

J. S. BIRCH.

WATCH-KEY

No. 177,677.

Patented May 23, 1876.

Fig. 1

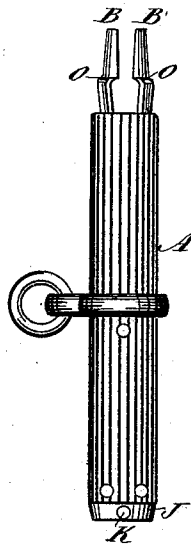


Fig. 2

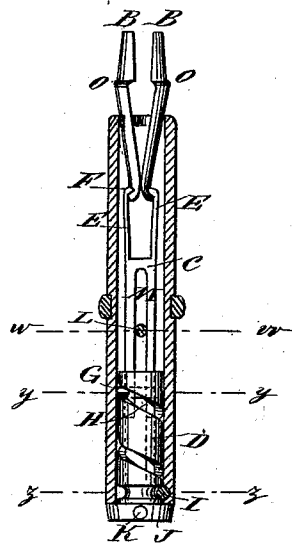


Fig. 3

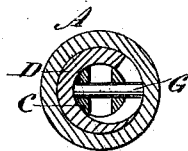


Fig. 4

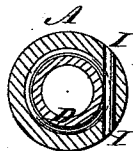


Fig. 5

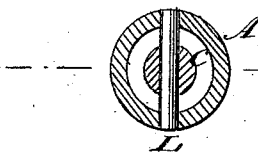


Fig. 6

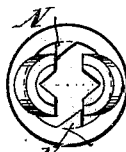
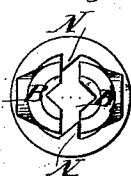


Fig. 7



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JOHN S. BIRCH, OF NEW YORK, N. Y.

IMPROVEMENT IN WATCH-KEYS.

Specification forming part of Letters Patent No. **177,677**, dated May 23, 1876; application filed April 4, 1876.

To all whom it may concern :

Be it known that I, JOHN S. BIRCH, of the city, county, and State of New York, have invented a new and Improved Watch-Key, of which the following is a specification :

The essential feature of this improved watch-key is a contrivance by which adjustable cone-shaped jaws, for fitting parts of different sizes, are made to open by being thrust out of the end of a tubular case by a spirally-grooved revolving tube, and are closed on the post to hold it for turning by a gentle endwise pressure on the case; another feature of the invention is a friction contrivance to prevent the torsional action of the case on the cone-shaped jaws from working them loose on the post, all as hereinafter described.

Figure 1 is a side elevation of the improved key. Fig. 2 is a longitudinal sectional elevation on line *x x* of Figs. 5 and 6. Fig. 3 is a section on line *y y*, Fig. 2. Fig. 4 is a section on line *z z*. Fig. 5 is a section on line *w w*, and Figs. 6 and 7 end elevations.

A is the case; B, the jaws; C, a rod; and D, a spirally-grooved tube for thrusting out and holding the jaws. The rod connects with the jaws at their inner ends by hook-headed springs E, the hooks of which engage the jaws by notches in the latter at F. The rod slides in the tube, and couples with it by the pin G fitted in it, and projecting into the spiral slot H of the tube. The tube is held in its position in the case by the pin I, which allows it to turn freely, but prevents it from moving endwise. A head, J, of the tube extends out of the top of the case, and has a little stud-pin, K, by which to turn it a half-turn, or so to extend the jaws. L is a pin, fitted through the slot M of the rod, and fastened at each end, in the case, to bind the rod by the resistance of the post of the watch on the jaws, when turning the key, to create friction, and prevent the case from working upon the cone-shaped jaws, and allowing them to open by the action of the cone-shaped jaws on the mouth or lower end of the case when winding the watch. The studs N, in the mouth of the case, prevent the jaws from turning in the case and communicate the power to wind the watch; and the jaws may also be made with three or more plain sides and angular corners, with a corresponding-shaped mouth of the case, and in connection with these studs, as in Fig. 7, or without them for turning the jaws by the case. The springs E are

so adjusted and contrived, as to their power, that they merely open the jaws when they are thrust out of the case, so as to take the post of the watch between them; but they do not offer any material resistance to the closing of the jaws on the post by pressing the case lightly down on the cone-jaws, and thus do not endanger the watch movement as it would be if much pressure was required. The pitch of the spiral groove H of the tube D is sufficiently acute to allow the tube to turn back readily, and thus not obstruct the closing of the jaws when the key is pressed down on the post of the watch.

It will be noticed that by this arrangement of the jaws for opening and closing them they remain partly or wholly open, as they may be set by the spiral tube, and do not have to be held in position against the pressure of a powerful spring, as in other cone-jaw keys, which enables the key to be used with greater nicety and accuracy in setting the watch exactly, because the jaws will hold so lightly to the post that it will not be moved in taking off the jaws, as it is liable to be when the post is powerfully nipped between the jaws by a spring, or a nut or sleeve.

It will also be seen that the jaws are made to fit on and hold the post of any size simply by gentle pressure of the key against the watch after the key has been open.

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

1. The spirally-grooved tube D, combined with the case A and the jaws B of a watch-key to extend and open the jaws, substantially in the manner described.

2. The jaws B and the case A of a watch-key, combined and arranged to close the jaws on the post by pressing the case down with the finger on the cone-jaws when resting on the post, substantially as specified.

3. The rod C and hook-headed spring E, combined with the jaws B, substantially as specified.

4. The friction-pin L, combined with the slotted rod C, cone-jaws B, and case A, substantially as specified.

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Witnesses:

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