

(No Model.)

R. H. FRANKLIN.
WATCH KEY.

No. 414,804.

Patented Nov. 12, 1889.

Fig. 1.

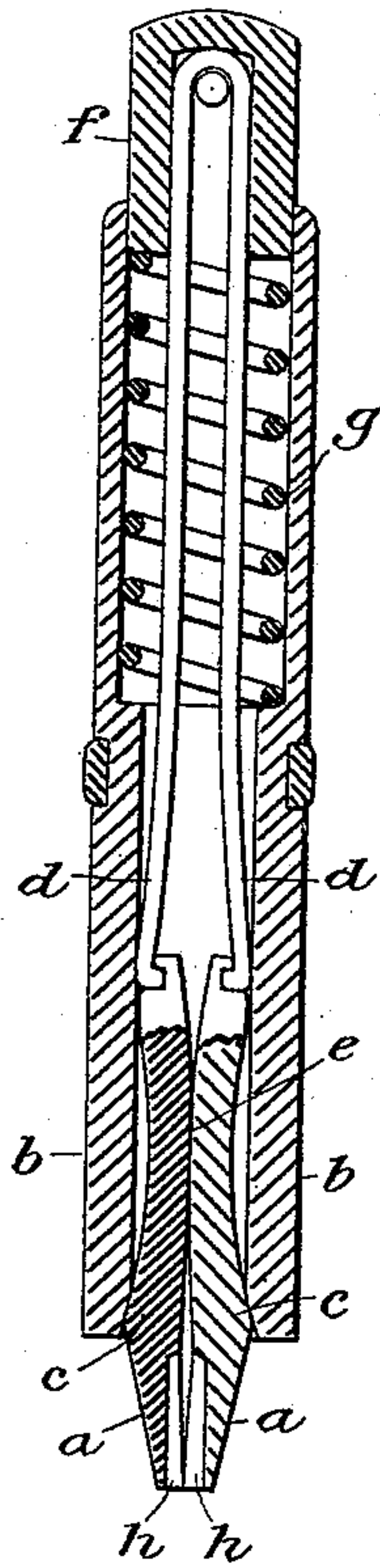


Fig. 3.

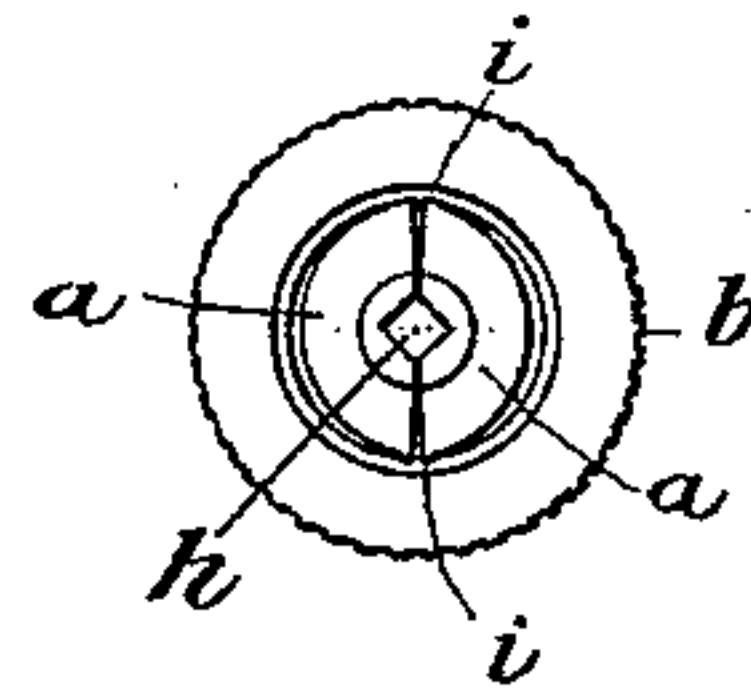


Fig. 2.

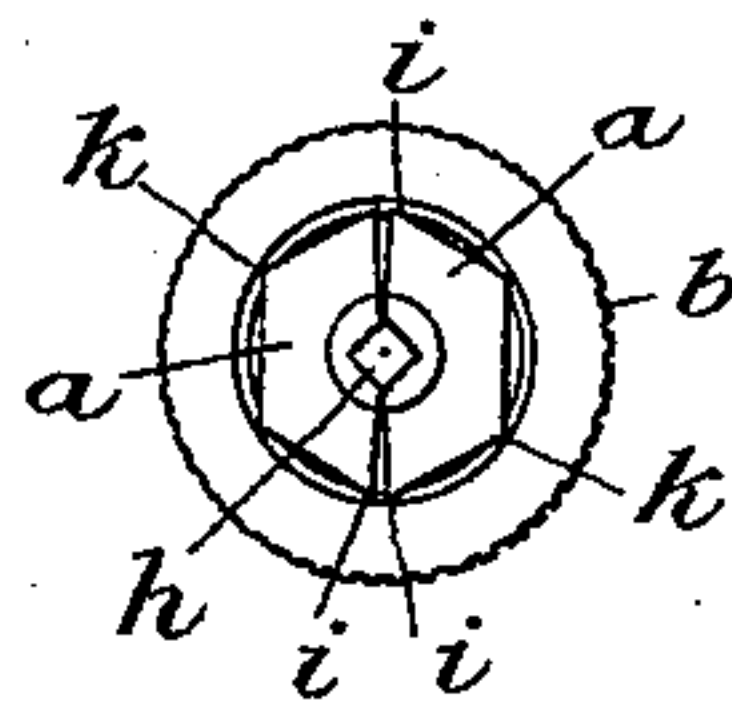
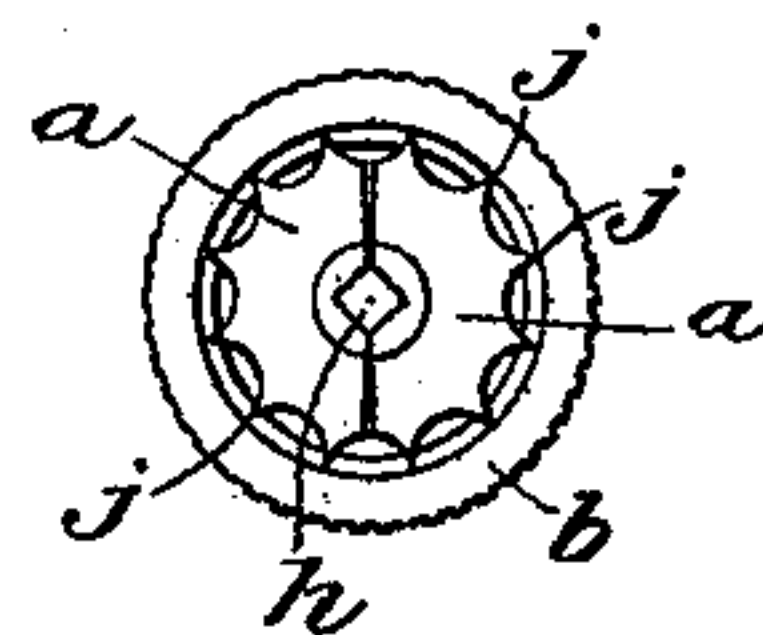


Fig. 4.



WITNESSES:

E. B. Kelton
Chas. Morgan

INVENTOR:

Rhodes H. Franklin

BY

A. P. Thayer

his Attorney

UNITED STATES PATENT OFFICE.

RHODOLPH H. FRANKLIN, OF BROOKLYN, NEW YORK, ASSIGNOR TO CHAS. C. CUMMINGS, OF SAME PLACE.

WATCH-KEY.

SPECIFICATION forming part of Letters Patent No. 414,804, dated November 12, 1889.

Application filed January 24, 1889. Serial No. 297,393. (No model.)

To all whom it may concern:

Be it known that I, RHODOLPH H. FRANKLIN, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Adjustable Watch-Keys; 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.

My invention relates to the kind of adjustable watch-keys in which a pair of opening and closing jaws are made to grip winding-posts of different sizes by the effect of the longitudinal thrust of a spring on them and the tubular case containing them and the spring; and it consists of an improved contrivance whereby the same thrust of the spring is utilized to effect such positive grip in the contact of the jaws with the interior surface of a plain round tube as will insure the turning of the jaws with sufficient power to wind any watch without any other provision therefor, and so as to avoid the expense of such devices as are now employed to effect the turning of the jaws by the tube, and also to enable the jaws to be made smaller in diameter of the thicker parts and therefore slimmer thereat than can be made when a pin is inserted between them and through the tube, as they are commonly made for turning the jaws, so that the jaws are better adapted for reaching the smaller posts of delicate watches through the correspondingly small holes of the back plates of the watches, all as hereinafter fully described, reference being made to the accompanying drawings, in which—

Figure 1 is a sectional elevation of a watch-key of the kind which is the subject of my invention and constructed in accordance therewith. Figs. 2, 3, and 4 are end views of the same as seen looking at the jaws, and illustrating my invention, all the views being on a scale much larger than full size.

These keys consist, essentially, of the two jaws *a*, arranged in the tube *b*, to project somewhat from one end of said tube and to slide out and in to some extent for opening and closing by the action of the taper shape

at *c* on the mouth of the tube, and of the loop-spring *d*, pressing the jaws together above the convex parts at *e*, said loop-spring also connecting the jaws with the push-bit *f*, sliding in the upper end of tube *b* and having a coiled spring *g* under it, which is compressed when the push-bit is forced down for the opening of the jaws, and by its recoil, when the pressure is removed from the push-bit, forces the jaws up again into the tube for closing them and gripping the posts of the watch. Below the taper *c* the jaws are reversely tapered, so as to form a slender cone shape, enabling them to be inserted through the hole in the back plate of the watch through which the post is reached, and they are grooved at *h* in their gripping-faces to form the socket for gripping the post. It will be seen that when the jaws are pressed down and further projected from the end of the case, so that parts *c* tapering upward are somewhat relieved of the limits of the mouth of the tube, the loop-spring *d*, which is adjusted to press the upper ends of the jaws together, will thereby open the lower ends, and when the coiled spring *g* forces the jaws upward and draws the taper *c* into the end of the tube the jaws are closed on and grip and hold the post for turning it by turning the key with the fingers. As these keys have been heretofore made it has been found necessary to fit a pin through the case and between the jaws or to provide some equivalent means for preventing the tube from slipping on the jaws when turning the key—such as studs of the case projecting slightly into the division-space between the jaws—or the jaws made with one or more flat sides and the tube with corresponding flat shapes in the mouth; but these devices are all expensive and objectionable, especially the flat shapes in the mouth of the tube, and to be avoided, if possible, as they amount to a considerable percentage of the expense of the key.

I have found that by constructing the jaws in a key in which the case has a plain round mouth of the simplest form with acute angles, as *i*, at their edges, or *j* thereat, and at intervals around the back from edge to edge, or with the obtuse angles *k*, together with

angles i , so that the edges of these angles have contact with the surface of the mouth of the tube, and, being pressed thereon by the effect of the coiled spring g , will bite with
5 such positive hold as insures the proper action of the jaws without any special holding device. If desired, the surface of the mouth of the tube may be fluted slightly; but it is not essential. These shapes of the jaws are
10 made without more cost than the ordinary shapes, and thus the expense of the holding devices heretofore provided is wholly avoided, and the jaws can be made with less space between them than when the pin or the studs of
15 the case projecting into the dividing-space between are used, which enables the jaws to be made smaller in diameter at the thickest part and still have sufficient material for strength, and this enables the cone to be slimmer, as
20 before stated.

What I claim, and desire to secure by Letters Patent, is—

1. In a watch-key of the character herein described, the combination of the tube having the round mouth, the jaws having acute 25 angles in contact with the surface of the mouth, and the spring pressing said angles on the surface of the mouth, substantially as described.

2. In a watch-key of the character described, 30 the combination of the tube having the round mouth, the jaws having acute and also obtuse angles in contact with the surface of the mouth, and the spring pressing said angles on the surface of the mouth, substantially 35 as described.

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

RHODOLPH H. FRANKLIN.

Witnesses:

W. J. MORGAN,
W. B. EARLL.