

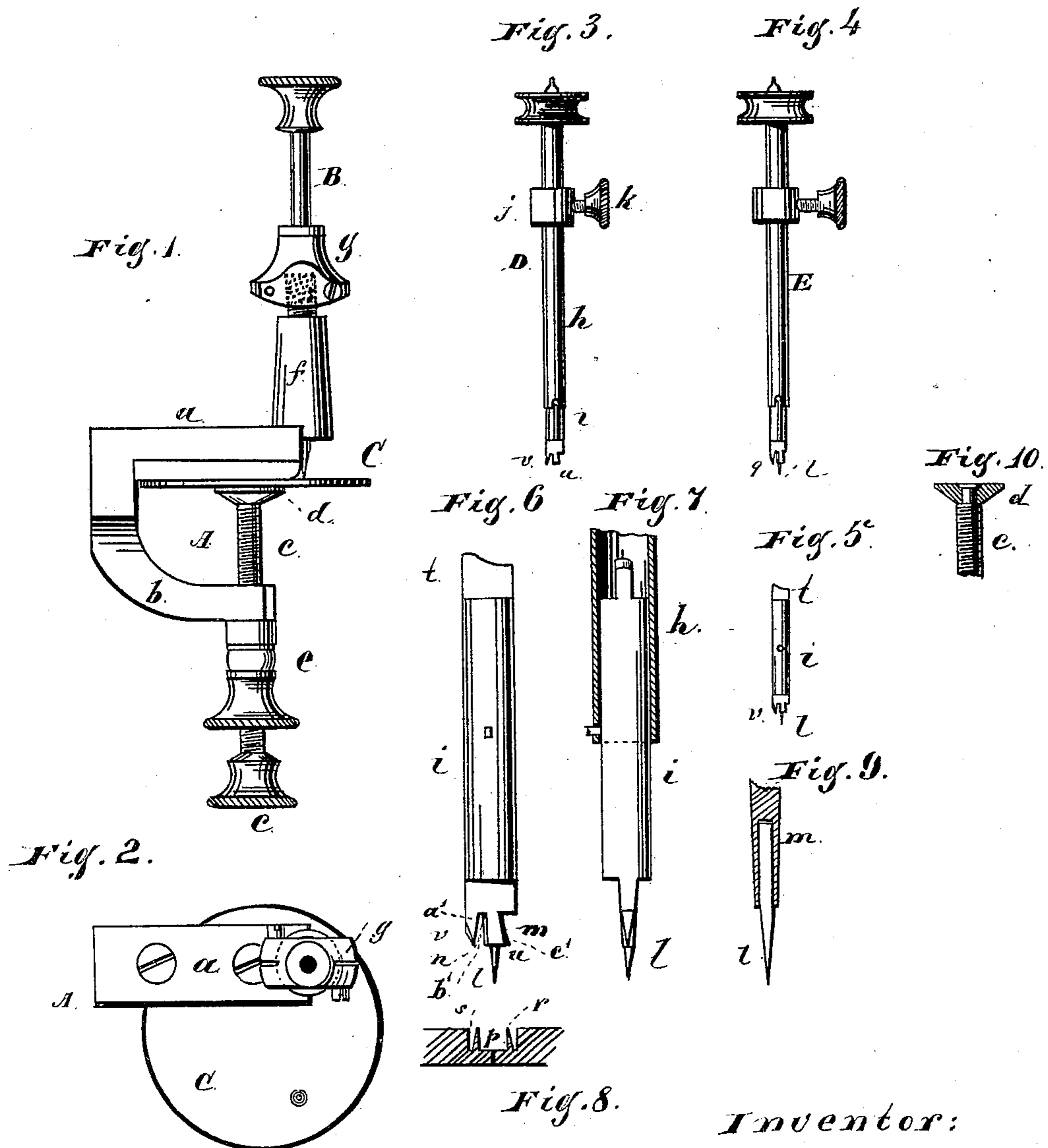
(No Model.)

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WATCH MAKER'S JEWEL SETTING TOOL.

No. 246,587.

Patented Sept. 6, 1881.



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WATCH-MAKER'S JEWEL-SETTING TOOL.

SPECIFICATION forming part of Letters Patent No. 246,587, dated September 6, 1881.

Application filed May 27, 1881. (No model.)

To all whom it may concern:

Be it known that I, HANS ANDERSON, residing at Chicago, in the county of Cook and State of Illinois, and a citizen of the United States, have invented new and useful Improvements in Watch-Makers' Jewel-Setting Tools, of which the following is a full description, reference being had to the accompanying drawings, in which—

10 Figure 1 is a side elevation; Fig. 2, a top view; Fig. 3, an elevation of the tool which prepares the hole for the jewel. Fig. 4 is a modification of Fig. 3. Fig. 5 shows the detachable part of the tool shown in Fig. 4; 15 Fig. 6, an enlarged view of Fig. 5; Fig. 7, an edge view of the device shown in Fig. 6, the same being in its socket; Fig. 8, an enlarged detail, showing, in section, a piece of a plate after it has been prepared to receive a jewel. 20 Fig. 9 is an enlarged detail, showing the point *l* detachable. Fig. 10 is a detail showing the clamping-head *d* swiveled.

The objects of my invention are to provide a screw-clamp which holds the plate which receives the jewel which will not mar the plate, 25 to provide an improved cutting-tool, and to provide a combined cutting and setting tool, all substantially as hereinafter described.

In the drawings, A represents a clamping device to receive and hold the plate which is to receive the jewel. It consists of a bar or 30 plate, *a*, from which a curved arm, *b*, extends, as shown in Fig. 1. In the end of *b* is a screw-threaded hole which receives the screw *c*, which has a small flat head, *d*, and a lock-nut, *e*. The head *d* is loose on *c*. 35

f is a socket permanently connected with the part *a*. The upper end of this socket is screw-threaded upon the outside.

40 *g* is a feeder upon the upper end of the socket *f*. It is screw-threaded on the inside, and the lower portion is divided, and by means of screws it can be tightened so as not to rotate too easily on *f*.

45 B is a centering-tool fitting in the socket *f*, and is sharp-pointed at its lower end.

C is a plate in which a jewel is to be set. It is clamped and held in the device A.

50 D is a tool for cutting the hole for a jewel and for setting the jewel. As shown, it is made of two parts, *h* and *i*. *h* has a socket at its

lower end to receive the part *i*, and the upper end of this part *i* is formed like the upper end of the device shown in Figs. 5 and 7, being both curved and rounded. The lower end of *i* is designed to do the cutting necessary to 55 prepare the plate for the jewel, and the upper end is designed to set the jewel.

j is a sliding collar on *h*, which can be held in any given position by the set-screw *k*. 60

The tool E shown in Figs. 4, 5, 6, and 7 is the same as that shown in Fig. 3, except that in Figs. 4, 5, 6, 7 a centering-point, *l*, is shown upon the removable part *i*, which enables the operator to use the tool E with its point *l* in 65 place of the device B for centering the plate C.

In describing the cutting and setting tool I will refer to the enlarged Figs. 6 and 7. The lower end of this tool (shown in Figs. 3 to 7) is for cutting the jewel-hole. The cutting is 70 done by the two parts *m* and *a'*, (see Fig. 6,) between which two parts *m* and *a'* there is a space, *b'*. The lower edge, *u*, of the part *m* cuts the hole for the jewel, the inner edge, *n*, of the part *a'* cuts the outside of the wall *r*, 75 and the point *v* cuts the metal away, forming the space *s*, so that there is room for the bur-nishing-instrument to catch the upper end of the wall *r* and turn it over the jewel. It is im-portant to incline the inner edge, *n*, of the part 80 *a'*, in order to have the outside of the wall *r* inclined. If the outer edge, *c'*, of the part *m* were straight, the tool would be useless after it had been materially shortened by sharpening, because *n* would then cut away the top of 85 the wall *r*. I give to the edge *c'* of the part *m* an inclination equal to that of the inner edge, *n*, of the part *a'*, but in an opposite direction, so that if the tool be shortened by sharpening it can still be used, the hole which *m* cuts 90 growing smaller as the tool is shortened; but as the part *a'* will be shortened by sharpening as much as *m* the inner edge, *n*, of *a'* will still give the proper form to the outside of the wall *r* of such hole. 95

The work which this cutting-tool performs is illustrated in Fig. 8, *p* being the hole for the jewel, *r* being the wall of the hole for the jewel, thin at the top, and *s* being a space outside the wall *r*. The other end of *i* is for the pur- 100 pose of setting the jewel by turning over the upper edge of *r*. A pin on one side of the part

i engages with a notch in the lower end of the socket formed in the part *h*, for the purpose of holding the part *i* in said socket.

The operation is as follows: The center of the jewel-hole is first to be indicated upon the plate C by making a round indentation therein at the proper place. The plate is then placed loosely in the clamp A, and a sharp-pointed centering-tool, B, is placed in the socket *f*, and the point of B is made to enter the said indentation. Then the plate is to be clamped securely in that position in the clamp A, as shown in Fig. 1. The plate will now be properly centered, and the entire operation of cutting the hole for the jewel and setting the same therein can be performed, the plate being held securely in this position in the clamp. The centering-tool B is now to be removed and a small hole drilled through the plate by a suitable tool. Then the tool D or E is to be placed in the socket *f* and rotated in contact with the plate C in the usual manner, fitting the plate for the jewel, as shown in Fig. 8. The depth of the cutting can be regulated from time to time by means of the collar fixed at any desired point on *h* by the set-screw *k*, and by adjusting the feeder *g* upon the screw-threaded end of the socket *f*. Of course, when the collar *j* comes in contact with *g*, the cutting will cease, and if the jewel-hole is not deep enough *g* must be turned down a little and the cutting continued. When the plate is ready the jewel is to be placed in its seat *p*, and *i* is to be reversed in *h*, and the tool replaced in the socket *f*, the end *t* of *i* then being down and resting on the top of the wall *r*. Then by rotating the tool the upper edge of this wall *r* will be turned over the jewel, and at the same time will be burnished.

The point *l* on *i* in Figs. 4, 5, 6, 7 is to be used in place of the centering-tool B for centering the plate C. When a separate centering-tool, B, is used this point *l* may be omitted, as shown in Fig. 3.

By the use of my device a jewel can be accurately set by an unskilled mechanic. When

the plate has been once adjusted, which can easily be done, it will be held in place while the plate is fitted and jewel set. After the jewel has been set the back of the plate can be reamed out, first turning it over in the clamp.

By making the part *i* removable a single shank or holder is sufficient for any number of cutters of different sizes; otherwise it would be necessary to make a complete tool for each size of jewel to be set.

The point *l* should be made detachable, so that it can be removed when the tool is sharpened. This can be done by providing a hole in the lower end of the tool, in which to slip the point *l*, as shown in Fig. 9.

The head upon the top of the screw *c* is loosely riveted thereto, so that the head will not turn after it comes in contact with the plate C; but the screw *c* can still turn to clamp the plate in place. The object of this is to prevent the head *d* from marring the plate C.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. A jewel-tool provided with two cutting parts, *m* and *a'*, with a space, *b'*, between them, the outer edge, *c'*, of the part *m* and the inner edge, *n*, of the part *a'* being both inclined, but in opposite directions, substantially as and for the purposes specified.

2. A jewel-setting tool provided with two cutting parts, *m* and *a'*, in combination with a detachable centering-point, *l*, all substantially as and for the purposes specified.

3. A jewel-setting tool consisting of a shank, *h*, provided with a socket at one end, and the removable and reversible device *i*, having a cutter upon one end and a setting and burnishing device at the other end, such tool being adapted to be used in connection with the plate-holder A, substantially as and for the purpose specified.

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