and under the heads of pins *h h* that project from the same, the portion of the watch-case to be cut will be partly covered, as shown in fig. 4. The cover or the centre can then be clamped by turning the screw *f*, between the block E and plate F, as shown in figs. 2 and 3.

The plate F is so formed that a sufficient portion of the cover, or of the centre, is left free and open, to be reached by tools from above, to facilitate which the upper edge of the turret is depressed opposite to such uncovered section of the cover or centre, as shown, so that that section may lie entirely free, as in figs. 2 and 3. From the bed A project two or more uprights, G G, in which horizontal spindles or pins H H, have their bearings, said spindles holding between them a horizontal shaft, I, as shown, or the said shaft may have its bearings arranged in any other suitable manner. On the shaft are mounted three circular cutters, *i*, *j*, and *k*, which are close together, and with edges of the required shape. As rotary motion is imparted to the shaft I, the cutters are revolved. The carriage C is then moved under the cutters, the rails *b* having been

adjusted so that the cutters will reach to the required depth on the case or cap to be cut. In the drawing, the shaft I is shown to be longitudinally adjustable, so that the cutters may be brought nearer to or further from the centre of the turret, to adapt the device for various-sized watch-cases; but if desired, the cutters may be adjustable on the shaft for the same purpose, and with equal effect.

By means of the screw *c* the inclination of the rails may be so regulated that the watch-case to be cut is at the required height, so that the incisions may be made to the necessary depth. In cutting covers, as in fig. 2, the smallest cutter, *i*, serves to make the surface of the straight strip, *z*, which is generally soldered into or formed in the covers, as in fig. 5, even with the edge of the cover. The second cutter, *j*, cuts the groove *m* for the reception of the socket of the hinge, and the third and largest cutter, *k*, removes as much of the rim as is necessary to allow the lid to open as far as is desired, as will be understood from fig. 7. For cutting the centres, the cutter *k* removes as much of the rim as is required to allow the necessary opening, *j* cuts the groove *n* for the reception of the hinge-socket, and *i* flattens a portion of the edge of a ring, *o*, which is formed on the centre, as shown in fig. 6.

This invention is applicable to all kinds of watch-cases, and to all sizes.

We claim as new, and desire to secure by Letters Patent—

1. The improved machine for cutting the hinge-recesses in watch-cases, made and operating substantially as herein shown and described.

2. The up-and-down adjustable sliding turret D, when combined with the lever *d*, up-and-down adjustable block E, and clamping-plate F, all made and operating substantially as herein shown and described.

3. The block E, for supporting the covers or centres of watch-cases, when formed for the said object, substantially as herein shown and described.

4. The up-and-down adjustable sliding turret, when carrying the cover or centre of the watch-case, in combination with the longitudinally-adjustable rotary cutters, by which the hinge-recesses are cut into the covers or centres, substantially as herein shown and described.

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