A. F. ROBBINS.

WATCHMAKER'S TOOL.

APPLICATION FILED JUNE 11, 1914.

1,109,942. Patented Sept. 8, 1914.

Fig. 1.

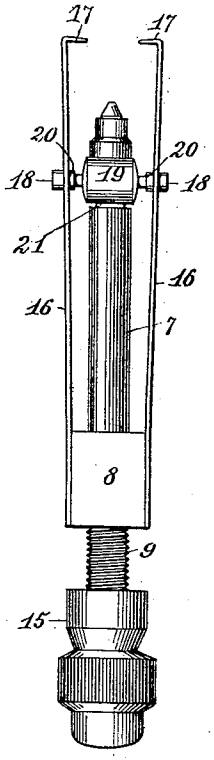


Fig. 2.

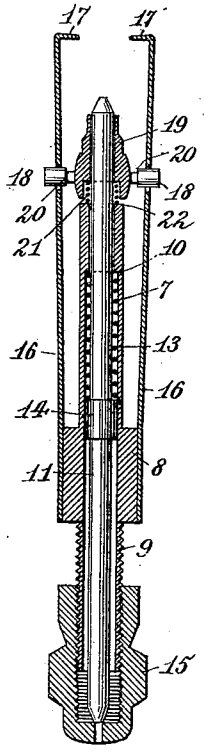


Fig. 3.

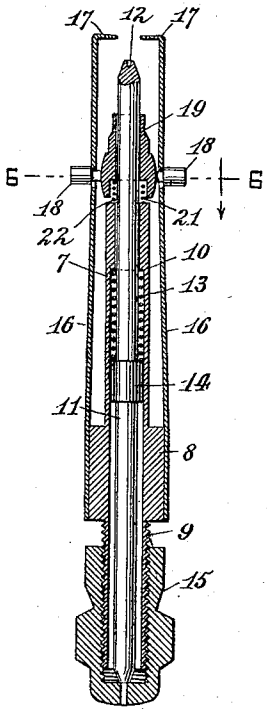


Fig. 5.

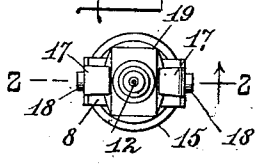


Fig. 4.

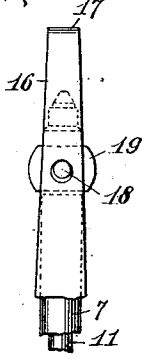
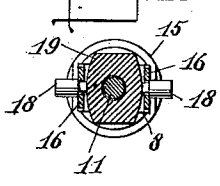


Fig. 6.



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WATCHMAKER'S TOOL.

1,109,942. Specification of Letters Patent. Patented Sept. 8, 1914.

Application filed June 11, 1914. Serial No. 844,410.

To all whom it may concern:

Be it known that I, ALBERT F. ROBBINS, a citizen of the United States, and a resident of Waltham, in the county of Middlesex and State of Massachusetts, have made and invented certain new and useful Improvements in Watchmakers' Tools, of which the following is a specification.

My invention relates to an improvement in watchmakers' tools, and while applicable to various instruments, such, for instance, as tweezers and the like, yet I have designed it more particularly for use in connection with tools for removing the hands of a watch or clock and also the impulse roller from the balance staff, the use of like tools being well understood by those skilled in the art.

The object of the invention is to provide a tool of this character which shall be simple in construction, of but few parts easily and readily assembled, and therefore economical to manufacture, and which shall be effective for the purposes for which the same is intended, and with these and other ends in view, the invention consists in certain novel features of construction and combinations of parts as will be hereinafter fully described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation of my improved tool. Fig. 2 is a vertical sectional view thereof and taken on the line 2—2 of Fig. 5 looking in the direction as indicated by the arrow. Fig. 3 is a similar view showing the spring jaws in their closed positions for removing the hands or impulse roller. Fig. 4 is a side elevation of a part of the tool. Fig. 5 is an end view of the same. Fig. 6 is a horizontal sectional view taken on the line 6—6 of Fig. 3 and looking in the direction as indicated by the arrow.

Referring to the drawings, it will be seen that the device consists of a tube 7 having formed thereon, or secured thereto, the block 8, that portion of the tube extending from the rear end of the block 8 being externally threaded as indicated at 9. The opening or passageway through the tube 7 is of two different diameters, forming the shoulder 10, through which opening or passageway extends the rod 11, the extreme forward end of which is formed with a recess 12 to receive the end of the balance staff when the tool is used to remove the roller therefrom. Within the barrel or tube 7, and encircling a portion of the rod 11, is located a coil spring 13, one end of which impinges against the shoulder 10, and the opposite end of which fits against a collar 14 formed on, or secured to, the pin 11, the tendency of the spring being to force said pin 11 backwardly or rearwardly in the barrel or tube 7. Onto the threaded portion 9 of the barrel 7 is fitted the hollow knurled nut or cap 15, the rear end of the pin 11 fitting against the extreme end of said cap, the result being that when the nut or cap 15 is turned in one direction, that is, to the right, it will force the pin or rod 11 forward through the tube 7, that is, from the position as illustrated for instance in Figs. 1 and 2, to the position as illustrated in Fig. 3, and at the same time compressing the coil spring 13. When the nut or cap 15 is turned in the opposite direction, that is, from right to left, the spring 13, bearing at one end against the shoulder 10, and at the opposite end against the collar 14, will return the pin or rod 11 to its normal position, that is, from the position as illustrated in Fig. 3 to the position as illustrated in Figs. 1 or 2. To the block 8 are secured the rear ends of the spring jaws 16, the free forward ends 17 thereof being bent or turned in at right angles as usual in this type of tool, the tendency of the jaws being to spring open as illustrated in Figs. 1 and 2 of the drawing. Through these jaws 16 extend the pins 18 formed on, or secured to, the sleeve 19 fitting around, and movable upon, the stem 11, each of these pins 18 having its diameter somewhat reduced where it joins or is connected with the sleeve 19, thereby forming a shoulder 20, the rear end of said sliding sleeve 19 being provided with a recess into which fits one end of a coil spring 21, the opposite end of said spring fitting against the extreme end 22 of the tube or barrel 7, the tendency of said spring 21 being, therefore, to push or force forward the sleeve 19 on the rod or stem 11.

If, when the parts are in the positions as illustrated in Figs. 1 and 2, the spring jaws 16 be pressed toward each other into the position as illustrated in Fig. 3, so that said jaws slide off of the larger portions of the pins 18 onto the reduced portions thereof, the spring 21 will force forward the sliding sleeve 19, and the jaws held in that position by impinging against the shoulders 20 on said pins, the spring jaws being in

proper position for removing the hands or balance roller. If it be desired to open the jaws 16, it is simply necessary to push backwardly on the pins 18, thereby compressing the spring 21 and sliding backwardly the sleeve 19 until such time as the openings in the spring jaws will permit of the latter sliding onto the enlarged portion of the pins as illustrated in Figs. 1 and 2. In other words, when the jaws are closed together, the pins 18 will automatically move forward under the action of the spring 21 and hold the jaws in such closed position, and a slight push or pull backwardly on the pins will allow the jaws to resume their open position.

When the jaws are in the position as illustrated in Fig. 3, that is, in a position to clasp an impulse roller, the cap or nut 15 may be then so turned as to force forwardly the stem or rod 11, which, as in tools of like character, will gradually force the balance staff out of the roller without injury thereto.

From the foregoing it will be understood that my invention is exceedingly simple in construction, and can be manufactured and readily assembled at a small cost.

What I claim is:—

1. A tool comprising in part a pair of spring jaws provided with openings, a stem, and a spring-actuated sleeve slidably mounted on said stem and provided with shouldered pins extending through the openings in said jaws for holding the latter in their closed position.

2. A tool of the character described comprising a tube, a stem passing through said tube, a spring contained within said tube and around said stem for moving the latter in one direction, a cap threaded onto one end of said tube and bearing against the end of said stem for moving the latter in the opposite direction, spring-actuated jaws secured to said tube, and means for retaining said jaws in their closed position.

3. A tool of the character described comprising a tube, a movable stem extending through said tube, spring jaws secured to said tube and provided with openings, and a spring-actuated sleeve slidably fitting on said stem and provided with shouldered pins extending through openings in said jaws to retain the latter in their closed position.

Signed at Waltham in the county of Middlesex and State of Massachusetts this eighth day of June, A. D. 1914.

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Witnesses:
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WILLIAM MCGOLDRICK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."