

May 17, 1949.

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2,470,327

CLOCK HAND REMOVING TOOL

Filed Feb. 8, 1946

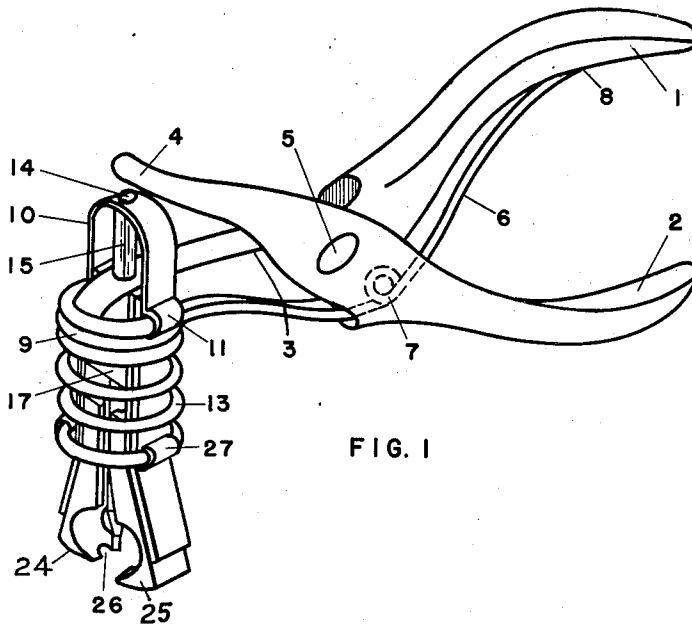


FIG. 1

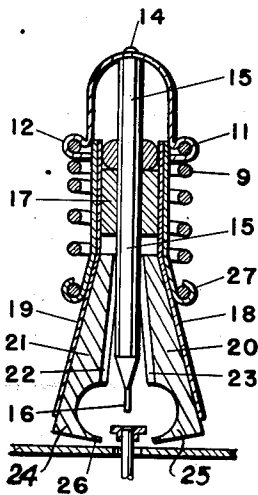


FIG. 2

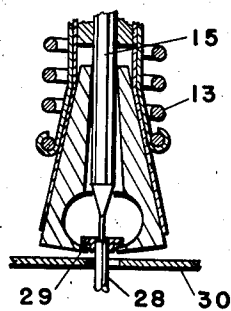


FIG. 3

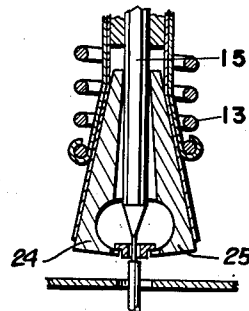


FIG. 4

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2,470,327

CLOCK HAND REMOVING TOOL

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Application February 8, 1946, Serial No. 646,276

2 Claims. (Cl. 29—232)

1.

This invention relates to a tool for removing frictional held hands of recording instruments such as clocks, watches or the like.

The objects of the invention is to provide a tool which will remove the hand from the arbor without injuring the hand or arbor, or the dial which generally lies, in this type of instrument, directly under the hand.

A further object of the invention is to provide a tool for removing frictional held hands from shaft in which the hand engaging jaws are automatically self adjusting to the diameter of the shaft on which the hands are mounted.

A still further object of the present invention is to provide a tool which can be manipulated with one hand to accomplish the desired purpose of removing the hand of a recording instrument.

A still further object of the invention is to provide a plier-like tool which with one operation engages the main shaft or arbor of a recording instrument and the hand or indicating finger mounted on the arbor, and exerts a force against the arbor and simultaneously pulls upward on the hand or pointer to remove the same from the arbor.

A still further object of the present invention is to provide a plier-like tool having a gripping element carried on one of the jaws of the tool, and means actuated by the other jaw of the tool to operate said gripping element.

With the foregoing and other objects in view, the invention resides in the novel arrangement and combination of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein described may be made within the scope of what is claimed without departing from the spirit of the invention.

The invention is shown in the accompanying drawing in which

Figure 1 is a prospective view of the tool.

Figure 2 is a sectional view of the lower part of the tool showing the dial of the recording instrument and the hand, with the tool in the open position.

Figure 3 is a view similar to Figure 2 showing the tool in the closed position, but previous to the removing of the hand.

Figure 4 is a view showing the hand removed.

Referring particularly to Figure 1, the tool is formed plier fashion having hand grips 1 and 2, and jaws 3 and 4. The two sections are pivotally mounted on pin 5 and have a spring member 6 contacting the hand member 2 at 7, and the hand

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member 1, at 8, to normally force these members apart. The other end 9 of the spring member is coiled around the gripping members and serves to return the coil spring to its uppermost position, to be explained in detail later.

Secured to the underside of and forming part of the lower jaw 3 is a block 17 (Figure 2). Slidably mounted in said block and lower jaw is a pin 15.

Riveted to the upper end of pin 15, as at 14, is a yoke member 10, the free ends of which straddle the lower jaw and are curved, as at 11 and 12, to receive the uppermost coil of a coil spring 13. The ends 11 and 12 are bent around the coil and support the spring in position about the block 17. The spring, yoke and pin are slidably carried by the lower jaw 3.

A pair of spring members 18 and 19 are secured at their upper end to opposite sides of the block 17. The lower ends of said spring members, which by their inherent spring nature are normally urged apart, carry hand engaging jaws 20 and 21.

The gripping jaws 20 and 21 are grooved at 22 and 23 to receive the pin 15 and serve as a continued guide of the pin during the hand removing operation. The jaws at their lower extremities are formed with hand gripping claws 24 and 25 notched, as at 26, so that they may slide under the hands to be removed and securely grip the same.

The coil spring 13 secured to the lower ends of the yoke member 10 extends downward and encloses the upper end of the gripping jaws 20 and 21, when the tool is in an open position. A slide strip 27 extends from the lower to the upper end of the spring to provide a sliding surface for the spring members 18 and 19 carrying the jaws 20 and 21.

In using the hand tool, it is only necessary to utilize one hand during the removing operation, the other hand being free to hold the clock or instrument, or to receive the hands immediately upon the removal from the arbor. The tool is lowered in its open position, as shown in Figure 3, to a point just above the dial 30, and with the claw ends 24 and 25 just below the hand 29. A squeezing action on the handle members 1 and 2 brings the jaw 4 into contact with the top of the yoke member 10 and forces the pin 15 down through its slide 17, and into engagement with the arbor 28 of the instrument, as shown in Figure 3. Simultaneously with the movement of the pin 15 downward, the yoke 10 and the spring 13 are also moved downward, the lower-

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most coil of said spring engaging the outer sides of the gripping jaws bringing them together, as shown in Figure 3. This takes up about two-thirds of the movement of the jaws 3 and 4 toward each other and further movement causes the gripping members 20 and 21 to move upward as downward movement of the pin 15 is prevented by contact with the arbor 30, this upward movement bringing the hand 29 off of the arbor 30.

It is to be noted that at no time during the operation has there been any contact with the dial 28 of the instrument, the reaction being directed against the arbor 30 on which the hands are mounted. This provides a sure even pull with the forces directed against the two members which are in frictional contact, the one with the other, and efficiently removes the hands without a possibility of injuring the dial face.

What is claimed is:

1. A tool for removing frictional held hands from shafts comprising a pair of manually operable pivoted levers terminating in hand grips at one end and jaws at the other end, spring means for normally forcing said jaws apart, a block secured to the lower of said jaws and formed with a central bore, a pin slidably mounted in the bore of said block, a yoke secured at a central portion to the upper end of said pin and extending downward on each side thereof, a pair of spring strips secured to opposite sides of said block and projecting downwardly therefrom, a coil spring depending from and secured to said yoke, the lower coil of said spring engaging the spring strips, a pair of hand gripping jaws of wedge shape formation secured to said spring strips, said hand gripping jaws being formed with cooperating semi-circular grooves to receive and guide that part of the pin projecting below the block, the lower extremity of said jaws being formed to grip the hands to be removed, whereby manual operation of the levers will bring the upper jaw to bear against the yoke, the lower jaw moving the block

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and its hand gripping jaws upwardly while the upper jaw presses the yoke, the pin and the coil spring downwardly.

2. A tool for removing frictional held hands from shafts comprising a pair of manually operable pivoted levers terminating in hand grips at one end and jaws at the other end, spring means for normally forcing said jaws apart, a block secured to the lower of said jaws, a pin slidably mounted in said block, a yoke secured at its central portion to the upper end of said pin and extending downward on each side thereof, said yoke being in alignment with and actuated by the upper jaw, a coil spring secured at its upper end to the downwardly extending portions of said yoke and enclosing said block, a pair of spring strips secured to opposite sides of said block and bearing against the inner side of said coil spring and constructed to be contracted by the movement of said coil spring under the influence of said yoke, a pair of hand gripping jaws carried by the lower ends of said spring strips, each of said handgripping jaws being formed with a semi-circular groove receiving and guiding said pin whereby the movement of said lever jaws together will urge said handgripping jaws toward each other and at the same time move said pin and said handgripping jaws in opposite direction.

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