(No Model.)

W. G. CROOK.

WATCHMAKER'S TOOL.

No. 510,897. Patented Dec. 19, 1893.

Fig. 1

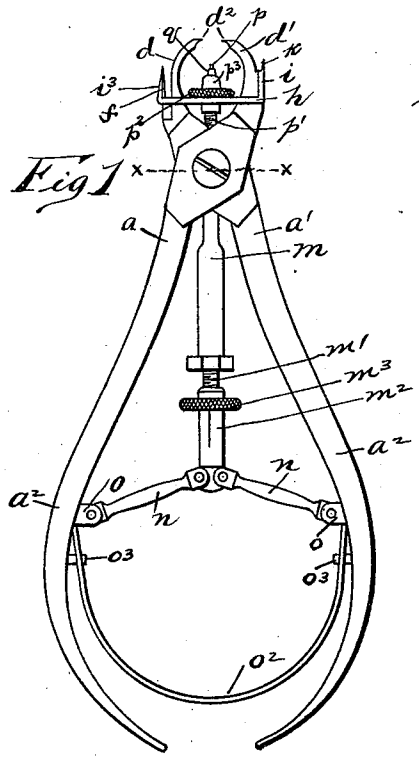


Fig. 2

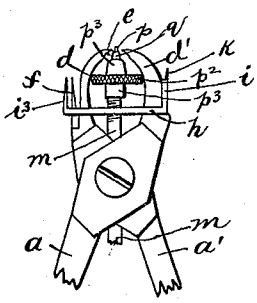


Fig. 3

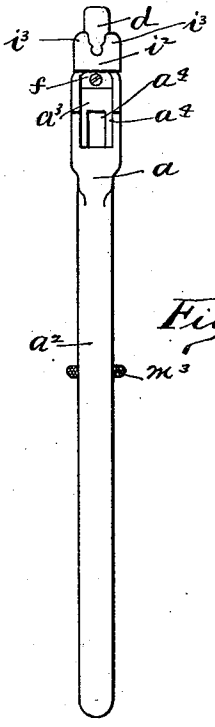


Fig. 4

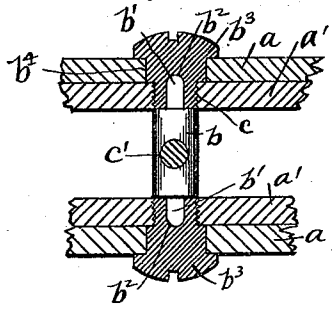


Fig. 5

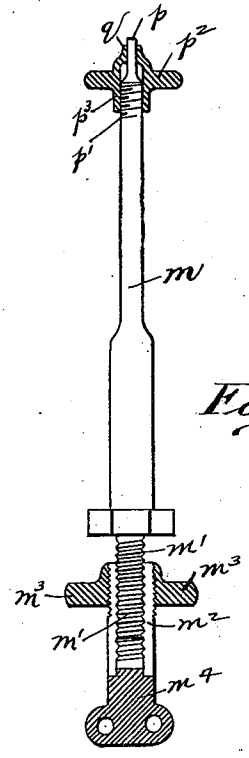


Fig. 6

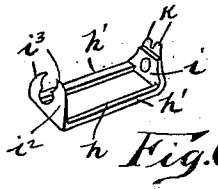
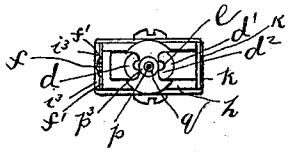


Fig. 7



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WATCHMAKER'S TOOL.

SPECIFICATION forming part of Letters Patent No. 510,897, dated December 19, 1893.

Application filed March 17, 1893. Serial No. 466 474. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. CROOK, a citizen of the United States, residing at Nelsonville, in the county of Athens and State of Ohio, have invented a certain new and useful Improvement in Jewelers' Tools, of which the following is a specification.

My invention relates to the improvement of watchmakers' tools and has particular relation to tools adapted for the handling of the hands of a watch.

The objects of my invention are to provide a simple, reliable and convenient tool which will greatly facilitate the detaching and handling of the hour, minute and second hands of a watch; to admit of said tool being so adjusted as to facilitate its use in connection with watches of various sizes and to otherwise produce in a neat and inexpensive form a desirable tool for jewelers or watch makers. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved tool. Fig. 2 is a similar view of the head or jaws of the same showing the latter closed inward. Fig. 3 is a view at right angles from that shown in Fig. 1. Fig. 4 is an enlarged sectional view on line $x\ x$ of Fig. 1. Fig. 5 is an enlarged detail view in elevation of the plunger showing a portion of the parts connected therewith in section. Fig. 6 is a detail view in perspective of the lifting or clamping frame and Fig. 7 is a plan view of the jaw portion of my improved tool.

Similar letters refer to similar parts throughout the several views.

A and A' represent the two oppositely curved arms of my improved tool and a^2 the outwardly bowed handle portions thereof. Within a slotted opening a^3 in the head of the arm a is pivoted the corresponding portion of the arm a', the latter also being provided with a slotted head opening a^4. In producing this pivotal connection I employ a transverse pivot pin b, the latter having a smaller spindle extension at each end as indicated at b'. These spindle ends of the pivot pin enter as shown, sockets b^2 which are formed in the inner ends of short connecting pivot screws b^3, one of the latter serving to pivotally connect corresponding sides of the respective heads of the tool sections $a\ a'$. As shown in the drawings these pivot screws b^3 are provided adjacent to their heads with unthreaded portions b^4, the latter serving as journals for the sections a through which they pass. The inner end portion of each of these pivot screws is threaded as shown, said threaded portions being screwed into screw holes c formed through the sides of the head of the section a'. At the center of the length of the pin b is formed a pin hole c'.

Each of the jointedly connected tool sections a and a' is provided adjoining its pivot head portion with an inwardly curved clamping jaw, said jaws being indicated respectively at d and d'. The outer ends of these jaws which are designed to be clamped toward each other, are as indicated at d^2, beveled to form sharp or thin edges, the outer sides of said edge portions being flattened as shown, and each of said sharpened edges having formed centrally therein a rounded notch e. To the outer side of the jaw d near the base thereof I affix the base of a vertical claw tooth f. As shown in the drawings the base of this claw tooth f is thickened inwardly thus separating the upwardly extending and thinner portion of said tooth from the jaw d. This upwardly extending portion of said tooth is bifurcated to form prongs.

h represents an oblong catch or lifting frame which consists as shown of two parallel bars h' connected by upturned end pieces i and i^2. As shown in the drawings, the jaws $d\ d'$ are inserted through the frame h and the upturned end i of said frame is secured by a screw or otherwise to the outer side of the jaw d'. This upturned end portion i of said lifting frame has its upper and thinner portion notched centrally or bifurcated to form two separated legs k. The opposite end i^2 of the frame h which as shown projects beyond the jaw d normally abuts against the outer side of the tooth f. This frame end portion i^2 is also bifurcated to form therein separated prongs or blades i^3, the latter having but slight thickness and the inner edge of each of said prongs preferably presenting a double scallop as shown.

m represents a central plunger rod, which as shown in the drawings, passes downward between the side arms h' of the frame h through the opening c' in the pivot pin b and

terminates in a screw threaded lower end portion m' at a point midway between the bowed handles a^2. Upon the screw m' is screwed an internally threaded split tube m^2, the latter having its upper portion externally threaded and a suitable thumb nut m^3 on said threaded portion. The lower end of the tubular piece m^2 is formed solid as shown at m^4 and to opposite sides of said solid portion is jointedly connected the inner ends of toggle arms n. These toggle arms which extend outwardly and downwardly have their outer ends fulcrumed in suitable bifurcated lugs o which project from opposite points on the inner sides of the handle portions a^2. These handle portions a^2 are normally pressed outward away from each other by the action of a bowed spring strip o^2, the ends of which are connected with pins o^3 which project inwardly from the handles a^2 at opposite points.

Upon the upper or outer end of the rod m I provide a smaller pin extension p. Immediately below this pin extension p I provide the rod m with screw threads p'. p^2 represents a thumb piece which is provided with a tubular portion or hub p^3 the latter being internally threaded and adapted as shown, to be screwed upon the portion p' of the rod m. The upper portion of the hub p^3 is as shown, shaped to form a smaller neck portion q the latter loosely surrounding the pin extension p.

In order to untilize my improved tool for the purpose of lifting the hour hand of a watch from its post, the tool is so supported that by pressing inward upon the handles a^2 the sharpened edges d^2 of the jaws d d' will catch under the inner end of the hand, the post being embraced by the toothed edges of said jaws. In this operation of the tool it will be seen that not only are the jaws forced toward each other but the plunger rod is driven outward until the end of the neck q of the hub p^3 rests against the outer end of the cannon staff. In case the thumb piece p^2 is screwed inward upon the plunger rod until the pin extension p of said rod projects outward as shown in the drawings through the neck q it will be seen that said pin p will bear directly upon the cannon staff instead of the neck q. It will thus be seen that not only will a bearing contact take place between the cannon staff and plunger during the operation of grasping the hand, but that the contact points of said plunger may be made to vary in accordance with the size of the watch; that is, in case of a small sized cannon staff the pin extension p of the plunger would he employed, whereas a larger cannon staff might necessitate the use of the neck q.

In order to lift the hour hand from the cannon, the handles are pressed toward each other resulting in the separation of the tooth f from the portion i^2 of the frame h as shown in Fig. 2 of the drawings. The tool is so turned as to admit of the insertion of the outer teeth or prongs i^3 beneath the inner end of the hour hand of the watch, the cannon entering the rounded notch between said prongs. By allowing the prongs i^3 and f to again spring together, it will be seen that the hour hand will be grasped between said prongs and may readily be lifted from the watch.

In order to remove the seconds hand I so turn the tool as to admit of the insertion of the prongs k of the frame portion i beneath the inner end of said seconds hand thus enabling the operator to lift the hand from the watch without injury to the latter.

By turning the thumb nut m^3 upward on the split tube m^2 until the screw m' is sufficiently loose in said tube, it is evident that the plunger rod must be adjusted outward or inward by rotating the same. This having been accomplished it will be seen that a close engagement of the tube m^2 and its screw m' may be had by turning downward the thumb nut m^3, which will result in clamping the separated tube section closely against said screw m', and thus obviate any tendency of said screw to turn through the rotation of the threaded hub p^3 about the outer ends of said plunger.

From the construction which I have herein shown and described it will be seen that a simple, neat and reliable tool is produced by which the lifting and handling of the hands of a watch may be easily accomplished without injury to the watch and without loss of time.

It is evident that a tool of this class may be produced at a reasonable cost and that the same will be of great utility to jewelers, watch-makers and others engaged in constructing and repairing watches.

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

1. In a jeweler's tool the combination with the jointedly connected bowed arms a a', inwardly projecting jaws d d' thereon and notches e in said jaws, of the transverse lifting frame h embracing said jaws and secured to one of the same as described, outturned notched end portions i and i^2 on said frame, a bifurcated tooth f secured to the jaw d on the inner side of said frame end i^2 and a spring strip o^2 normally pressing the handles of said tool outward substantially as and for the purpose specified.

2. In a jeweler's tool the combination with the arms a a' having as described bowed portions a^2 and jaws d d', slotted openings a^3 a^4 in said arm heads, the opening a^4 adapted to receive the head of the arm a', pivot screws b^3 connecting as described the sides of said heads, a pivot pin b having end spindles b' journaled in the ends of said screws b^3, of a plunger rod m passing loosely through said pin b and projecting between the jaws d d', toggle arms n jointedly connecting the inner end of said plunger with the handle sections

and a spring between said handle sections substantially as and for the purpose specified.

3. In a jeweler's tool the combination with the arms a a' having as described bowed portions a^2 and jaws d d' and a pivot pin b jointedly connecting said arms and having an opening therethrough, of a plunger rod m passing loosely through said pin b and projecting between the jaws d d', a screw termination m' on said plunger rod, a split internally threaded tube m^2 which receives said screw m' as described, a clamping nut m^3 on the outer screw threaded surface of said tube, toggle arms n jointedly connecting said tool handle portions and said tube m^2, and a spring bearing between said handle portions substantially as and for the purpose specified.

4. In a jeweler's tool the combination with the arms a a' having as described bowed portions a^2 and jaws d d', a pivot pin b jointedly connecting said arms as described, a central-opening in said pivot pin, a plunger rod passing through said opening and projecting between said jaws, toggle arms n jointedly connected with the inner end of said plunger rod and with the arms a^2, a pin extension p on the outer end of said rod m, a rotary hub or sleeve having an outer neck portion q surrounding said pin extension, said sleeve being adjustably secured as described on said rod m substantially as and for the purpose specified.

WILLIAM G. CROOK.

In presence of—
WM. W. PARTON,
W. C. HICKMAN.