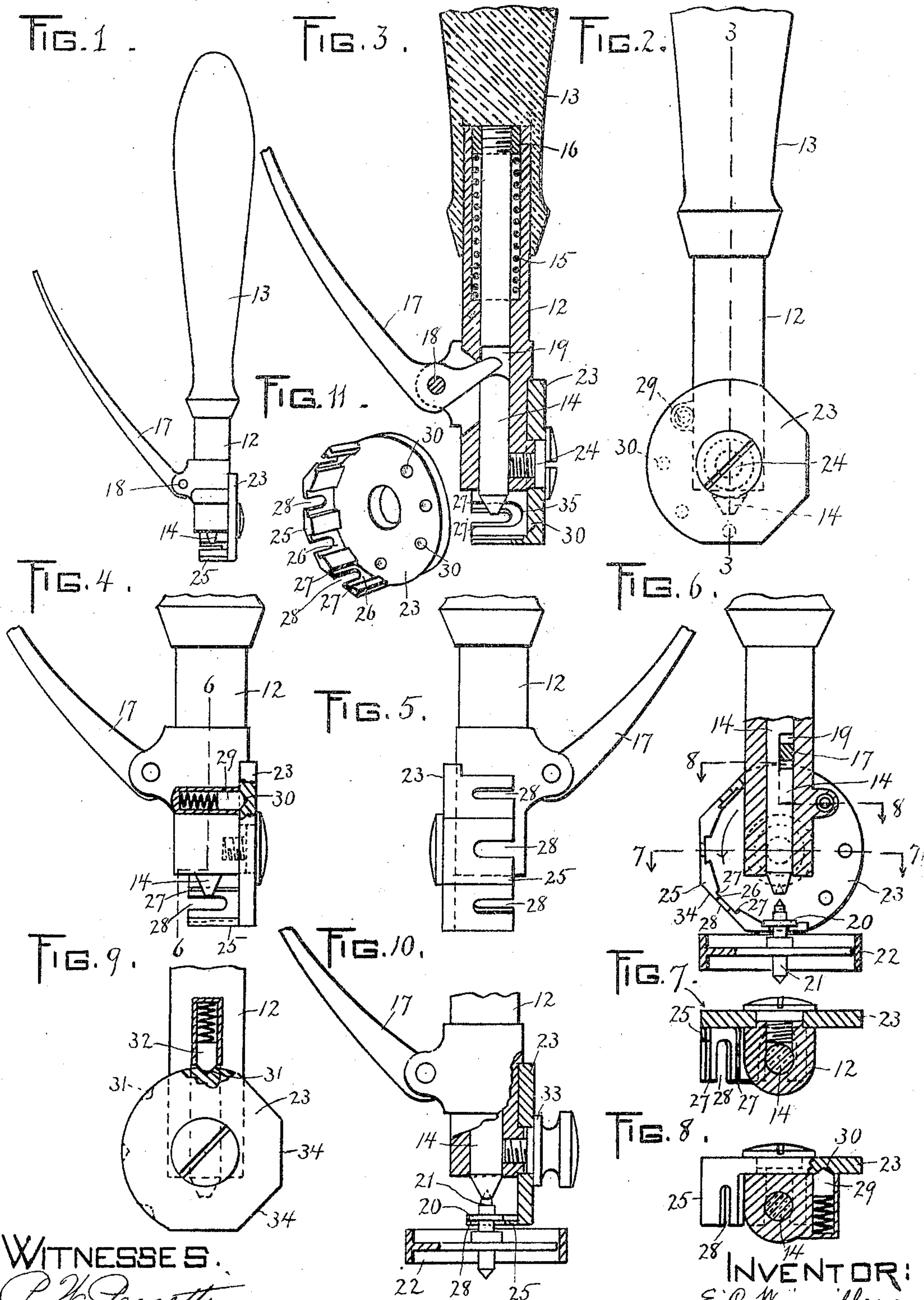


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WATCH ROLLER REMOVER.
APPLICATION FILED FEB. 8, 1905.

FIG. 1.

FIG. 3.

FIG. 2.



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WATCH-ROLLER REMOVER.

No. 797,993.

Specification of Letters Patent.

Patented Aug. 22, 1905.

Application filed February 8, 1905. Serial No. 244,722.

To all whom it may concern:

Be it known that I, EMMA C. WEISSMILLER, of Lead, in the county of Lawrence and State of South Dakota, have invented certain new and useful Improvements in Watch-Roller Removers, of which the following is a specification.

This invention relates to tools for separating parts of watches, and particularly for removing from the staff of a watch-balance the disk known as the "roller."

The invention has for its object to provide a convenient tool of this character adapted to cooperate with rollers of different sizes and to conveniently remove the staff from the roller.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of a tool embodying my invention. Fig. 2 represents an enlarged view of the tool from a different point of view, the handle portion being partly broken away. Fig. 3 represents a section on line 3 3 of Fig. 2. Fig. 4 represents an enlargement of a portion of Fig. 1, parts being shown in section. Fig. 5 represents an elevation of the side of the tool opposite that shown in Fig. 4. Fig. 6 represents a section on line 6 6 of Fig. 4. Fig. 7 represents a section on line 7 7 of Fig. 6. Fig. 8 represents a section on line 8 8 of Fig. 6. Fig. 9 represents an elevation similar to that shown in Fig. 2, illustrating a modification. Fig. 10 represents an elevation, partly in section, showing another modification. Fig. 11 represents a perspective view of the turret hereinafter referred to.

The same reference characters indicate the same parts in all the figures.

In the drawings, 12 represents a shank, which is preferably tubular and is or may be provided with a handle 13.

14 represents an ejecting-plunger which is longitudinally movable in the shank and is adapted to be projected from one end thereof, the said plunger being normally held in a retracted position, as shown in Fig. 2, by means of a spring 15, bearing at one end on the bottom of a recess formed in the shank and at the other end on a collar 16, affixed to the upper end of the plunger.

17 represents a lever pivoted at 18 to ears on the shank, the longer arm of said lever constituting a handle, while the shorter arm projects through a slot in the shank and enters a notch 19, formed in the plunger 14. When the longer arm of the lever is moved inwardly toward the shank, the shorter arm projects the lower end of the plunger from the shank. To the shank is movably connected a holder provided with a series of roller-rests, each adapted to engage a roller 20, frictionally engaged with the staff 21 of a watch-balance 22. The said rests are of different sizes, so that each is adapted to engage a roller of a given diameter, each rest being adapted to hold a roller, with the arbor engaged therewith, in alinement with the longitudinal center of the plunger 14, so that when the plunger is projected the roller will be supported by the rest against the pressure of the plunger, said pressure being exerted on the staff and forcing the latter from the roller. Means are provided for securing the rest-holder to the shank in a series of positions in such manner that each rest may be secured in its operative relation to the plunger. The said rest-holder is preferably a disk or turret 23, mounted to turn upon a pivot pin or stud 24, which constitutes an axis at right angles with the plunger 14, said axis being affixed to the shank 12. The turret is provided with a segmental flange 25, on which the series of roller-rests are formed, each rest comprising a flat seat 26, formed on the inner side of the flange 25, and shoulders 27 27 at the opposite edges of said seat. In each seat 26 is formed a slot 28, adapted to receive the staff 21. The width of each seat 26 is such that the roller to be supported by the seat fits accurately between the shoulders 27 27 and is prevented from movement on the seat crosswise of the slot 28, each seat being of a different width from the other seats, so that a series of rollers of different diameters can be held by the series of seats. The slot 28 in each seat is formed midway between the shoulders 27, so that the longitudinal center of the staff 21 is equidistant from said shoulders.

It will be seen by reference to Figs. 6 and 10 that the holder or turret 23 is adapted to be adjusted to bring a staff 21, engaged with a roller supported by either of said rests, into alinement with the plunger 14, so that if the

turret is locked to the shank the roller and staff are securely held in such manner that the projection of the plunger will force the staff endwise from the roller. The preferred means for locking the holder or turret in a series of positions comprise a spring-pressed detent 29, located in a socket on the shank, and a series of sockets 30, formed in the turret, each socket being adapted to engage the pin and to hold one of the rests in its operative relation to the ejecting-plunger 14. In Figs. 2, 3, 4, 6, and 8, the said sockets are shown as formed in one side of the turret, the detent being correspondingly arranged.

In Fig. 9 I show sockets 31 formed in the perimeter of the turret, and a detent 32 adapted to engage said sockets.

In Fig. 10 I show as the means for securing the turret in its different positions a flange or shoulder 33 formed on the screw, which serves as the axis of the turret, said flange being adapted to clamp the turret against the shank.

The outer side of the flange 25 is preferably provided with a series of flat faces 34, these faces coinciding with the roller-seats and so reducing the thickness of the flange at the points where the arbor-receiving slots are formed as to enable the flange to enter the necessarily-limited space between the roller and the plane of the adjacent edge of the balance-rim.

In Fig. 3 I show the shoulders 27 connected by a segmental shoulder portion 35, while in Figs. 4, 7, and 11 the said shoulders are extended parallel with each other to the body of the turret.

I claim—

1. A watch-roller remover comprising a shank having a longitudinally-movable ejecting-plunger, and a holder movably engaged with the shank and having a plurality of roller-rests either of which is adapted to be moved into operative relation with the plunger.

2. A watch-roller remover comprising a shank having a longitudinally-movable ejecting-plunger, a holder movably engaged with the shank and having a plurality of roller-rests either of which is adapted to be moved into operative relation with the plunger, and means for securing the said holder to the

shank with either rest in an operative position.

3. A watch-roller remover comprising a shank having a longitudinally-movable ejecting-plunger, and a holder formed as a turret rotatably engaged with the shank and provided with a plurality of roller-rests, either of which is adapted to be moved into operative relation with the plunger.

4. A watch-roller remover comprising a shank having a longitudinally-movable ejecting-plunger, and a holder formed as a turret rotatably engaged with the shank and provided with a plurality of roller-rests, either of which is adapted to be moved into operative relation with the plunger, means being provided for securing the turret to the shank in different positions.

5. A watch-roller remover comprising a shank having a longitudinally-movable ejecting-plunger, and a holder formed as a turret rotatably engaged with the shank and provided with a plurality of roller-rests, either of which is adapted to be moved into operative relation with the plunger, the shank having a spring-pressed detent, and the turret a series of sockets to engage said detent.

6. A watch-roller remover comprising a shank having a spring-retracted plunger, and a pivoted projecting lever engaged with the plunger, and a holder movably engaged with the shank and having a plurality of roller-rests, either of which is adapted to cooperate with the plunger.

7. A watch-roller remover comprising a shank having a longitudinally-movable ejecting-plunger, and a turret mounted to turn on an axis at right angles with the plunger and having a flange adapted to project under the plunger, the said flange being provided with a series of staff-receiving slots, and with shouldered roller-engaging seats on its inner surface communicating with said slots, the outer surface of the flange having flat faces.

In testimony whereof I have affixed my signature in presence of two witnesses.

EMMA C. WEISSMILLER.

Witnesses:

J. L. CURRAN,
S. A. FRAME.