

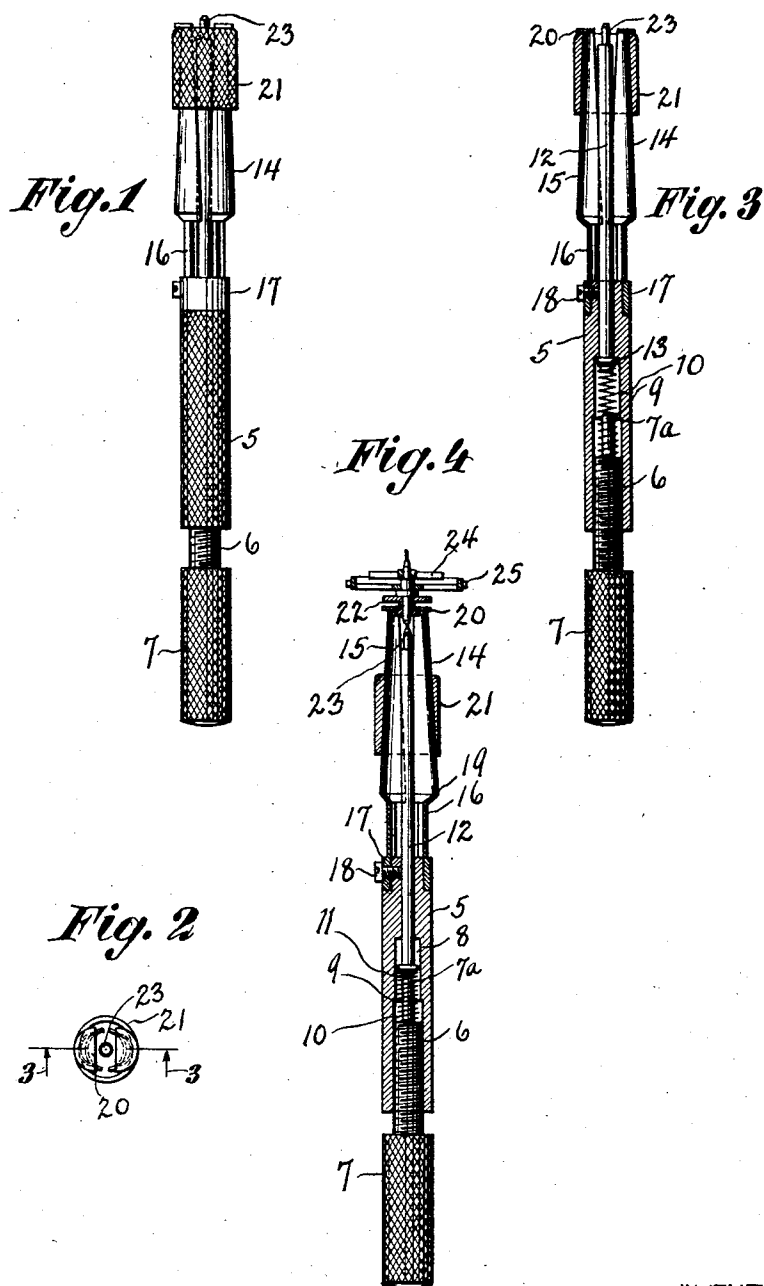
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ROLLER REMOVER

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ROLLER REMOVER.

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This invention relates to watch maker's tools and more particularly to a novel and improved roller remover which may be easily detached from the balance staff or pivot when necessary as in the repairing of a watch.

One of the objects of my invention is to provide a roller engaging and clamping tool constructed and arranged to permit the roller to be separated from the pivot or balance staff, hair spring and watch wheel without injury or defacing any of the same incident to their handling.

A further object of my invention is to provide a roller engaging and clamping tool capable of use in connection with any size roller of a watch including means for forcing the pivot or balance staff through said roller for separation therefrom.

Another object of my invention is to provide a watch maker's tool which is extremely simple in construction, easily handled and manipulated, comprises but few parts which may be easily assembled, practicable, compact and having other uses in handling and removing the delicate parts of a watch mechanism.

To enable others skilled in the art to more fully comprehend the underlying features of my invention that they may embody the same in the many practical advantages over other instruments of a similar nature, reference is had to the accompanying drawing wherein

Fig. 1 is a perspective view showing the tool.

Fig. 2 is a top plan showing the clamping or gripping end of the tool.

Fig. 3 is a sectional view taken on the line 3-3 of Fig. 2.

Fig. 4 is a view similar to Fig. 3 and showing the manner of gripping and clamping the roller for its removal.

Referring now to the drawing wherein like reference characters designate corresponding parts, 5 designates a tubular, tool body having an internally threaded bore for a threaded stem 6 formed preferably integral with the end body section 7. The stem 6 is provided with a rigid pin 7^a that extends into a socket 8^a above the shoulder 9 which limits the inward movement of the stem.

On the rigid pin and within the socket 8 there is provided a resilient spring 10, one end of the spring bearing on the end of the threaded stem and the opposite end engag-

ing the end 11 of a push rod 12 which extends through a bore of the opposite end of the tubular body 5. The push rod 12 is provided with a stop collar 13 which prevents its withdrawal from the tubular body but permits it to be urged inwardly against the resistance of the spring, as shown by Fig. 4 of the drawing.

The push rod is held between a pair of clamping jaws 14, 15, each of which is semi-spherical in cross section and connected by narrow strips 16 to a collar 17, said collar being located in the upper end of the body and securely held therein by the screw 18.

It will be noted that the jaws 14, 15 taper slightly from the bottom portion 19 to the top flange 20, said jaws having a clamping or locking sleeve 21 which may be moved downwardly to the position shown by Fig. 4 for instance so that the top flange 20 of each of the jaws may engage roller 22.

The upper end of the push rod 12 is of reduced thickness and considerably less in diameter as shown by 23 and is provided with a pin hole in the top in which the pivot post may be set and centered together with the spring 24 and watch wheel 25 from which the roller is to be disconnected.

It will be seen that when the post is set on the reduced end of the push rod and the jaws 14, 15 are in their normally separated or spaced relation as illustrated by Fig. 3, the lower portion of the roller will be below the flanges 20 and that when the locking sleeve is moved downwardly, the said roller will be clamped and locked. While the spring tends to force the push rod outwardly, the said push rod is free to move inwardly when the threaded stem is partially unthreaded. Since the push rod and post are in engagement, as the threaded stem is rotated, the push rod will be forced outwardly and consequently urged through and become separated from the roller which is held tightly in clamped relation by the flanged portion of the jaws. The post, hair spring and watch wheel are thus removed from the roller as a unit without damage to any of the parts.

Having shown and described my invention what I now claim as new and desire to secure by Letters Patent is:

1. A roller remover comprising a tubular body, tapered clamping jaws having a locking sleeve cooperating therewith connected to one end of the body, a push rod between

the jaws and extending within the said body, the outer end of said push rod being disposed for movement relative to the outer ends of the clamping jaws to engage the pivot post of a roller mounted on a watch mechanism and a threaded stem in the opposite end of the tubular body for advancing the push rod whereby the post may be disengaged from the roller.

2. A roller remover comprising a tubular body, clamping jaws having segmental flanged outer ends for engaging the periphery of a roller mounted on the pivot post of a watch mechanism, a locking sleeve co-operating with said clamping jaws, a push rod between the jaws and adapted to engage the pivot post of said roller and a threaded stem for advancing said push rod whereby the pivot post may be disengaged from the roller when held by the clamping jaws.

3. A roller remover comprising a tubular body, a collar connected to one end of said body and having tapered clamping jaws

semi-circular in cross section, a resiliently controlled push rod extending within the body and disposed between the jaws, a locking sleeve on said jaws for clamping a roller therebetween and a threaded stem within the opposite end of the body for advancing the push rod between and beyond said jaws to disengage the roller from a pivot post.

4. A roller remover comprising a tubular body, a collar connected to one end of said body and having tapered clamping jaws, semi-circular in cross section, for engaging the periphery of a roller, a push rod extending within a socket of the tubular body, said push rod being adapted to engage a pivot post on which said roller is mounted, and a threaded stem within the opposite end of the tubular body for advancing the push rod to disengage the roller from the pivot post.

In testimony whereof I affix my signature.

SOLOMON HELFGOTT.