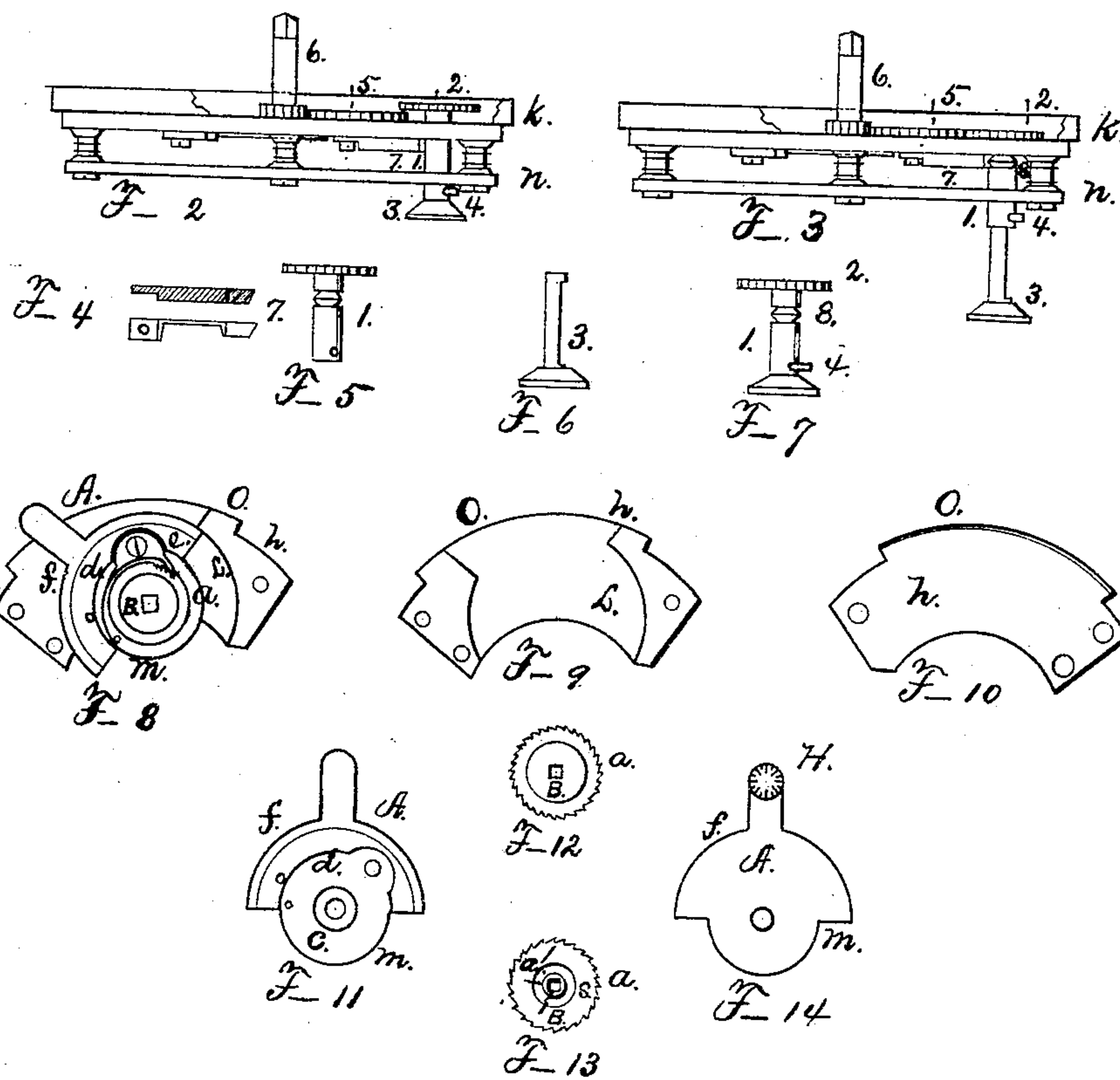
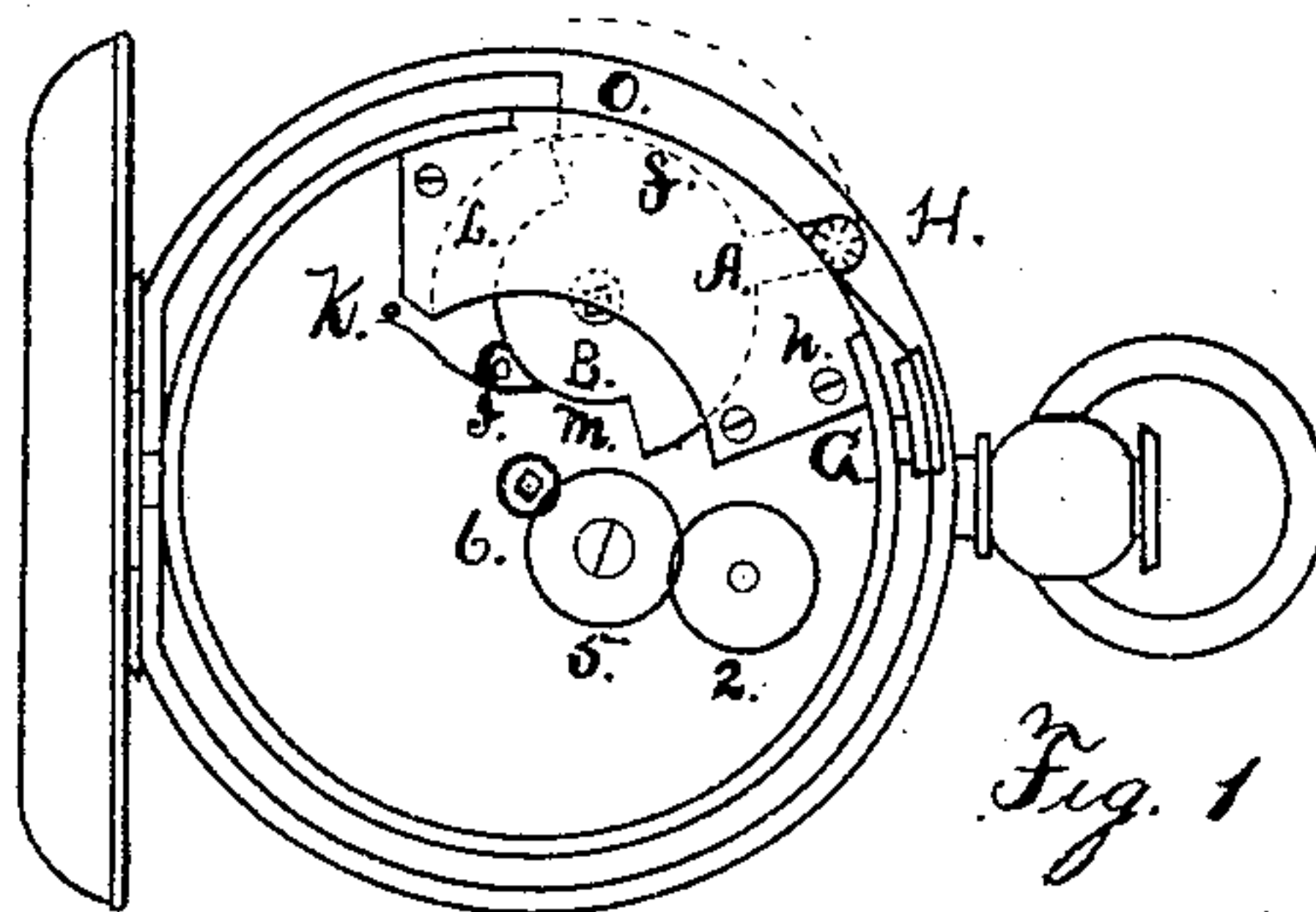


H. ABBOTT.

STEM WINDING AND SETTING ATTACHMENT FOR WATCHES.

No. 180,739.

Patented Aug. 8, 1876.



Witnesses
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UNITED STATES PATENT OFFICE.

HENRY ABBOTT, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN STEM WINDING AND SETTING ATTACHMENTS FOR WATCHES.

Specification forming part of Letters Patent No. **180,739**, dated August 8, 1876; application filed June 6, 1876.

To all whom it may concern:

Be it known that I, HENRY ABBOTT, of Newark, in the county of Essex and State of New Jersey, have invented a certain Improvement in Watches, of which the following is a specification:

My invention consists in the appliances for winding a watch with a lever, and for setting the hands.

Figure 1 is a plan view from the dial side of a watch with the dial removed. Figs. 2 and 3 are cross-sections with the dial side up, to show the application of the hand-setting devices. Fig. 2 shows the devices not in action. Fig. 3 shows the same in action. Figs. 4, 5, 6, 7 are detailed views of the elements composing the hand-setting device. Figs. 8, 9, 10, 11, 12, 13, 14, are detailed views of the works composing the winding apparatus.

The first part of my improvement relates to the mode of winding, which is done by means of the lever A, hung to the barrel-arbor B. On the under side of this lever (see Fig. 11) is an annular flange, *c*, turning in an annular groove, *s*, in the ratchet *a*, and outside of this flange, on the same side of the lever, is a recess, *d*, into which is placed the ratchet *a*, used for winding the watch, operated, when the lever moves forward, by the click *e*, attached to the same side of the lever, and inside of the recess above named. The square end of the arbor B passes through the ratchet *a*, and the hub *a'* (see Fig. 13) of the ratchet passes through the center of the lever A, on which it turns. When the lever reacts it turns loose, by means of this connection with the ratchet, back to the point of starting, for another action in winding the click *e*, retaining the arbor in position when the watch is being wound, or is wound up.

This arrangement of the lever and ratchet, uniting them by means of the flange, groove, recess, &c., with the arbor, is especially important in practically and conveniently arranging the parts, and in providing that this winding apparatus may be attached under the dial or under the back of a watch.

The lever A extends out beyond the edge of the movement G, and terminates with a thumb-knob, H, by which it is operated in winding, and when at rest this knob is wholly within

the case. The lever is also constructed with a semicircle, *f*, and lying inside of the movement, and having a portion of it extending on each side of the lever or arm; and by the arrangement of the plate of which the lever is made fitting closely between the bridge *h* and the plate *k*, and this semicircle extending out nearly to the edge of the case, all dust is kept from passing into the watch in the process of winding, for the sections of the semicircle fill all the space on either side of the arm in its movements. The lever has also a semicircle, *m*, at its inner end, to cover the click *e*, and keep it in position. The bridge *h* has a periphery, *O*, corresponding to the circumference of plate *k*, and, as shown above, so placed as to completely protect the aperture through which the arm A moves. This bridge has a recess, *L*, on the under side, to receive the lever to work in it, and economize space. In case a solid plate, *k*, is used, the recess may be in the upper side of said plate instead of in the bridge, for the same purpose, and the winding apparatus be covered with a flat bridge.

My improvement relates to a hand-setting apparatus. With this lever-winding device there is left no way of setting the hands but by opening the case; and I have a simple setting arrangement operated from the back of the watch, which is reached by opening the outer case. It consists in the hollow tube 1 passing loosely through the plates *k* and *n*, and having, above the plate *k*, a small gear-wheel, 2, secured to the end of this tube. Into this tube is placed an arbor, 3, flattened on one side, and held by the pin 4 passing through the tube 1 and across the flat side of the arbor 3, which slides in the tube the length of the flattened space, and by the pin is prevented from turning in the tube. When in action the arbor, by the knob, is drawn out in the tube, as seen in Fig. 3, so that there will be sufficient room for thumb and finger to turn the arbor in regulating the hands. In this last position the wheel 2 is drawn into gear with wheel 5, which is geared to the cannon-pinion 6, which carries the hands; or the wheel 2 may be geared directly with the cannon-pinion. A spring, 7, made with a flattened side, and the edge resting on the plate *k*, to which it is

screwed, and having a beveled edge of the end striking against the tube 1, into one of two notches, 8, holds the tube and gear in action, as seen in Fig. 2, or out of action, as in Fig. 3. Thus, if the arbor 3 be pushed in, it presses the wheel 2 out of gear, and the watch runs without carrying these wheels; and in that position the beveled part of the spring catches into the lower notch 8. But, to turn the hands, draw out the arbor, and the wheel 2 moves into gear, and the spring then catches in the upper notch 8. The closing of the watch-case also pushes in the arbor, and pushes the wheel out of gear, as above shown.

The advantages of my improvement over the stem-winding watches, of which it is designed to take the place, are, first, greater simplicity, for only about one-half the number of pieces are used; second, they may be used in the same case as a key-winding movement; third, these devices may be made very much stronger than the works in a stem-winder; fourth, with but little change they may be applied to watches already finished; and, fifth, they can be made to cost only about one-third the price of the stem-winders.

What I claim as my improvement in watches, and desire to secure by Letters Patent, is—

1. The lever A, hung to the barrel-arbor B, and having the annular flange *c* and recess *d*,

in combination with the ratchet *a* and click *e*, substantially as and for the purposes specified.

2. The ratchet *a*, having the annular groove *s*, made to turn on the annular flange *c* of the lever A and its hub *a'*, in combination with arbor B and click *e*, substantially as and for the purposes specified.

3. The lever A, having the semicircles *f* and *M*, in combination with the click *I* and bridge *h*, having its periphery *O* substantially as set forth, and for the purposes specified.

4. The bridge *h*, with its periphery *O* and recess *L*, in combination with the lever A and plate *k*, substantially as and for the purposes set forth.

5. The tube 1, having the notches 8 and wheel 2, in combination with the cannon-pinion 6, arbor 3, and plates *k* and *n*, and spring 7, substantially as and for the purposes set forth.

6. The arbor 3, with its knob and flattened side, in combination with the tube 1 and pin 4, substantially as and for the purposes set forth.

7. The spring 7, secured to the plate *k*, with its flattened side and beveled end, in combination with the tube 1, substantially as and for the purpose specified.

HENRY ABBOTT.

Witnesses:

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