(No Model.)

J. COOK.

WATCH MAKER'S TOOL.

No. 390,457. Patented Oct. 2, 1888.

Fig. 1

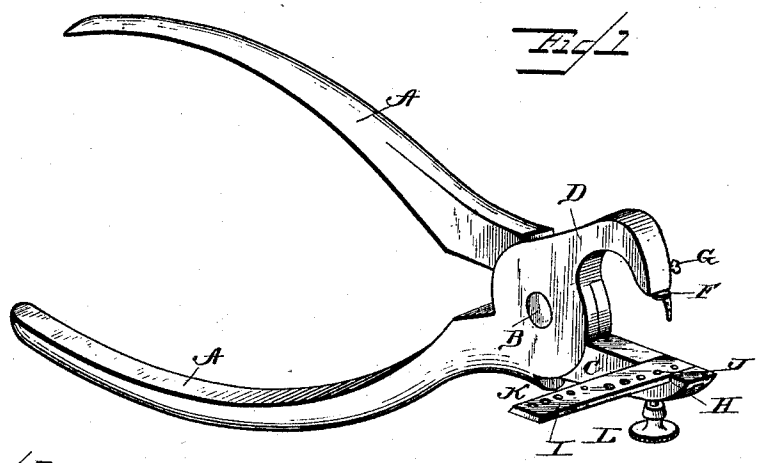


Fig. 2.

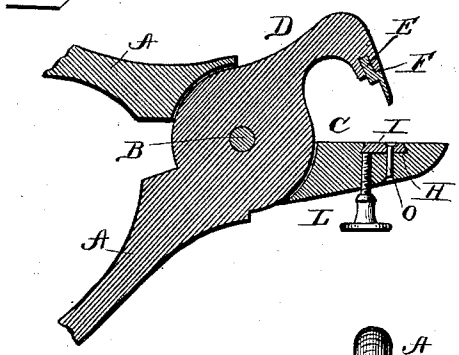


Fig. 3.

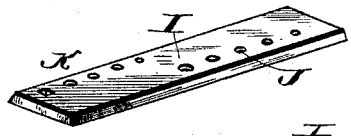


Fig. 3a



Fig. 4.

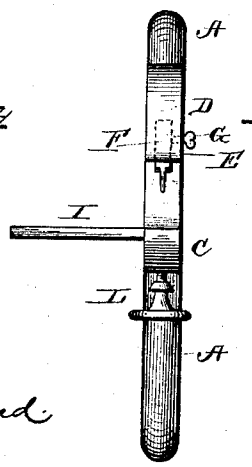


Fig. 5.

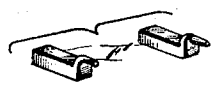


Fig. 6.



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UNITED STATES PATENT OFFICE.

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WATCH-MAKER'S TOOL.

SPECIFICATION forming part of Letters Patent No. 390,457, dated October 2, 1888.

Application filed November 21, 1887. Serial No. 255,793. (No model.)

To all whom it may concern:

Be it known that I, JAMES COOK, a citizen of the United States, and resident of Chattanooga, in the county of Hamilton and State of Tennessee, have invented certain new and useful Improvements in Watch-Makers' Tools; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my new and improved watch-maker's tool. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a detail view of the adjustable slide-plate. Fig. 3ª is a cross-sectional view, on an enlarged scale, of the plate I through one of the countersunk holes J. Fig. 4 is an end view of the tool. Fig. 5 is a detail view showing removable points of different sizes for removing the blocks from watch-cylinders after the pivots of the same have been broken, and Fig. 6 is a detail view of the form of point used for punching small apertures in thin metal.

The same letters of reference indicate corresponding parts in all the figures.

My invention consists in a new and improved tool for the use of watch-makers, which is designed to be used to remove the blocks from the cylinders of watches after the pivots of the same have become broken, and also for punching small apertures in thin metal and for extracting small rivets—as, for example, from the joint of breast-pins, &c.—and my invention will be hereinafter fully described and claimed.

Heretofore when the pivot on the block of the cylinder of a cylinder-watch has become broken, the only way in which the block could be removed was by means of a hammer and punch, and when removed in this way in nearly every case the cylinder was broken; and one important object of my invention is to overcome this objection by means of the tool hereinafter described and claimed, which will remove the block from the cylinder with a steady pressure, and by the use of which all possibility of breakage is avoided and done away with.

Referring to the several parts by letter, A A indicate the two legs of a pair of pliers, which are pivoted at B in the usual manner, C indicating what may be called the "lower jaw" of the pliers, and D indicating the upper jaw. These jaws may both be made straight, so as lie parallel to each other when closed; but in the accompanying drawings I have shown the upper jaw, D, curved, as shown. The shape and curvature of the jaws, however, can of course be modified and changed to suit the purchaser without departing in the least from the spirit of my invention.

In the free end of the inwardly-curved upper jaw, D, is drilled or otherwise formed a seat, E, as clearly shown in the sectional view, Fig. 2, of the drawings, which is adapted to receive the removable point F, which will be hereinafter described, the point being removably secured in this seat by means of a small set-screw, G.

The inner face or side of the lower jaw, C, has formed in it a transverse recess, H, the edges of which are inclined or beveled in, as shown, and in this recess fits and is adjusted a metal plate or slide, I, the longitudinal edges of which are beveled, as shown, to adapt them to fit in under the slanting edges of the recess H, by which arrangement the side plate is prevented from falling out of the recess, while it can be readily slid through the recess to adjust it. This slide-plate has two series of apertures, J and K, formed in it, the apertures J, which extend from its center to its left-hand end, and are graduated in size, as shown, being designed for use in removing the blocks from the cylinders of cylinder-watches, while the series K of apertures extend from the center of the plate to its other or right-hand end and increase in size toward their lower ends at the bottom of the plate. This graduated plate is secured at the point to which it may be adjusted in the recessed lower jaw by a set-screw, L.

A number of points, F, of different sizes are kept on hand, each point consisting of a shank or small block, M, which fits in the seat E in the free end of the upper jaw, D, and a fine round point, the points varying in size. When the pivot of a block of a cylinder-watch has become broken and is to be removed, the watch-maker selects a point of the required size, according to the size of the block to be

removed, and fits it in the seat E of the upper jaw, where it is secured by the set-screw G. The plate I is then moved in the recess of the lower jaw until the proper hole of the graduated series J registers exactly with the point F, and also with a discharge-hole, O, which extends through the lower jaw below the slide-plate, when the plate is secured in its adjusted position by tightening the set-screw L. The point F is now forced down against the block, and by exerting a steady pressure on the handles of the pliers with the hand the block will be forced out without breaking or injuring the cylinder in the least. All of the apertures of the series J are countersunk on their upper sides, making them self-centering, and this is a very useful feature, as the stakes now used by watch-makers have a flat top, making it very difficult to drive out a cylinder-block, as the body of the cylinder is so near the size of the block that the pivot is attached to that it is very often driven out with the block; but by making the holes J in the plate countersunk on their upper sides, making them self-centering, it will be found that when the block is pressed out the body of the cylinder will first come in contact with the sides of the countersunk hole, where it will be held, while the block, being smaller, will be pushed out through the hole J of the slide-plate and will fall out through the registering-hole O, which extends through the lower jaw of the pliers. The series J of apertures extend through the slide-plate near the edge of the same, while the series K extend along the central line of the plate, as shown.

It will be seen from the foregoing that my new and improved tool will operate rapidly, surely, and efficiently in removing the blocks from the cylinders of watches when the pivots of the said blocks have become broken, and will remove the said blocks without injuring the cylinders in the least. The points can be changed and the graduated plate adjusted so as to remove any sized pivot-block, the change being effected in a few moments. By countersinking the holes J, as described, they are rendered self-centering.

When it is desired to punch a small aperture in a watch-spring or other thin piece of metal, in which it has heretofore been necessary to drill such small apertures, this can be readily done by adjusting the slide-plate to bring the hole of the series K of the required size to register with the point, when the point F, which was used for removing the pivot-blocks, is removed and replaced with a sharpened point, P, of slightly-different shape and inclination, as shown in the detail view, Fig. 6 of the drawings. This point is inclined so that it will register with and enter the series of holes K, which extend along the center of the plate. The tool can then be used to punch small apertures in thin metal plates of various kinds—such as watch-springs, &c.—and will be found exceedingly convenient for this purpose. Points P of different size can be used, the plate being adjusted to bring the hole K of the desired size to register with the said graduated points, as in using the points F. The holes K increase in size toward their lower ends to adapt them to clear themselves more readily.

Besides the purposes above stated, my new and improved tool can be used to extract small rivets, as the rivets from the hinge or joint of breastpins, and for many other purposes which will suggest themselves to the practical watch-maker, and will be found an exceedingly convenient, practical, and efficient tool.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a watch-maker's tool, the combination of the pliers having the transverse recess formed with inclined sides in its lower jaw, and having the seat and the set-screw in its upper jaw, the plate formed with the beveled edges and the graduated series of apertures, and the set-screw for the same, and the removable points, substantially as set forth.

2. In a watch-maker's tool, the combination of the pliers having the transverse recess and the set-screw in their lower jaw, and having the seat and set-screw in their upper jaw, the removable points, and the adjustable plate formed with the graduated series of countersunk apertures, and the series of apertures increasing in size toward their lower ends, substantially as set forth.

3. In a watch maker's tool, the combination of the pliers having their lower jaw formed with the transverse recess and the discharge-opening, and having the set-screw and their upper jaw formed with the seat and provided with the set screw, the removable points, and the adjustable slide having the series of graduated apertures, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

JAMES COOK.

Witnesses:
A. W. GAINES,
HARRY S. PROBASCO.