No. 647,832. Patented Apr. 17, 1900.

# C. G. HARSTRÖM.

## WATCH HAND REMOVER.

(Application filed Feb. 16, 1900.)

(No Model.)

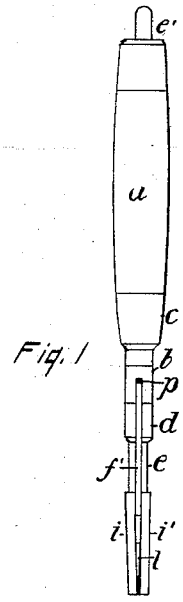


Fig. I

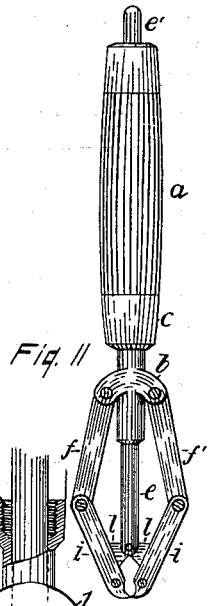


Fig. II

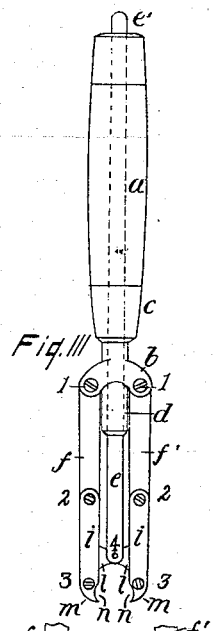


Fig. III

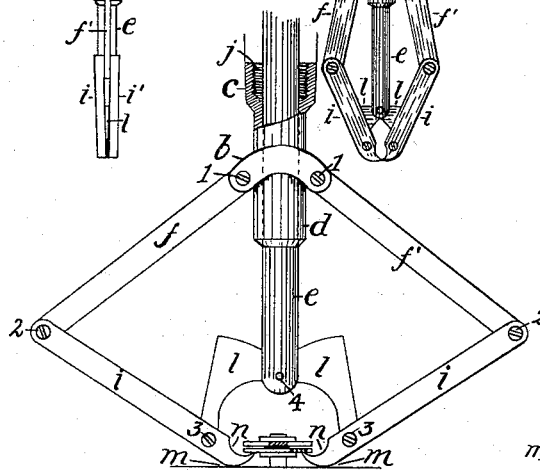


Fig. IV

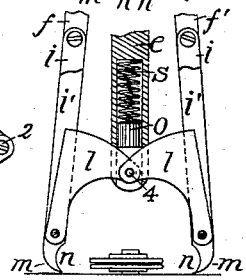


Fig. V

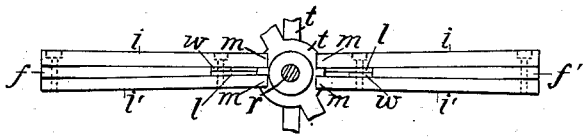


Fig. VI

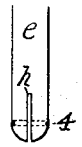


Fig. VII

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# UNITED STATES PATENT OFFICE.

CARL G. HARSTRÖM, OF PEEKSKILL, NEW YORK.

## WATCH-HAND REMOVER.

SPECIFICATION forming part of Letters Patent No. 647,832, dated April 17, 1900.

Application filed February 16, 1900. Serial No. 5,425. (No model.)

*To all whom it may concern:*

Be it known that I, CARL G. HARSTRÖM, a citizen of the United States, and a resident of Peekskill, in the county of Westchester and State of New York, have invented a certain new and useful Watch-Hand Remover, of which the following is a specification.

My invention relates to tools used by jewelers, watch-repairers, and others for removing the hands from watches, and has for its object a device that surely and quickly performs the operation without danger of injury to either the hands or other parts of the watch and that requires only the fingers of one hand for its manipulation. These objects are attained by the means set forth in this specification and the accompanying drawings, which form a part thereof.

Referring to the drawings, in which like letters and digits refer to similar parts throughout the several views, Figure I is an edge view of the tool held vertically. Fig. II is a side view of the same. Fig. III illustrates the first movement of the tool when being applied to use. Fig. IV shows a section of the tool, in enlarged form, during the operation of hand-removing. Fig. V is a sectional view of the operating parts of the tool. Fig. VI is a bottom view of Fig. IV, and Fig. VII shows the lower end of the opening rod or spindle. Fig. II illustrates the tool or instrument in actual size and the normal positions of the several parts when not in use.

For manipulation the tool is held by the handle *a* between the thumb, the middle, and third fingers, the index-finger being used to operate the opening-rod *e e'*, which passes freely through the handle and projects beyond the end of the handle, as shown.

The handle is preferably screwed into a socket *j* in the hub *c* of the metallic piece, composed integrally of the parts *c b d*, Figs. III and IV. The side extensions *b* are slotted, as indicated at *p*, Fig. I, to receive the bars *f f'*, these bars moving freely on pivots 1 1, Figs. III and IV. To the ends of the bars *f f'* shorter bars *i i i' i'* are pivoted at 2 2, Figs. III, IV, and V. These shorter bars are in pairs, as will be seen by reference to Figs. I, V, and VI, the bars upon one side being indicated by *i i* and upon the reverse side by *i' i'*. The free ends of these bars are curved on their outer faces, as at *m m*, Fig. IV, and concaved on their inner edges, as at *n n*, to facilitate reaching under objects, as shown in Figs. IV and V. The six bars thus joined together would hang from the handle if it were suspended vertically, as shown in Fig. III.

The rod *e e'*, that passes through the handle, is slotted at one end, as at *h*, Fig. VII, and has a rivet-hole 4 at right angles to the slot. This slotted end of the rod passes below the handle between the bars just described, as in Fig. III. Levers *l l* (shown entire in Fig. V by the cutting away of the bars *i i*) are of thin steel and made to connect the free ends of the bars *i i i' i'* and the slotted end of the rod *e*, as in Figs. II to V, inclusive. When so connected and held vertically, as in Fig. III, the positions of the various parts would be as there shown; but if the handle should be turned upper end down then the parts would fall to the position shown in Fig. II and the extreme points of the bars *i i* would have no stability as to their distance from the handle. While the tool could be used in this form, its manipulation would be awkward.

To give the points stability and for other reasons to be explained, means are employed that are shown in Fig. V. The slotted end of the rod *e e'* is also bored to a suitable depth to receive a special spring *s* and a hardened-steel plunger *o*. The leaves *l* are made in segmental form, the curved faces receiving the thrust of the spring *s* through the plunger *o*, as is clearly shown.

It will be observed by reference to Fig. V that the pressure of the plunger *o* is exerted upon the levers on each side of their pivot 4, and so long as the parts are free to move the extreme ends of the levers *l* will be drawn together until the faces in contact with the plunger form a horizontal line under the plunger or until the meeting of the points of the levers *i* with each other or with some object between them.

In the manipulation of this tool the handle is held as before described and pressure is applied to the rod *e e'*, which I have called the "opening-rod." Pressure on the rod puts pressure on the pivot 4, that secures the levers *l l*, and as this pivot is in a vertical plane between the pivots 3 3 the points of the bars

*i i* are forced apart, as in Figs. III and V. In that position the points of the bars are placed in juxtaposition with the object to be lifted, as on each side of watch-hands, as in Fig. V, *t t* indicating the hands, and *r* the arbor, to which they are attached. The pressure that has thus opened the points of the tool has, through the levers *l l*, Fig. V, put a tension upon the spring *s*. As soon as the finger is removed from the rod *e e'* the tension of the spring acting upon the levers *l l* forces the points of the tool close upon the object to be operated upon. Then by pressing upon the handle *a* the bars *f f'* are spread apart, as in Fig. IV, causing the bars *i i i' i'* to act as levers under the removable object, their curved ends *m m* serving as fulcrums and their points as the short ends of the levers. It is obvious that the pressure is strong, and since it is applied on each side of the arbor holding the watch-hands it must be effective. Fig. VI further illustrates some features of the construction of the tool. The levers *l l* overlap each other where they join in the slot in the end of the rod *e e'*, and consequently do not lie in the same plane, as shown in this figure. As compensation for this and to avoid distortion of the lever-bars, washers *w w* are placed on reverse sides of the two levers *l l*, as indicated.

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

1. A tool for removing the hands of watches comprising the following elements: a handle *a* having a rod *e*, *e'*, through its length and extending from the top of the handle having its lower end slotted and recessed and connected with levers *l*, *l*, the double lever-bars *i*, *i'*, curved on their outer faces and concaved on their inner faces as shown, and connected by bars *f*, *f'*, to extensions *b* from the metallic part *c*, *b*, *d*, of the handle, the metallic part *c*, *b*, *d*, and the plunger and spring within the recess in the rod *e*, *e'*, all substantially as shown and described.

2. In a tool as described the combination of the levers *i*, *i'*, and rod *e*, *e'*, with the levers *l*, *l*, said levers *l*, *l*, pivoted to the levers *i*, *i'*, and to the rod, the levers *l*, *l*, having curved extensions as shown, the recess in said rod, and the spring and plunger in said recess to act upon said curved extensions substantially as and for the purpose shown.

3. In a tool substantially as described for removing watch-hands by means of levers acting simultaneously upon opposite sides thereof, said levers being pivoted to a handle as shown, means for operating said levers comprising the combination with said handle and levers of the rod and segmental levers, the rod passing through the handle and having its inner end pivoted to the segmental levers, the said segmental levers in turn pivoted to the hand-removing levers, and a spring and plunger within a recess in the end of said rod for the purpose described, the free end of said rod extending above the handle, substantially as herein shown and described.

Signed at Peekskill, in the county of Westchester and State of New York, this 10th day of February, A. D. 1900.

CARL G. HARSTRÖM.

Witnesses:

GUSTAV KARLZEN,

DAVID M. CONKLIN.