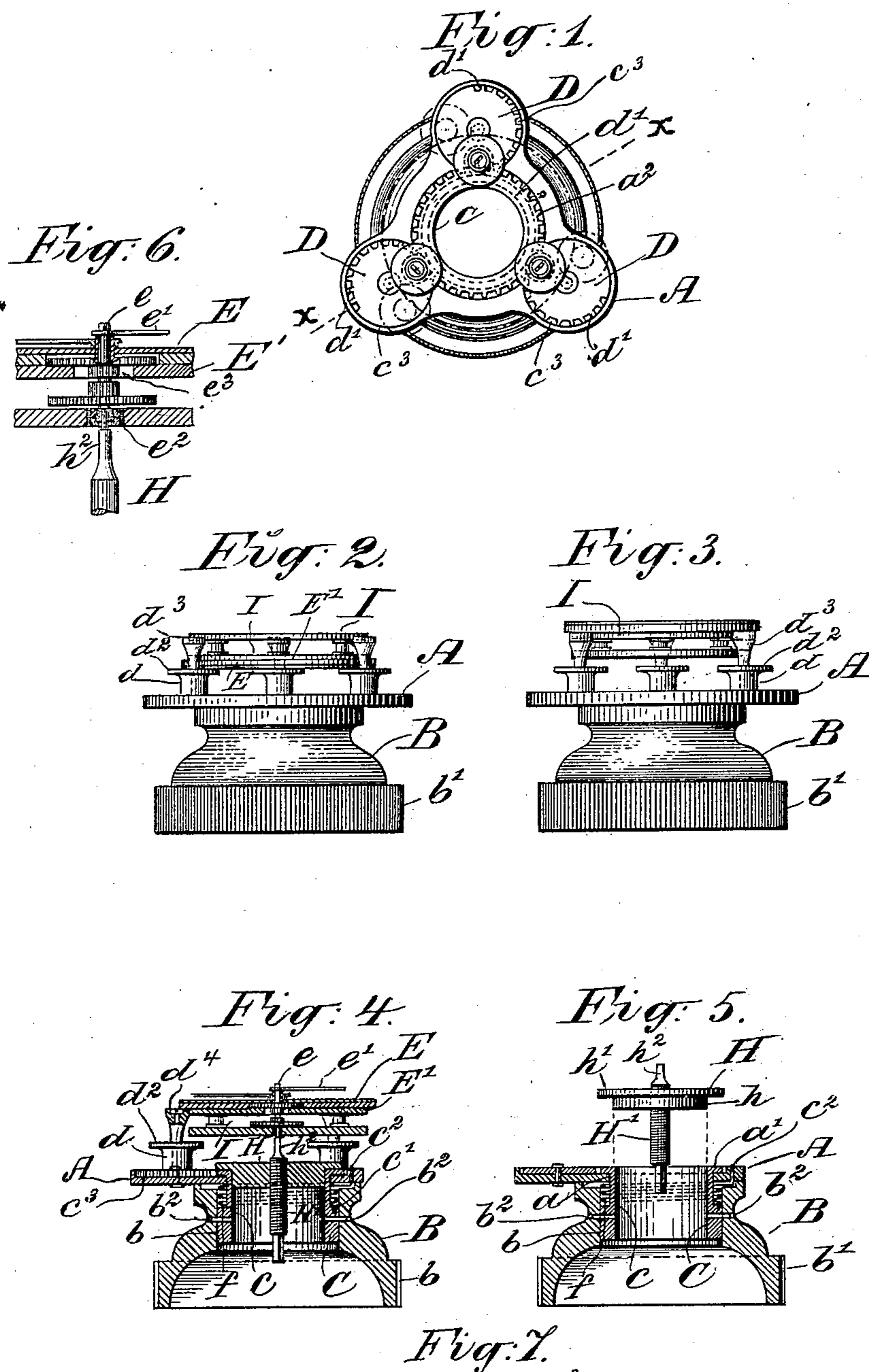


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Patented Feb. 25, 1902.

F. LEACH.  
WATCH MOVEMENT HOLDER.  
(Application filed Nov. 19, 1901.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

FREDERICK LEACH, OF ORADELL, NEW JERSEY.

## WATCH-MOVEMENT HOLDER.

SPECIFICATION forming part of Letters Patent No. 694,165, dated February 25, 1902.

Application filed November 19, 1901. Serial No. 82,836. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK LEACH, a citizen of the United States, and a resident of Oradell, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Watch-Movement Holders, of which the following is a specification.

My invention relates to that class of holders which are employed to hold the works of the watch or the "movement," so called, while the same are or is undergoing cleaning, examination, or repair, whereby to obviate the contact of the hands or fingers of the workman therewith. In holders of this class as heretofore in use the constructions have been such that the holders were adapted either to the holding of the watch-movement with the face downward, with only a limited capacity for holding it with the face upward, or to the holding of such movement with the watch-face upward, with no capacity for holding it with the face in a reverse position. With the first of these constructions no efficient means for holding the different sizes and forms of movements with the faces upward has been employed, while with the other a separate holder for each different size of movement has been required. To obviate these objections and provide for the holding of the different sizes and forms of movement by a single holder with the face either upward or downward, as well as for sustaining the "center staff," so called, and resisting the pressure exerted upon it when the minute-hand or the cannon-pinion of the watch is forced or pressed onto the same are the objects of my invention.

My invention therefore consists, first, in the peculiarities of construction of the holder itself, whereby it is adapted to engage with and firmly hold a watch-movement when supplied thereto either with the face of the watch downward or upward; second, in the combination, with such holder, of a device for cooperating with the end of the center staff and sustaining the same against the pressure exerted upon it in forcing the minute-hand or other appropriate parts of the watch downward onto the staff or otherwise, and, third, in various other constructions and combina-

tions of parts, all as will hereinafter more fully appear.

Referring to the accompanying drawings, which form a part of this specification, Figure 1 is a plan of a watch-movement holder constructed in accordance with my invention and showing in dotted lines the outlines of a watch-movement held therein; Fig. 2, a side elevation thereof, showing a watch-movement held therein with the face of the watch downward; Fig. 3, a similar side elevation of the holder, showing a watch-movement held therein with the face of the watch upward; Fig. 4, a vertical section of the holder, taken centrally of the same on the line  $x x$  of Fig. 1, showing also in central vertical section a watch-movement clamped therein with the face upward and a device for sustaining the center staff applied in connection therewith; Fig. 5, a similar vertical central section taken on the same line of the holder with the jaws for engaging with the watch-movement removed and the device for sustaining the center staff raised above the holder and shown in side elevation; Fig. 6, an enlarged detail showing more particularly the center staff and the upper end of the sustaining device cooperating therewith in side elevation with portions of the plates of the movement and portions of the face of the watch and hands taken in the plane  $x x$  of Fig. 1, and Fig. 7 a vertical sectional detail showing one of the jaws of a slightly-modified construction with its carrying-disk also taken in the plane  $x x$  of Fig. 1.

In all the figures like letters of reference are employed to designate corresponding parts.

A indicates the base-plate, upon which are mounted and operated the various parts of the holder. This base-plate may be constructed of any approved form. As shown in the drawings, however, it is constructed in a general triangular form, with a circular aperture  $a$  extending downward through its center portion, and has rotatively secured to its under side a handle or support B, whereby it may be conveniently held in the hand or fingers of the workman. In the construction of this handle or support various forms may be adopted. I prefer, however, to construct it in the form shown in the drawings, with a

cylindrical orifice  $b$  extending downward axially through the same and with its lower enlarged lower portion  $b'$  roughened or milled, whereby to insure of a firmer hold being taken on the same when desired. For connecting this handle or support B with the base-plate A various means may be employed. I prefer, however, to connect it therewith by a tubular journal C, which, fixedly secured within the aperture  $b$  of the handle or support B by pins or screws  $b^2$ , extends upwardly through the aperture  $a$  in the base-plate A and is provided at its upper end with an outwardly-extending circular flange  $a'$ , which overhangs the base-plate, as shown in Figs. 4 and 5. By this means the handle or support and the base-plate are firmly bound together and the former left free to be rotated forward or backward upon the latter, as may be desired. As thus equipped the base-plate A is provided on its upper surface near each of its angular portions with a disk D, which is pivoted thereto and has fixedly secured to and extending upwardly from its upper side at a point eccentric to its pivot a stud  $d$ , which constitutes one of the jaws of the holder by which the watch-movement is engaged and firmly held when such movement is supplied to the holder. With the jaws of the different disks thus disposed in eccentric relationship to the pivots of their respective carrying-disks their approach toward one another to engage with a watch-movement of a smaller diameter or their separation to engage with a movement of larger diameter may be accomplished by simply rotating their respective carrying-disks in one or the other direction, as may be required. For effecting the rotation of these disks in unison various expedients may be adopted. In the form of the invention which I have selected for purposes of illustration, however, I accomplish it from the handle or support B through the intermediary of the tubular journal C and overhanging circular flange  $a'$ , to which end the said flange is provided in its periphery with appropriate spur-gear teeth  $a^2$ , which intermesh with the correspondingly-shaped gear-teeth  $d'$ , with which each of the disks D throughout a portion of its peripheries is provided. With the disks D thus connected with the handle or support B their simultaneous rotation in one or the other direction in unison may be effected by simply rotating the handle or support in the required direction, while the base-plate is held stationarily in the hand or fingers of the workman.

The form of the jaws  $d$  which I prefer in practice is shown in the drawings and consists of an upwardly-extending stud, which is provided midway of its length with an outwardly-extending flange  $d^2$ , with the portion immediately above it reduced in diameter and its upper end  $d^3$  slightly enlarged and made cylindrical for a short distance. As thus constructed the flanges  $d^2$  of the several jaws serve to receive and support the watch-

movement when supplied to the holder with its face downward, in which case the face E rests upon the flanges and extends outward, with the upper plate or plates E' of the works in the reduced portion of the jaws immediately above. On the other hand, the upper cylindrical portions  $d^3$  of these jaws serve to receive and support the watch-movement when supplied thereto with the face uppermost, the said ends, which are so constructed as to afford sharp corners at their intersections with the cylindrical sides, engaging with the reduced portion of the plate or plates of the movement immediately beneath the face E, as shown in Figs. 3 and 4. In some cases these jaws will be made as a rigid stud, which will be screwed into their respective supporting-disks, as shown in Fig. 7. I prefer, however, to construct them with their upper portions above the flanges  $d^2$  in the form of rotating sleeves, which are rotatively mounted upon the lower portion of the jaws by pivot-screws  $d^4$ .

With the jaws constructed and disposed as thus described they will be normally held at the points of nearest approach to the axis of the cylindrical aperture that extends downward through the journal C, as shown by full lines in Fig. 1. To this end I make use of the spring  $f$ , which, coiled around the tubular journal C in a suitable recess  $c$ , formed around the latter, is connected at one of its ends with this journal and at its other is connected with the base-plate A, as shown at  $c'$  and  $c^2$ , respectively, in Figs. 4 and 5. By these means, as will be seen, not only will the jaws  $d$  be normally held at their innermost positions when free from a watch-movement, but a tendency to return to those positions will be imparted to them by the action of the spring and the watch-movement supplied to the holder thereby firmly clamped therein.

In some instances it may be found desirable to pivot the disks D to the upper surface of the base-plate A, in which cases the tubular journal will be made of a sufficient length to permit of the overhanging flange  $a'$  extending upward to the proper height to bring its teeth in engagement with those upon the disks. I prefer, however, to pivot them in circular chambers  $c^3$ , formed in the upper surface of the base-plate, and to so construct the tubular journal C that the teeth in the periphery of its overhanging flange  $a'$  will engage with those formed upon their peripheries.

In order to sustain the center staff  $e$  of the watch-movement and resist the pressure applied thereto when the minute-hand  $e'$ , the cannon-pinion  $e^3$ , or other appropriate part of the watch is being forced downward upon it, I make use of a block or plug H, which, fitted at its lower end  $h$  to the aperture extending downward through the tubular journal C and provided at its upper end with a flange  $h'$ , that is adapted to extend outward over the upper end of such journal, is provided with a

screw  $h'$ , which is threaded axially through the same and is provided at its upper end with a reduced portion  $h^2$ , that is adapted to engage with the lower end of the center staff, as shown in Figs. 4 and 6.

With the block or plug inserted in the aperture formed through the tubular journal C and a watch-movement I inserted between the jaws  $d$  the upper end  $h^2$  of the screw  $H'$  will be brought into line with the center staff  $e$  and may then be adjusted upward or downward to bring its upper end against or to carry it away from the lower end of the center staff by simply turning the screw  $H'$  in the proper direction by means of a key or other appropriate device applied to its lower end or otherwise. When brought in contact with the lower end of the center staff, all downward strain or pressure applied to the upper end of the latter for whatever purpose will be transferred thereto and resisted and the breaking or dislodgment of the jewel  $e^2$  thereby entirely obviated. The plug  $H$  being loosely fitted to the interior of the tubular journal C, the support containing it may when not required to resist pressure applied to the upper end of the center staff be removed from the holder by simply detaching it therefrom after the movement has been released from the jaws and the holder then employed without it.

It will thus be seen that I produce a holder for watch-movements which is extremely simple in construction and which not only permits of the holding of the watch-movement when supplied thereto either side up or down, but affords, when required, a firm sustaining means for the center staff, whereby all pressure exerted downward upon it is resisted and the liability of all damage to and dislodgment of its under jewel entirely obviated.

While in the foregoing I have described the form of my invention which I prefer in practice, I wish it distinctly understood that I do not limit myself strictly thereto, but reserve to myself the right to modify the same in various ways without departing from the spirit thereof.

Having now described my invention and specified the best means contemplated by me for carrying it into practice, I claim and desire to secure by Letters Patent of the United States—

1. The combination, with a base-plate, a plurality of disks pivoted to its upper side and provided with gear-teeth in their peripheries, and a jaw secured to each of such disks eccentric to its pivot and adapted to engage with, and, with the other jaws, firmly hold a watch-movement when supplied thereto either with the face upward or downward, of a gear for engaging with the teeth of said disks, a handle or support and devices by which such gear is connected with this handle or support, substantially as described.

2. The combination, with a base-plate, a

plurality of disks pivoted to its upper side and provided with gear-teeth in their peripheries, and a jaw secured to and projecting upwardly from the upper side of each of such disks eccentric to its pivot and adapted to engage with, and, with the other jaws, firmly hold a watch-movement when supplied thereto either with the face upward or downward, of a gear arranged intermediate such disks and engaging with the teeth thereon, a handle or support, a tubular journal by which this handle or support is connected with said gear, and a spring connected at one end with the base-plate and at the other with the tubular journal, whereby to normally hold the jaws in positions of nearest approach to a central point, substantially as described.

3. The combination, with a plurality of jaws constructed in the form of studs, with each provided intermediate its length with an outwardly-extending flange and with a sharp square corner at its upper end, and a base-plate upon which these jaws are supported, of means by which such jaws may be moved toward and away from a central point, whereby such jaws may be engaged with and firmly hold a watch-movement supplied between them either with the watch-face downward or upward, substantially as described.

4. The combination, with a holder that is adapted to engage with and firmly hold watch-movements of different sizes with the face of the watch upward, of a mechanism for engagement with the lower ends of the center staffs of such movement to sustain any pressure applied to the upper ends of such staffs in pressing on the hands of their respective watches or otherwise, substantially as described.

5. The combination, with the jaws of a holder for watch-movements, adapted to move toward and away from a central point whereby to engage with and firmly hold watch-movements of different sizes with the face uppermost, a bed-plate upon which they are supported, a handle or support, and a tubular journal by which the bed-plate and handle or support are connected, of a block or plug adapted to enter the aperture in the tubular journal, and a screw passing through such block or plug and adapted at its upper end to contact with the lower end of a center staff of a watch-movement held by said jaws, to resist pressure applied to the upper end of such staff, substantially as described.

6. A support for the center staff of a watch-movement, comprising a block or body portion adapted to be supported from a holder for watch-movements and be removed therefrom, and a screw extending upward through such block or body portion and adapted at its upper end to contact with the lower end of such staff, substantially as described.

7. A support for the center staff of a watch-movement, comprising a block which is adapt-

ed to enter and fit an aperture in a watch-  
movement holder and be removed therefrom,  
and a screw which extends upwardly through  
and is threaded in such block and is adapted  
5 to contact at its upper end with the lower  
end of a center staff of a watch-movement,  
substantially as described.

In witness whereof I have hereunto set my  
hand this 18th day of November, 1901.

FREDERICK LEACH.

Witnesses:

WM. H. APPLETON,  
R. F. SWEENEY.