(No Model.)

A. F. THOMPSON.

WATCH MAKER'S TOOL.

No. 404,937. Patented June 11, 1889.

Fig. 1.

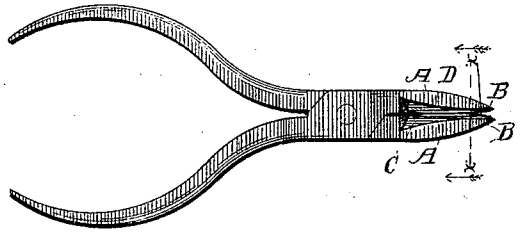


Fig. 2.

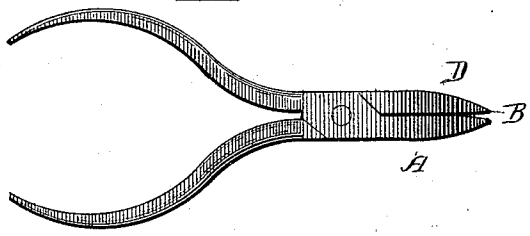


Fig. 3.

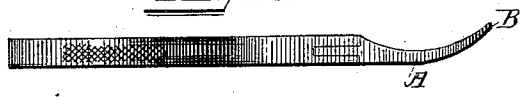
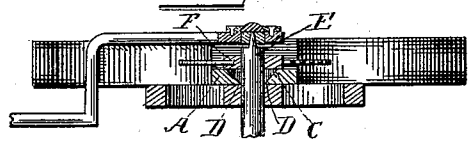


Fig. 4.



Fig. 5.



WITNESSES:

Wm. T. Robertson.

W. Payton.

INVENTOR

A. F. Thompson.

BY D. W. McCleary

ATTORNEY.

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

ALBERT F. THOMPSON, OF ADEL, IOWA.

WATCH-MAKER'S TOOL.

SPECIFICATION forming part of Letters Patent No. 404,937, dated June 11, 1889.

Application filed August 23, 1888. Serial No. 283,547. (No model.)

To all whom it may concern:

Be it known that I, ALBERT F. THOMPSON, of Adel, in the county of Dallas and State of Iowa, have invented certain new and useful Improvements in Hair-Spring-Collet Removers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to a device adapted for use by watch-makers, and more especially to a tool adapted to be used in removing the hair-spring collet from the shaft of the balance-wheel, although I do not confine its application to such operation, as it could be used equally as well in other operations presenting the same difficulties.

In cleaning watches and in doing any work upon the balance-wheel it is necessary in most every instance to remove the hair-spring and collet from the shaft of the balance-wheel. This is generally accomplished by inserting the edge of some sharp instrument between the hub of the balance-wheel and the collet, and then by working the instrument the collet is pried off. In this operation it will be seen that the pressure is applied from one side only and has a tendency to disarrange or otherwise injure the parts operated upon.

The object of my invention is to provide a device of the character above mentioned that will do the required work without injury to the parts, and of simple and durable construction.

The invention consists in the details of construction and combinations of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 represents a plan view of my invention. Fig. 2 is a like view taken from the under side of the device. Fig. 3 is a side elevation. Fig. 4 is a cross-sectional view of the jaws, taken on the line *x x* of Fig. 1; and Fig. 5 represents a cross-sectional view of the device in operation.

The two handles and their pivotal connection employed in my invention are of the ordinary construction of pliers.

A A represent jaws, said jaws being tapered and ending in points B B. The said jaws are curved upwardly, as shown in Fig. 3, and also tapered. The inner sides of the jaws are beveled, as shown at C C, to form sharp edges D D at the lower portions thereof. The edges D D do not meet, but are arranged so as to be a slight distance apart when the device is in a closed position.

The operation of my invention is as follows: The device is held in one hand and the balance-wheel in the other hand. The edges D D are then inserted between the hub E of the balance-wheel and the collet F. Pressure is then applied to the handles, and the edges passing in between the hub and the collet by means of the beveled portions D D remove the collet.

By the employment of this device, which can be operated by any watch-maker, the tightest collet can be removed quickly and with ease without danger of injury to any of the parts.

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

As an article of manufacture, a tool for watch-makers, consisting of two handles pivoted together, and provided beyond their connection with jaws bent upwardly, tapering toward their outer and upper ends and beveled on their adjacent side edges to form knife-edges, as and for the purpose set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ALBERT F. THOMPSON.

Witnesses:

FRANK M. CARRELL,

EDMUND NICHOLS.