

(No Model.)

G. L. HOLT.

WATCH KEY OR HOLDING TOOL.

No. 278,550.

Patented May 29, 1883.

Fig. 1.

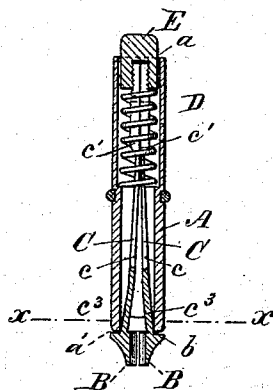
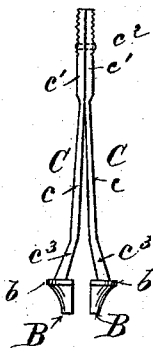


Fig. 2.



Fig. 3.



Witnesses:

Henry Fichtling

and Vermilya

Inventor:

Gardner L. Holt

by D. F. H. H.
his atty

UNITED STATES PATENT OFFICE.

GARDNER L. HOLT, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR TO
WILLIAM H. ROBERTSON, OF BROOKLYN, NEW YORK.

WATCH-KEY OR HOLDING-TOOL.

SPECIFICATION forming part of Letters Patent No. 278,550, dated May 29, 1883.

Application filed February 9, 1883. (No model.)

To all whom it may concern:

Be it known that I, GARDNER L. HOLT, of Springfield, Hampden county, Massachusetts, have invented an Improved Self-Adjusting Watch-Key or Holding-Tool, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention consists in the combination, in a watch-key or tool for grasping and holding small objects, of the devices hereinafter particularly described and co-operating as and for the purpose hereinafter specified.

Figure 1 is a longitudinal central section of a watch-key embodying my improvement. Fig. 2 is a cross-section of the key on the line $x x$, Fig. 1, and Fig. 3 is an elevation in detail of my improved gripping-jaws and their spring-shanks.

A is the tube or barrel of the instrument, in which the operating parts are lodged. The lower end of the tube is open, as shown at a , while the upper or opposite end is capped or closed, as seen at a' , and in said cap or end piece is formed the angular slot a^2 . This slot may be four-sided and rectangular or poly-sided and correspondingly angular. I prefer to make it four-sided and rectangular, as shown.

B B are the gripping-jaws or forceps, and they are mounted or formed on the ends of the shanks C C. These shanks are in the form of leaf-springs, as at c , with the ends c' adapted to be placed flatwise together and secured by a rivet, c^2 . Upon the extremity of these united ends c' is cut a screw-thread, as shown in Fig. 3. Immediately below the jaws B B the outer sides or faces of the shank ends are inclined inwardly, as seen at c^3 , and this portion c^3 of each of the shank ends is made to conform and fit into the angular slot a^2 in the end of the tube A—that is to say, when the shanks of the jaws are passed into the tube, as shown in Fig. 1, the outer faces of the inclined portions c^3 of the spring-shanks will coincide with and conform to the adjacent walls of the slot a^2 . A flange, b , extends around the shank ends, just below the base of the gripping-jaws B. The jaws and spring-shanks being lodged in

the tube as described, a coil-spring, D, is introduced into the lower section of the tube around the united ends of the shanks, and having bearing upon a shoulder, d , in the tube at one end, and at the other against the face of a recessed nut or cap, E, which is passed into the open end of the tube and screwed down out to the ends of the shanks, and has its heel projecting beyond the end of the tube. When the heel of the nut or cap E is pressed upon, as by the thumb, the jaws B are projected from the opposite end of the tube, and they are opened or spread by the action of the spring-shanks; the inclined portions c^3 of each shank playing in the angular slot a^2 , and thus allowing the jaws to separate. The jaws may thus be employed to grip objects of varying sizes, such as the arbors of watch-movements, and when introduced upon such arbor or other object it is evident that by withdrawing the pressure from the cap E the jaws will be re-
ceded into the tube by the action of the coil-spring, and being brought more or less together by the action of the inclined ends c^3 of the shanks working in slots a^2 , said jaws will be closed down upon the arbor or other object. When the instrument is thus gripped upon the arbor and is desired to be employed to rotate the arbor, it is evident that when thus used the strain will be wholly borne by the angular portion of the shanks, as at c^3 , resting and fitting in the angular slot a^2 , and the liability of the jaws to be spread in the operation of rotation be thus obviated.

Hitherto in instruments of this description a pin has been fixed transversely of the tube or barrel and intermediate the jaws, which operated to spread the jaws when they were forced outward of the tube, and which received the strain of the operation of rotating the arbor gripped by the jaws. It is evident that the angular slot a^2 and the spring-shanks C, with their angular and spreading ends c^3 , are an improvement upon means hitherto employed, and that the instrument I have shown and described is a most strong and effective implement.

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

In an adjustable watch-key or tool-holder in which the gripping-jaws are carried by shanks lodged in a barrel or tube, and are distended by being protruded from and closed 5 by being retreated within the tube, the combination, with the tube A, having end a' , with its angular slot a^2 , of the jaws B, having flange b , and carried by the shanks C, having spring portions c , united end c' , and inclined and angular portions c^3 , together with the spring D and cap E, all constructed and arranged to operate substantially as and for the purpose specified.

GARDNER L. HOLT.

Witnesses:

ALLEN WEBSTER,
GEO. S. BURT.