

G. HAVELL.
WATCH-KEYS.

No. 194,904.

Patented Sept. 4, 1877.

Fig. 1.

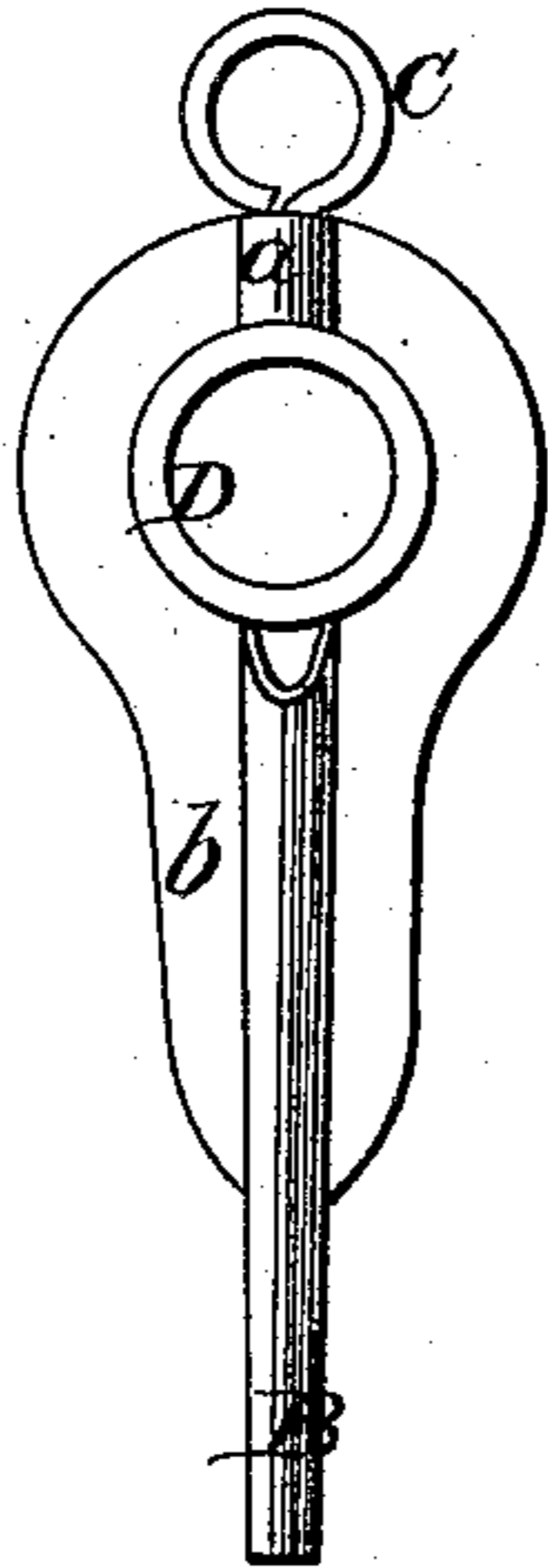


Fig. 3.

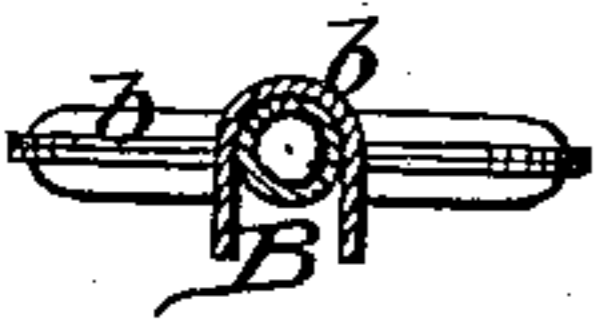


Fig. 4.

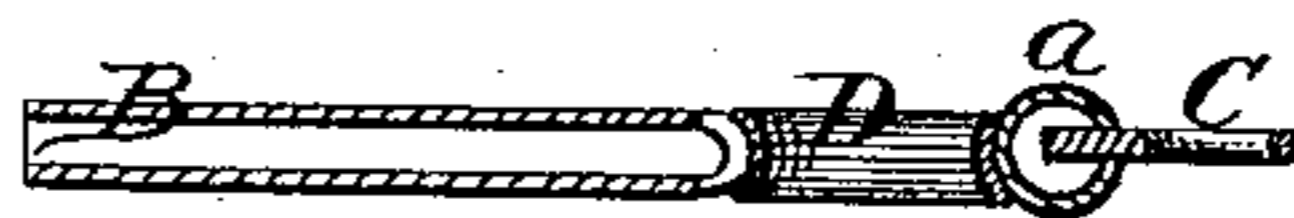
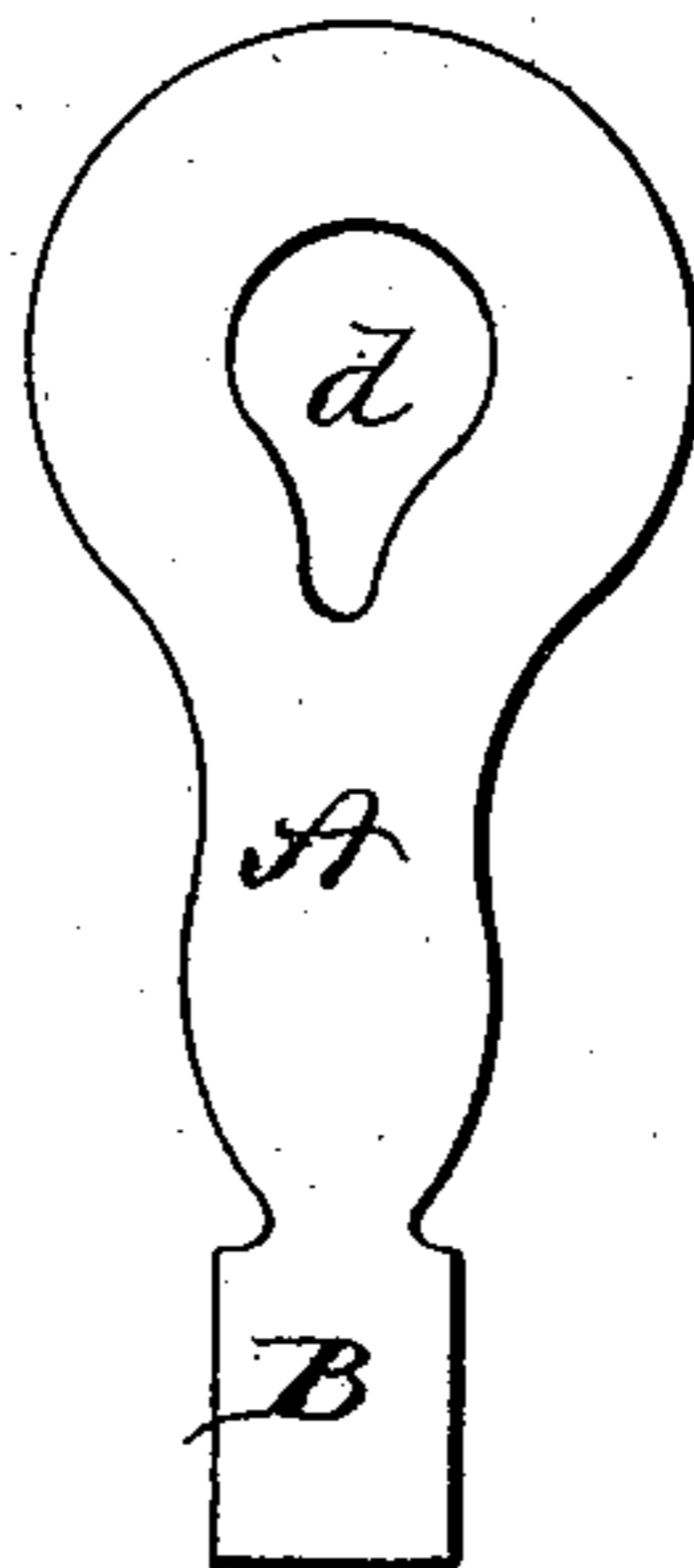
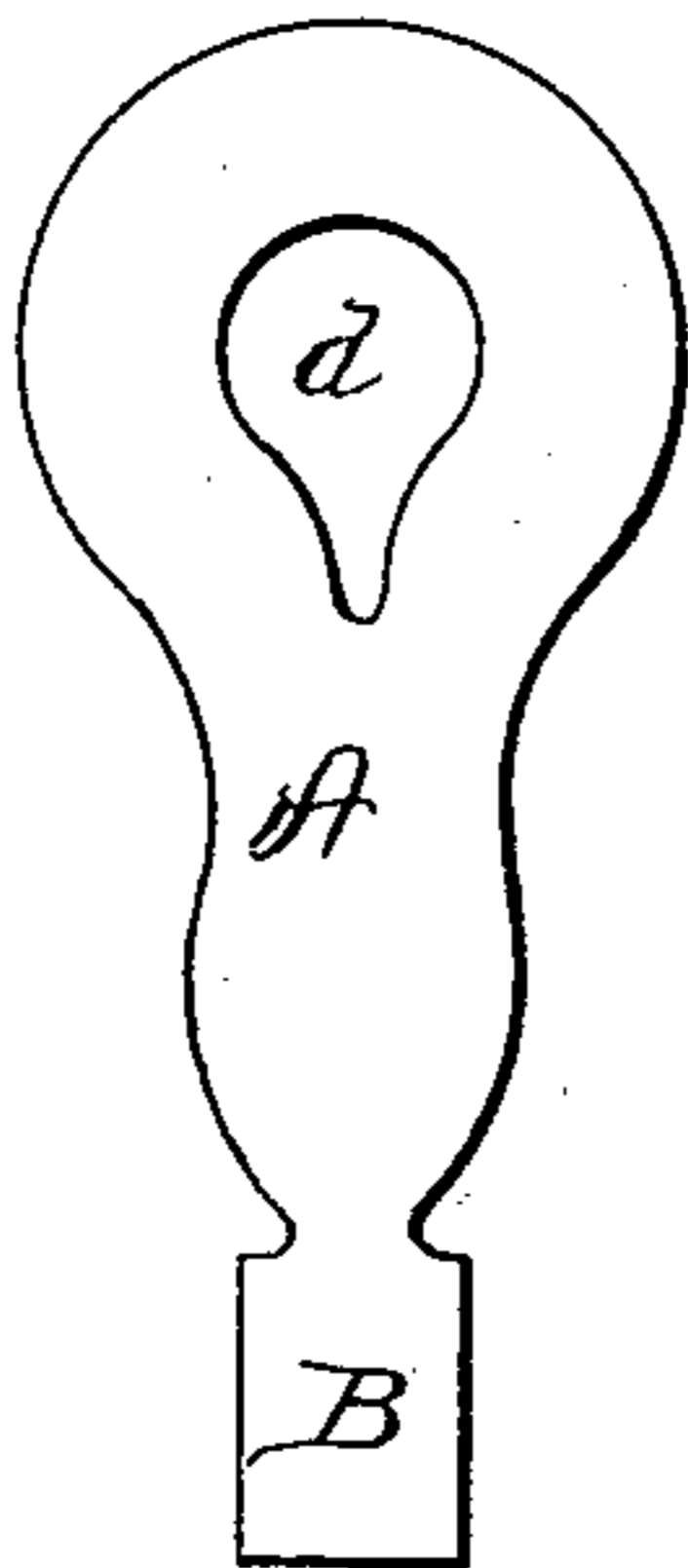


Fig. 2.



WITNESSES
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UNITED STATES PATENT OFFICE.

GEORGE HAVELL, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN WATCH-KEYS.

Specification forming part of Letters Patent No. **194,904**, dated September 4, 1877; application filed August 9, 1877.

To all whom it may concern:

Be it known that I, GEORGE HAVELL, of Newark, in the county of Essex, and in the State of New Jersey, have invented certain new and useful Improvements in Manufacture of Watch-Keys; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention relates to the construction of watch-keys, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a side view of the completed watch-key. Fig. 2 shows the blanks from which the key is made. Figs. 3 and 4 are detailed sections of the key.

The main feature of my invention consists in making the tube or barrel of the key of two or more thicknesses of sheet-steel or other sheet metal.

The blanks of which the key is formed are shown in Fig. 2, each blank forming a handle part, A, with a plate, B, at the lower end. These blanks may be struck up or otherwise formed into the required shape, and, by means of dies or otherwise, at the top of each blank is formed a semicircular or semi-tubular corrugation, *a*. Below the center opening *d* in the blank is formed another semi-tubular corrugation, *b*, on a line with the corrugation *a* and with the center of the plate B. The two plates B B are folded together around each other, placed on a suitable mandrel, and then turned in a lathe, or by other suitable machinery made round on

the outside, to correspond with the tube formed by the two corrugations *b b* when the two blanks are placed together. The end of the wire forming the ring C is passed through the tube formed by the two corrugations *a a*, and clinched or riveted in the hole *d*. The two blanks are then united by means of a rivet, D, through the holes *d d* in the blanks, or by any other suitable means.

By this method of construction I secure a perfectly square and straight hole at a much less cost than by any other method of making a hardened and tempered steel watch-key.

In the construction of the tube of the key I may use two or more plates, as desired.

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

1. The tube of a watch-key made of two or more thicknesses of sheet metal, struck up and folded over each other, substantially as and for the purposes herein set forth.

2. A watch-key made of two or more pieces of sheet metal, struck up or otherwise formed into the required shape, folded, and united, substantially as and for the purposes herein set forth.

3. A watch-key formed of the two blanks A A, each having corrugations *a b*, hole *d*, and plate B, the plates B B forming the tube of the watch-key, the ring C held in the corrugations *a*, and the blanks fastened together by an eyelet or other means, substantially as herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 8th day of August, 1877.

GEORGE HAVELL.

Witnesses:

H. A. KINGSLEY,
JOHN OTTO.