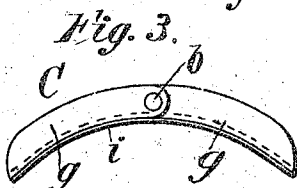
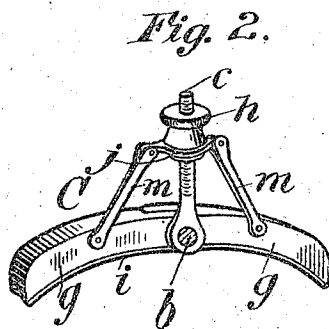
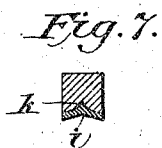
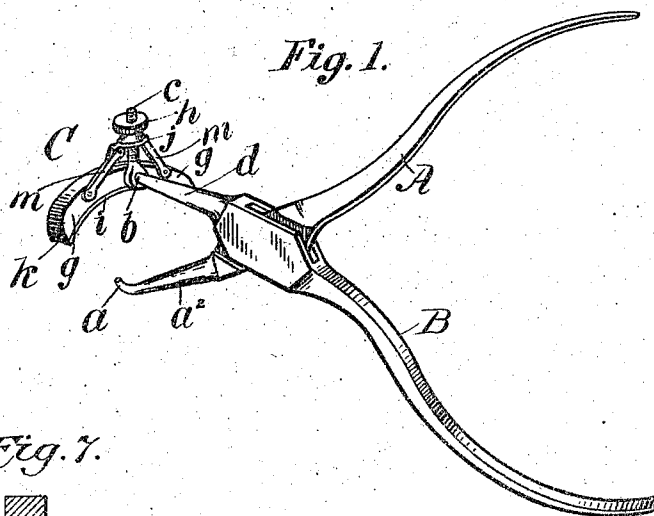


(No Model.)

E. R. KANT.
WATCHCASE SPRING PLIERS.

No. 537,926.

Patented Apr. 23, 1895.



Witnesses:

John Boedeker
A. N. Gardner

Inventor,

Edward R. Kant,
by Chapin & Co. Attys.

UNITED STATES PATENT OFFICE.

EDWARD R. KANT, OF LANCASTER, PENNSYLVANIA, ASSIGNOR TO EZRA F. BOWMAN, OF SAME PLACE.

WATCHCASE-SPRING PLIERS.

SPECIFICATION forming part of Letters Patent No. 557,926, dated April 23, 1895.

Application filed August 13, 1894. Serial No. 520,156. (No model.)

To all whom it may concern:

Be it known that I, EDWARD R. KANT, a citizen of the United States, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, have invented new and useful Improvements in Watchcase-Spring Pliers, of which the following is a specification.

This invention relates to improvements in pliers which are designed to hold watch-case springs to facilitate the insertion thereof into the case.

The invention consists in a pliers having, in combination with the curved jaw composed of articulated members, means for changing and holding in their changed positions the adjustable members of the said jaw so that the same may be caused readily to conform to the curves of springs and cases which are of greater or less diameter or radius.

In the accompanying drawings, Figure 1 is a perspective view of the improved watchcase-spring pliers. Fig. 2 is a perspective view of the curved jaw and the devices for variably adjusting the curvature thereof. Figs. 3, 4, and 5 are views illustrating details of the devices. Fig. 6 is a sectional view in detail illustrating a construction to be herein-after particularly described. Fig. 7 is a cross sectional view for showing the transverse contour of the curved jaw.

Similar letters of reference indicate corresponding characters in all of the views.

The pliers consists of the two crossed and pivotally united levers, A and B, having the handle members curved as common, while of the arms at the other ends thereof one is curved, as at *a*, to produce a short, rigid finger at, or nearly at, right angles to the arm, *a*², of which it is a part. The other arm, *d*, carries the jaw, C, which comprises the curved part that is designed to bear upon the outer edge of the watch-case and which has a curvature corresponding to the circular center of the watch-case. This curved part is constructed of two curved segments, *g*, *g*, pivotally united, as at *b*, so that when swung on their supporting pivot they may lie in, or approximately to, a curve of large radius, or a smaller one so that this jaw may be set to conform to cases of varying sizes. The pivot may

be constituted by the integral extremity of the arm, *d*. The movable members of the jaws are adjusted to the different curves, and when adjusted so held by the provision of the devices as follows: A screw-threaded post, *c*, is secured to, and projected perpendicularly from, the arm, *d*, next to the rear side of the movable segments, *g*, upon which post screws the nut, *h*, with knurled rim. This nut, as it moves endwise on the screw-threaded post, carries bodily,—while it is rotatable independently of,—a collar or sleeve, *j*, with the ear-lugs, *j*², *j*², to which the ends of links, *m*, are pivotally connected. These links are at their other ends connected to the jaw segments.

By screwing the nut up, or down, on the post, *c*, the segments are swung relatively to each other to vary the general course of the curvature of the jaw as a whole. In Fig. 6 the jaw, C, is shown as constituted by a rigid jaw of a proper curvature.

The jaw, C, has its bearing side covered with chamois skin, or like soft material, indicated at *i*, to protect the case against any injury coming from metallic contact there-against by the jaw, C. This jaw, C, is furthermore in its concave side longitudinally and centrally grooved, as seen at *k*, to accommodate the circumferential beads with which watch-case centers are often provided.

The improved device is used in this manner: After the watch-case spring has been set within the inner wall of the watch-case, the pliers are brought to hold the spring firmly and immovably in place with the screw hole thereof exactly in register with the screw hole of the case, while the attaching screw is put in, the curved jaw lying against the exterior of the watch-case center while the finger, *a*, bears against the spring, clamping the latter in its properly placed position against the inner wall of the case.

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

1. A watch-case-spring pliers having one arm provided with a curved jaw and the other with the narrow jaw or finger, said jaw being composed of articulated members pivotally mounted and means for changing and hold-

ing in their changed positions the adjustable members of the said curved jaw, substantially as and for the purpose set forth.

2. In a watch-case-spring pliers, the combination with the arm having the narrow jaw, or finger, *a*, of the arm, *d*, having pivoted thereupon the two curved segments which constitute the curved jaw and having the screw-threaded post, *c*, the nut, *h*, screw-

threading thereon and carrying bodily and non-rotatably the sleeve, *j*, and the links, *m*, *m* connected, pivotally, to said collar, and to said segments, substantially as described.

EDWARD R. KANT.

Witnesses:

C. REESE EABY,
THEO. RUST.