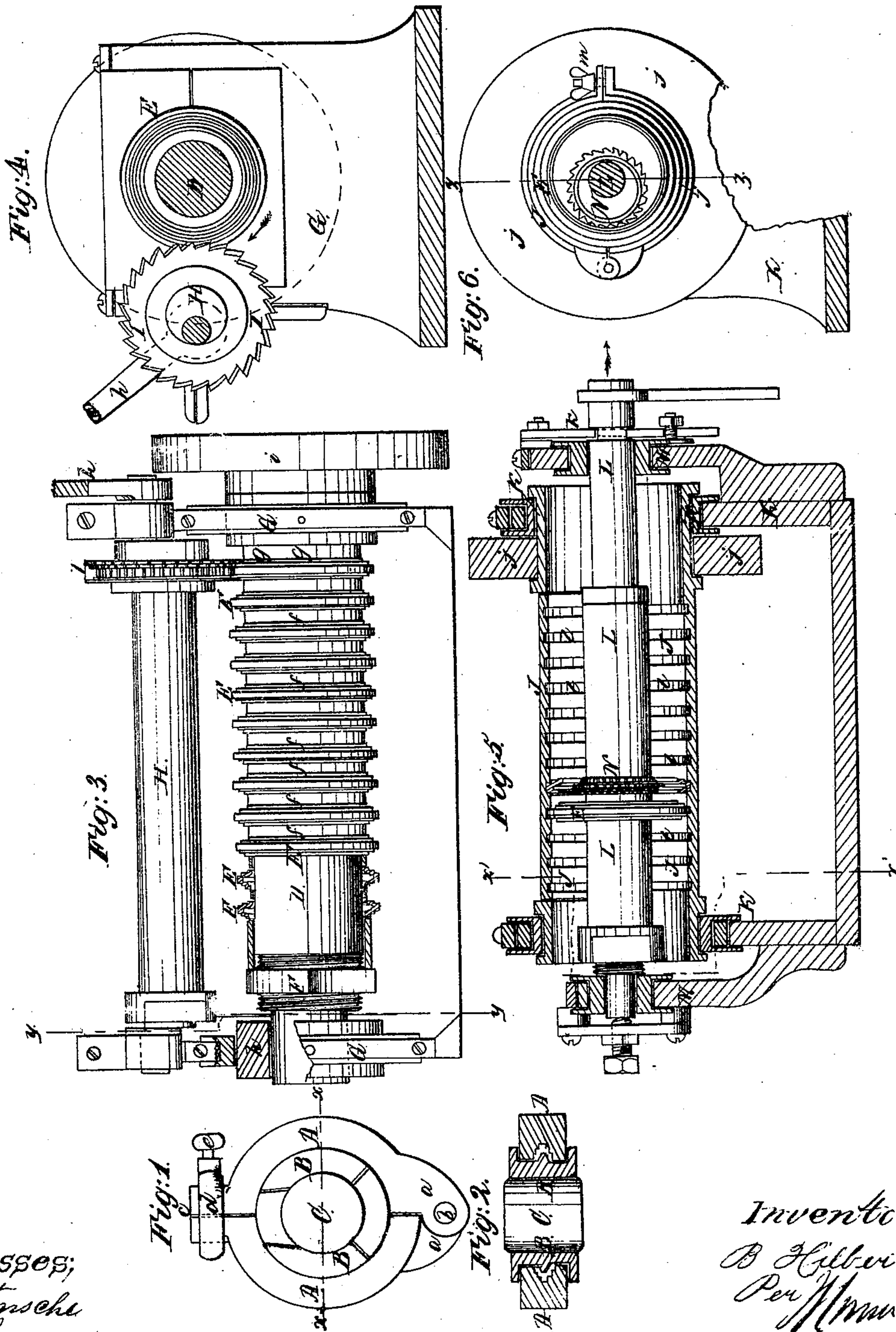


*B. Hilbert.*

*Milling Machine.*

*N<sup>o</sup> 66,838.*

*Patented Jul. 16, 1867.*



*Witnesses;  
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# United States Patent Office.

BATISTE HILBERT, OF NEW YORK, N. Y.

Letters Patent No. 66,838, dated July 16, 1867.

## IMPROVED DEVICES FOR MAKING CENTRES FOR WATCH-CASES.

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, BATISTE HILBERT, of the city, county, and State of New York, have invented new and improved Devices for Making "Centres" for Watch-Cases; and I 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, in which—

Figure 1 represents a side view of my improved device for casting the centres.

Figure 2 is a central section of the same taken on the line  $x x$ , fig. 1.

Figure 3 is a plan or top view partly in section of the device for turning the outside of the centres.

Figure 4 is a vertical cross-section of the same taken on the line  $y y$ , fig. 3.

Figure 5 is a vertical longitudinal section of the device for turning the inside of the centres, taken on the line  $z z$ , fig. 6.

Figure 6 is a vertical cross-section of the same taken on the line  $x' x'$ , fig. 5.

Similar letters of reference indicate corresponding parts.

This invention relates to an apparatus for casting, turning, and finishing the centres, rims, or rings of watch-cases, to which the lids are to be hinged in a complete watch. The invention consists, first, in the construction of a mould for casting the "centres," so that all the flanges or shoulders will be readily formed on the inside and outside of the ring or centre; second, in a device whereon the rings thus cast are held and their outer surfaces planed or turned and smoothened; and, thirdly, in a device wherein the thus cast and turned rings are held and their insides smoothened and turned.

A A represent two semi-annular jaws, which are provided with ears,  $a$ , projecting from their circumference, through which ears a pin,  $b$ , is passed, whereby the said jaws are hinged together. B B are sections of a ring which can be taken to pieces, and which, when inserted between the jaws A, forms the inside of the mould. C is a cylindrical core, which is held in the ring to prevent the same from falling out of the jaws. An annular opening or channel is formed between the jaws A and ring B, the cross-section of which corresponds to that of the "centres" that are to be cast therein, as is clearly shown in fig. 2. A circular opening is arranged at the joint of the jaws opposite to the hinges  $a b$ , and a funnel,  $c$ , whereby the fluid Babbit or other metal from which the centres are to be made is conducted into the annular opening or form. As soon as a "centre" has been thus cast the pin C is removed and the ring B taken to pieces. The jaws, which were thus far clamped by a ring,  $d$ , and set-screw,  $e$ , fitting around the funnel  $c$ , can now be opened and the ready-cast "centre" be taken out. The rings or centres E thus cast are then secured around a shaft, D, figs. 3 and 4, and washers  $f f$  are arranged between the same on the said shaft, as is clearly shown in fig. 3. A nut, F, arranged near one end of the shaft D, serves to clamp the centres and washers between its face and that of a shoulder,  $g$ , on the shaft D. The said shaft rests in similar bearings  $h h$ , which are arranged in stationary uprights G, and which are secured to the latter by means of screws or other suitable devices. By removing the fastening device of these bearings (the outer diameter of which bearings is larger than that of the "centres") the shaft can be removed from the supports by sliding it out. The screw F is then removed and the centres and washers are arranged on or removed from the shaft, as may be desired. H is an eccentric shaft, which has its bearings in the uprights G, and is parallel with the shaft D, and on which circular-toothed cutters I I are mounted in such a manner that when the shaft H is turned so that the cutters come in contact with the "centres" on the shaft D, the outside of the "centres" will be well smoothened and the corners on their shoulders made sharp and smooth. One set of such cutters is arranged on the shaft H opposite to and for smoothening each "centre" on the shaft D. In each set are as many cutters as there are strips or shoulders on the periphery of the "centres," each cutter being as wide as the shoulder to which it is fitted. The eccentric shaft H can be operated, *i. e.*, turned by means of crank-handle,  $h$ , or otherwise. By its use the centres can be made of larger or smaller diameter. The shaft D is revolved in the direction of the arrow in fig. 4 by means of a belt passing over a pulley,  $i$ , or by other suitable means. In fig. 3 but one set of cutters, I, is shown. In a working machine one set is arranged to each "centre" on the shaft D. The "centres" thus cast and finished on the outside are then secured in a cylindrical shell, J, which consists of two halves hinged together, as is clearly shown in fig. 6. One of these halves is securely attached to the annular bearings of the cylinder, which rest in uprights K, so that the cylin-



der can easily revolve. One of these annular bearings extends beyond the side of its upright, so as to permit the mountings of a pulley, *j*, whereby motion can be imparted to the cylinder. An eccentric shaft, *L*, passes through the whole length of the cylinder *J*, and is mounted in bearings, which are arranged in uprights *M*. On it are mounted cutters or sets of cutters, *N*, which are arranged so as to fit the shape and form of the inside of the "centres." The shaft *L* is arranged so that it can slide in its bearings, if desired. It is secured by a clamp or bolt, *k*, which fits into a groove around the shaft *L*, as shown in fig. 5. When this bolt is disengaged from the same the shaft can be withdrawn from the cylinder in the direction of the arrow in fig. 5. The inside of the shell is provided with grooves, *l*, for the reception of the "centres." When the shaft *L* has been withdrawn, as described, and when the shells are opened, the "centres" *E* are placed into the lower revolving half of the cylinder, or rather into the grooves *l* therein arranged, whereby they are held in the proper position and the required distance apart. The shaft *L* is then replaced and secured by the bolt *k*, and the swinging half of the cylinder is then closed over the "centres" and secured to the other half by a set-screw, *m*, as shown in fig. 6. The shaft *L* is then turned so that the cutters come in contact with the inside of the centres, and then the cylinder (and with it the centres held therein) is revolved, when the required shape of shoulders, etc., will be sharply cut into the inside of the "centres," and the latter will thus be finished and smoothened on the in and out side and ready to be provided with hinges and fitted to a watch.

Having thus described the several devices invented by me for manufacturing watch-rims, I claim as new, and desire to secure by Letters Patent—

1. The mould for casting the "centres" of watch-cases, when formed of the hinged jaws *A*, in combination with the sectional ring *B* and core *C*, all made and operating substantially as herein shown and described.
2. The device for smoothing and finishing the outside of the "centres," consisting of the sliding and revolving shaft *D*, in combination with the eccentric shaft *H* and cutters *I*, all made and operating substantially as herein shown and described.
3. The device for smoothing and finishing the inside of the "centres," consisting of the revolving cylinder *J*, in combination with the eccentric sliding shaft *L* and cutters *N*, all made and operating substantially as herein shown and described.
4. The revolving shell or cylinder *J*, made of two pieces hinged together and provided with grooves *l* around its inside, and otherwise constructed substantially as set forth.

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Witnesses:

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