(No Model.)

J. A. MILLER.

WATCH MAKERS' TWEEZERS.

No. 408,037. Patented July 30, 1889.

Fig. 1.

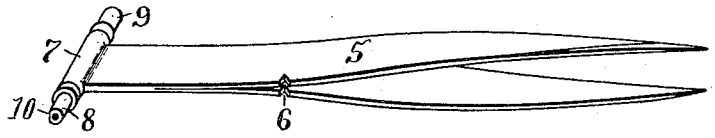


Fig. 2.

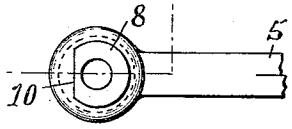


Fig. 3.

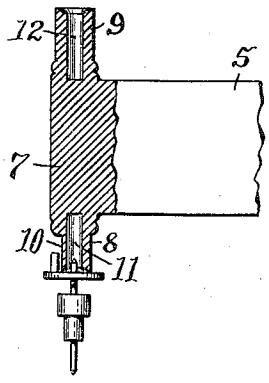
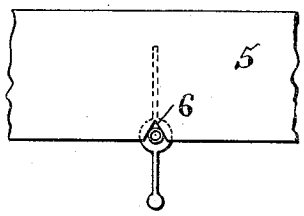


Fig. 4.



WITNESSES:
Chas. H. Luther Jr
E. L. Slocum.

INVENTOR:
John A. Miller
by Joseph A. Miller & Co
Attys

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN A. MILLER, OF CAIRO, ILLINOIS.

WATCH-MAKERS' TWEEZERS.

SPECIFICATION forming part of Letters Patent No. 408,037, dated July 30, 1889.

Application filed June 23, 1888. Serial No. 277,986. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. MILLER, of Cairo, in the county of Alexander and State of Illinois, have invented certain new and useful Improvements in Tweezers for Watch-Makers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

The object of my invention is to provide tweezers for the use of watch-makers with an attachment whereby the foot or cock jewel may be readily removed from the potance of a watch and as readily returned to its proper place; also, in providing a device by means of which the seconds-hand of a watch may be held while the bushing is being broached or reamed so as to fit the pivot.

To the above purposes my invention consists in the certain novel combinations of the different features, as hereinafter fully described and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view of a pair of watch-maker's tweezers provided with my improvements. Fig. 2 is a top view of part of the tweezers and the end used to force the roller-plate onto the staff. Fig. 3 is a side view of part of the tweezers with my improvements in section, the section being taken on the line 3 3 of Fig. 2, and indicating the act of forcing a roller-plate onto the staff. Fig. 4 is a side view of part of the tweezers, showing a seconds-hand as being held for the purpose of being broached.

In the said drawings like numbers of reference designate corresponding parts throughout.

The tweezers 5 are of the ordinary form used by watch makers and repairers. The V-shaped cut 6 is made near the closed end of the tweezers, and serves the purpose of supporting the bushing of the hand to be broached or reamed. As shown in Fig. 4, the hand is placed between the blades of the tweezers, allowing the bushing to rest in the V-shaped cut 6. The blades are then pressed together, thereby securely holding the hand while the bushing is being broached to fit the arbor on which it is to be mounted. At the end of the tweezers is attached or formed the jewel push-piece 7, having the two hollow ends 8 9. The end 8 is especially adapted to the use of replacing the roller-plates on the staffs of watches. By reason of the flattened side 10 the roller-jewel is protected from any strain, and the necessary force for properly replacing the roller-plate on the staff comes directly onto the plate, thereby preventing the breaking or injury of the roller-jewel. The end 8 being of less diameter than the end 9, is also of great use in forcing foot and other jewels out of their holding-sockets. The sockets 11 and 12, formed in the ends 8 and 9, may be made of various diameters suitable to the work for which the tool is used, and may be beveled, as clearly shown in Fig. 3, to prevent any slip and to more firmly seat the tool. The end 9 being of larger diameter than the end 8, is especially adapted for the replacing of foot and other jewels in their sockets, for use in pressing on the hands of watches, and for various other purposes.

In the ordinary practice of replacing cock and foot jewels it is usual for the operator to employ a piece of wood, which materially increases the risk of breaking or injuring the jewels in replacing the same on the potance, whereas in using my improved tweezers the force coming upon the metal bush and the jewels being protected from all pressure by reason of the flattened side 10, all danger of breakage or injury is averted.

The ends 8 and 9 may be variously modified in shape to suit the particular use to which they are to be applied without departing from the spirit of my invention, and in place of the V-shaped cut 6 a concave cut, into which the shafts of a wheel may be placed, may be made in the arms of the tweezers 5. It is evident that more than one set of ends of the desired form may be made in the arms of the tweezers.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. Watch-makers' tweezers provided with cylindrical projections extending beyond the plates of the tweezers at the union of the plates, adapted to push jewels into and out of their settings, as described.

2. As a new article of manufacture, twee-

zers provided with projecting tubes at the end where the arms of the tweezers are united to form jewel push-pieces, as described.

3. Watch-makers' tweezers provided with jewel push-pieces, consisting of projecting tubes, one of which tubes has a flattened side, as described.

4. Watch-makers' tweezers provided with jewel push-tubes at the union of the tweezer-arms, said arms being also provided with cuts, as described.

5. A new article of manufacture, consisting of the tweezers 5, the V-shaped cut 6, and the tubes 8 and 9, as described.

JNO. A. MILLER.

Witnesses:
JACOB A. GOLDSTINE,
H. H. CANDEE.