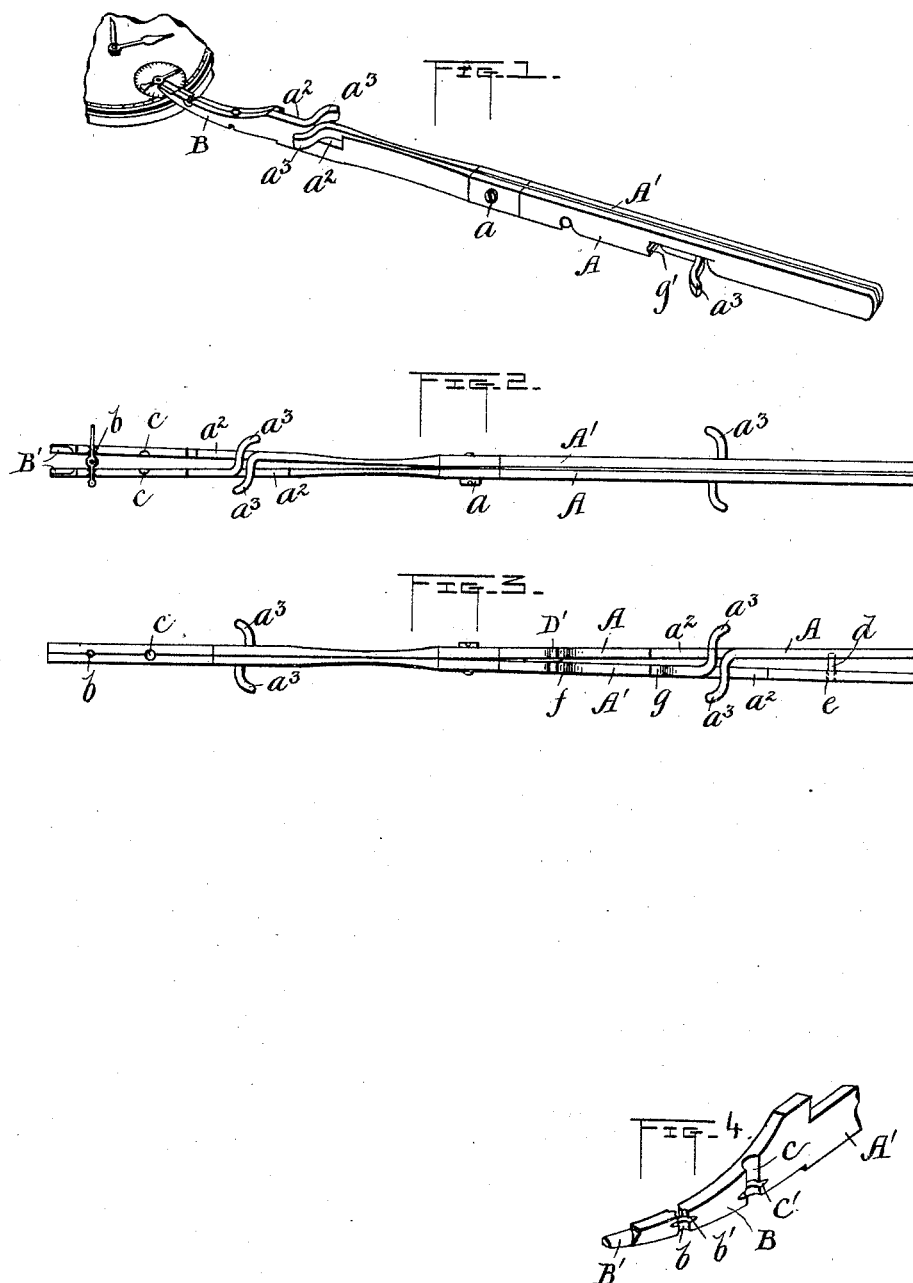


(No Model.)

J. FISHER.
WATCH MAKER'S TOOL.

No. 458,546.

Patented Aug. 25, 1891.



Witnesses

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JACOB FISHER, OF ELIZABETHTOWN, ASSIGNOR TO EZRA F. BOWMAN, OF LANCASTER, PENNSYLVANIA.

WATCH-MAKER'S TOOL.

SPECIFICATION forming part of Letters Patent No. 458,546, dated August 25, 1891.

Application filed February 25, 1891. Serial No. 382,715. (No model.)

To all whom it may concern:

Be it known that I, JACOB FISHER, a citizen of the United States, residing at Elizabethtown, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Watch-Makers' Tools; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide a cheap, simple, compact watch-maker's tool, which may be used for detaching and holding hands and for other purposes.

To this end the said invention consists in the construction and combination of devices hereinafter particularly set forth and claimed.

In the accompanying drawings, Figure 1 represents a perspective view of the combined watch-maker's tool embodying my invention, the same being in its closed position. Fig. 2 represents a plan view of the same with its front jaws spread apart. Fig. 3 represents a similar view, the said front jaws being closed and the rear plates spread apart, the tool being inverted. Fig. 4 represents an enlarged detail perspective view of one of the said jaws.

A and A' designate two long flat counter-part spring-metal plates arranged side by side and fastened together near the middle by a screw *a*. Near the ends each of these plates is provided with recesses *a*² and bent arms *a*³, the arm near each end of each plate curving outward through the contiguous recess of the other plate, there being one arm and one recess in each plate near each end, preferably formed by cutting out a tongue of metal and giving it the requisite curvature. The arms thus presented are grasped between the operator's thumb and forefinger and pressed toward each other for opening the tool, which constitutes a double pair of spring-tweezers naturally tending to close, but opened at will at each end by a pair of arms thus pressed upon. The forward ends of said plates are formed into tapering jaws B, which are curved slightly upward and have the inner faces B' of their tips beveled upward and outward.

Behind these beveled tips the said jaws have two corresponding recesses *b* from the top downward for holding the seconds-hand. Each recess consists of a narrow upper neck and an enlarged opening *b'* below it, the two openings combined being of proper size and shape to admit and hold the enlargement or small flat boss which is commonly formed on the middle of a seconds-hand to receive the arbor. Farther to the rear in each jaw is a second recess *c*, having a greater enlarged part or opening *c'*, these recesses *c* of the said jaws being used for holding the hour or minute hand. The rear part of plate A is provided with an inwardly-extending pin *d*, which enters a hole *e* in the opposite plate A', so as to brace the latter against upward or downward motion, while not obstructing lateral separation. The ends of the said plates A A' contiguous thereto may be used to hold an additional tool or employed for grasping small objects.

The operation is as follows: To hold watch-wheels or other small objects, merely press the jaws apart, as stated, and let them close thereon by their own resiliency. To dislodge a hand from its arbor, spread the jaws so that they will pass on each side of said arbor. Then while the arbor is between them allow them to close. The inclined faces B' in so doing will bear against the inner face of the hand with a steady outward pressure, and thus remove it from the arbor without straining the latter at all. To hold a hand after detachment or before being applied, spread the jaws, pass them under the hand or lay the latter on them, letting the stem of the hand on each side of the middle enlargement enter the narrow necks of recesses *b* or *c*, as the case may be, and pass down into the enlarged parts or openings *b'* or *c'*. Then allow the jaws B to close, the said openings conjointly receiving the middle boss or enlargement of the hand and the latter being held securely for broaching, reaming, or any other necessary treatment. As the closing action of the jaws B is due to their own elasticity and not to any pressure of the operator's hand, and as this elasticity remains always substantially the same, there is very

little danger of a hand flying off when separated from its arbor by said jaws, nor of any other result of excessive or irregular pressure, such as must frequently occur with nervous or careless workmen if the jaws are not automatic.

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

10 1. A watch-maker's tool provided with a pair of automatically-closing jaws having beveled inner faces in order that they may dislodge a watch-hand from its arbor by pressure independent of the force or inaccuracy of the human hand, substantially as set forth.

15 2. A watch-maker's tool provided with a pair of elastic plates fastened together and formed at their free ends into jaws which have beveled inner faces for dislodging a watch-hand from its arbor, the jaws being

constructed and arranged to close by their own resiliency, substantially as set forth.

3. A watch-maker's tool provided with a pair of automatically-closing spring-jaws having beveled inner faces for detaching watch-hands and also provided in their inner faces with recesses for holding watch-hands after detachment, substantially as set forth.

4. A watch-maker's tool provided with a pair of automatically-closing spring-jaws which have beveled inner faces, the said jaws being also provided with recesses for holding jewels or other small articles, substantially as set forth.

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

JACOB FISHER.

Witnesses

M. G. KELLER,
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