(No Model.)

M. W. MALLETT.

WATCH HAND REMOVER.

No. 491,781. Patented Feb. 14, 1893.

Fig. 1.

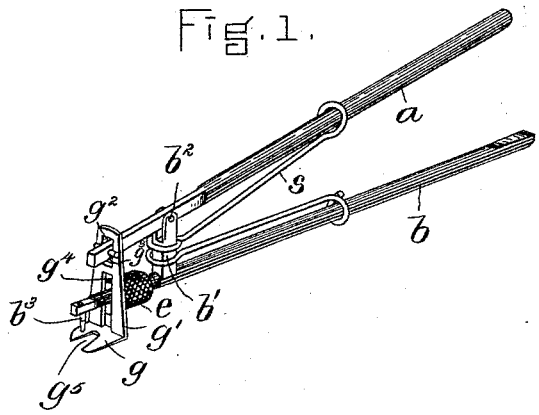
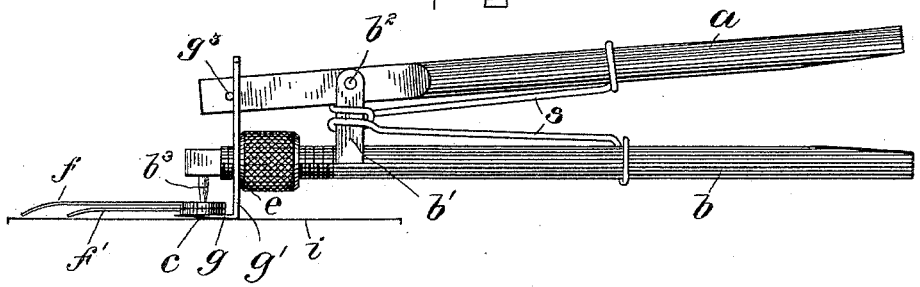


Fig. 2.



WITNESSES.

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MARKHAM W. MALLETT, OF WALTHAM, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO THOMAS G. ROLLINS, OF SAME PLACE.

WATCH-HAND REMOVER.

SPECIFICATION forming part of Letters Patent No. 491,781, dated February 14, 1893.

Application filed December 21, 1891. Serial No. 415,832. (No model.)

To all whom it may concern:

Be it known that I, MARKHAM W. MALLETT, of Waltham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Watch-Hand Removers, of which the following is a specification.

This invention relates to a tool adapted to remove the hands of a watch from the parts of the watch movement with which they are connected when the watch is in use.

The hour and minute hands of a watch are connected by friction respectively with the hour hand wheel and the cannon pinion of a watch movement, each hand having at its inner end a collar which is pressed friction-tight onto the part that supports it, the hour hand being connected in this way with the sleeve on the hour hand wheel, while the minute hand is similarly connected with the post of the cannon pinion. Said collars fit so tightly that considerable force is required to remove them; and in the operation of removing the hands by the means at present in use there is more or less liability of injuring the hands and the dial.

My invention has for its object to provide a tool adapted to remove watch hands easily and without liability of injury to the hands or to the dial, and to this end it consists in the improved tool which I will now proceed to describe and claim.

Of the accompanying drawings forming a part of this specification, Figure 1 represents a perspective view of my improved tool; and Fig. 2 represents a side view of the same, showing its position with relation to the dial and hands of a watch when in use.

The same letters of reference indicate the same parts in both of the figures.

In the drawings *a* and *b* represent handles or levers which are pivotally connected, preferably by means of a post *b'* attached to lever *b*, and a pivot b^2 connecting lever *a* to post *b'*. The lever *b* is provided with a downwardly projecting pin or rest b^3 near one end, adapted to bear on the upper end of the center post *c* with which the minute hand *f* is connected, said post being a part of the cannon pinion. *g* represents a flat jaw formed on a shank *g'* which is loosely engaged at its upper end with the lever *a*, preferably by means of an orifice g^2 formed in said shank and receiving the reduced end of the lever *a*, said lever having a pin g^3 bearing against the outer side of said shank. This construction provides a pivotal connection between the jaw and lever *a*, whereby the former is enabled to rest against the under side of the collar of the hand and remove it without bending up any portion thereof. The jaw *g* has a V-shaped recess g^5, the outer portion of which is of sufficient width to bestride the collar of the hour hand wheel to which the hour hand *f'* is secured, the said jaw being formed to be interposed between the dial *i* and the under surface of the collar of the hour hand. The shank *g'* has a slot g^4 through which the lever *b* passes; said slot being of sufficient length to permit the lever *b* to ride and fall in it. The lever *b* has a shoulder *e* bearing against the rear side of the shank *g'* to prevent the jaw *g* from swinging backwardly, said shoulder being here shown as a nut engaged with a screw thread on the lever *b* and adjustable lengthwise of said lever to support the shank at different distances from the pin b^3, if desired.

A spring *s* is preferably employed to press the rear ends of the levers *a b* apart, and thus normally withdraw the pin or rest b^3 from the jaw *g*.

The device is operated as follows: When it is desired to remove the hands of a watch, the jaw *g* is pushed under the collar of the hour hand *f'* and rests on the dial *i*, as shown in Fig. 2, the relative arrangement of the parts being such that when the edges of the V-shaped recess in the jaw come to a bearing on the sleeve of the hour hand wheel, the bearing pin b^3 on the upper lever will be directly over the center post *c*. The operator then presses the rear ends of the levers *a b* toward each other, and thus causes the pin b^3 to press downwardly on the center post *c* and the jaw *g* to press upwardly on the hands. The pin b^3 is therefore supported by the center post, so that the jaw *g* moves upwardly and forces the hands off from the parts with which they are frictionally connected, the collars of the hands being moved onto the pin b^3 and retained on said pin by the jaw *g* until

the operator permits the separation of the jaw and pin by the spring *s*, so that the operator can conveniently deposit the hands in a place for safe keeping.

It will be seen that the force required to remove the hands is supported entirely by the center post *c*, and that the strain is equally distributed at opposite sides of the axial center of the collars of the hands, so that there is no liability of injury to either the hands or the dial.

I do not limit myself to the described details of construction of the device, and may variously modify the same without departing from the spirit of my invention, the essential features of which are a pin attached to a lever and adapted to bear on the center post of a watch movement, and a jaw loosely hung upon another lever and formed to bear on the under side of the collar of the hour hand.

I claim:

1. A watch hand removing tool comprising in its construction two pivotally connected levers, one having a downwardly projecting pin formed to bear on the center post of a watch movement, and a jaw loosely hung upon the other lever and formed to be interposed between the dial and the collar of the hour hand, as set forth.

2. A watch hand removing tool comprising in its construction a jaw having a V-shaped recess and formed to be interposed between the dial and the collar of the hour hand, a shank on said jaw, and two pivotally connected levers, the said shank being loosely supported on one of said levers, while the other guides said shank, the guiding lever having a pin located over the jaw and arranged to bear on the center post when the jaw is in contact with the hour hand collar, as set forth.

3. A watch hand removing tool comprising in its construction a jaw having a V-shaped recess and formed to be inserted between the dial and the collar of the hour hand, a shank on said jaw, two pivotally connected levers, the said shank being loosely supported by one of said levers, while the other guides said shank, the guiding lever having a pin located over the jaw and arranged to bear on the center post when the jaw is in contact with the hour hand collar, said guiding lever having also a shoulder to form a bearing for the rear side of the shank of the jaw, for the purpose set forth.

MARKHAM W. MALLETT.

Witnesses:
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