Feb. 7, 1950 R. E. WARKENTIN 2,496,611

CLOCKMAKER'S TOOL

Filed April 28, 1948

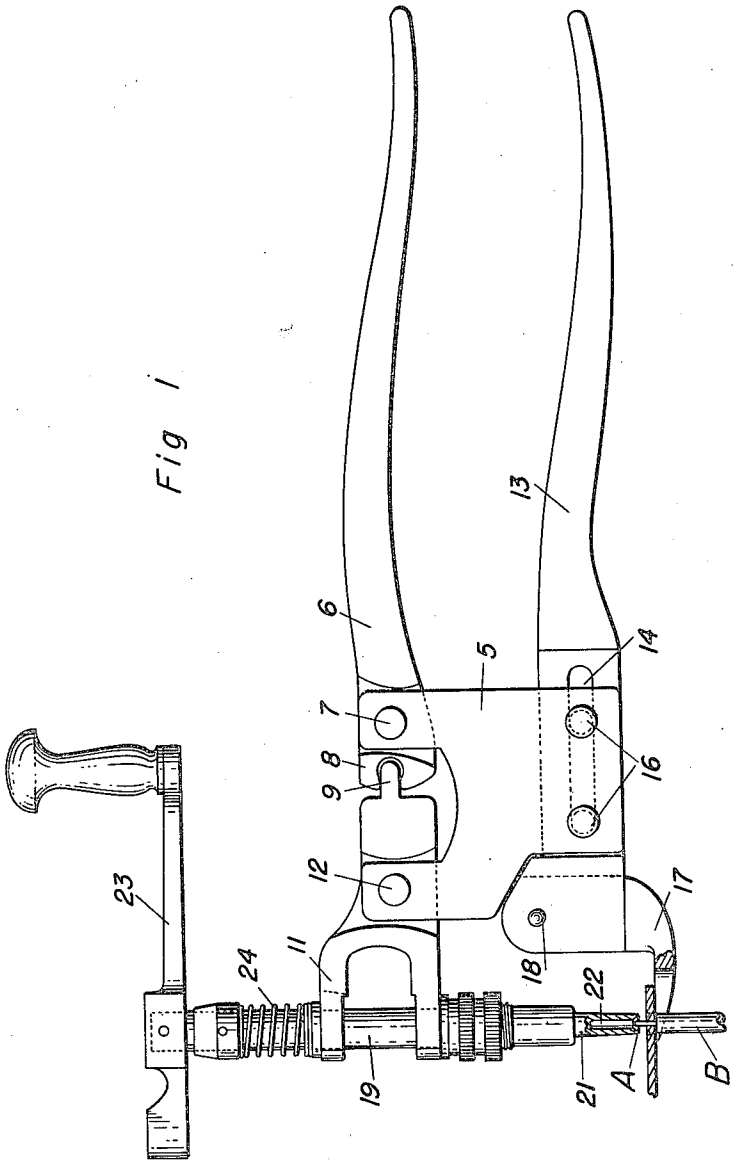


Fig 1

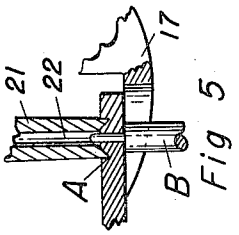


Fig 5

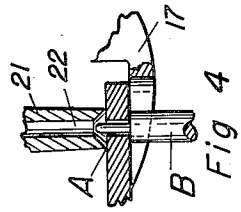


Fig 4

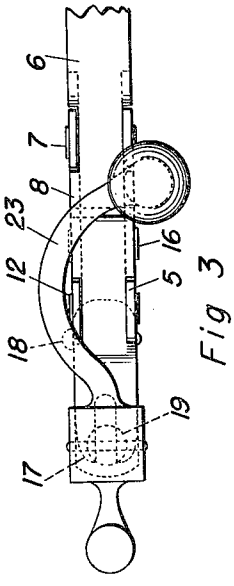


Fig 3

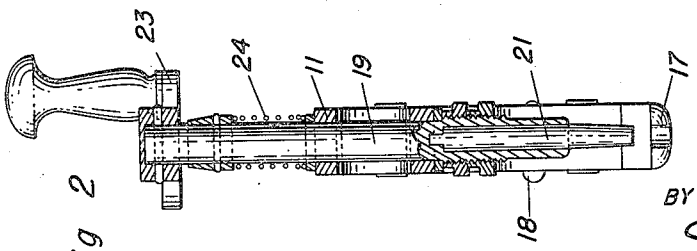


Fig 2

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2,496,611

CLOCKMAKER'S TOOL

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2 Claims. (Cl. 78—1)

1

This invention relates to improvements in tools and has particular reference to a tool for use by clock makers or repair men.

The principal object of this invention is to provide a tool which will enable the clock maker to fit the opening through the clock frame in which the pinion of one of the wheel axles rotates to form a perfect bearing.

A further object is to produce a tool of this character which may be employed without the necessity of disassembling the clock works.

A further object is to produce a tool which is economical to manufacture and one which is adjustable to accommodate for any ordinary clock movement.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Fig. 1 is a side elevation of my tool,

Fig. 2 is a front end elevation looking from the left of Fig. 1, portions thereof being shown in cross section,

Fig. 3 is a fragmentary top-plan view of Fig. 1,

Fig. 4 is a fragmentary detail view illustrating the positioning of my tool in connection with a loose or worn bearing, and

Fig. 5 is a similar view showing the tool, as applied to impress the metal about the bearing.

The ordinary clock consists of a pair of spaced plates between which is positioned a train of gears, all rotating on shafts which have reduced ends forming pinions extending through openings in the parallel plates. Some of these pinions rotate or oscillate at relatively high speeds, particularly the wheels adjacent the escapement mechanism and those associated with the escapement or striking mechanism. After a clock has been in use for a considerable period, these openings through which the pinions extend become worn, as by enlarging, and often the enlargement is in one direction, caused by uneven pressure on one side of the shaft.

Heretofore, it has been necessary to entirely disassemble a clock when it is necessary to repair the bearings in the two plates. These plates are usually made of soft material, such as brass, and, therefore, by peening the metal adjacent the hole and then re-reaming the same, a fairly satisfactory bearing can be created.

Applicant has devised a tool wherein the bearings may be repaired without the necessity of disassembling the clock works.

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In the accompanying drawings, wherein, for the purpose of illustration, is shown a preferred embodiment of my invention, the numeral 5 designates a block having a handle 6, pivoted thereto, as shown at 7, and provided with a bifurcated nose 8.

The bifurcated nose 8, engages a lug 9, formed upon a U-shaped head 11, pivoted as at 12, to the block 5.

Slidably mounted in the lower part of the block 5, is a handle 13, having a slot 14, through which guide pins 16, extend.

This handle 13, has removably attached thereto a forked anvil 17, held thereto by a removable pin 18.

Rotatably carried in the U-shaped head 11, is a tool holder 19, in which is removably positioned a tool 21, which has a central bore 22, and an inwardly beveled extremity, so as to form an annular cutting and compressing ring, as shown at A.

The upper end of the tool holder is provided with a handle 23, through the medium of which the tool holder may be rotated.

A spring 24, resiliently positions the holder in the head 11, and permits slight movement of the holder in a slot formed in the upper position of the U-shaped head, so that the bottom of the tool will line up with the surface of the plate to be operated upon.

In use, the tool is brought into engagement with the plate so that the divided nose of the anvil 17, passes underneath the plate straddling the shaft; as, for instance, the shaft B.

The handle 13, may be advanced or retracted with respect to the block 5, depending upon the working conditions encountered with the particular clock and then, by moving the handle 6, toward the handle 13, the tool will be moved downwardly over the pinion, and by using a tool which is the proper size for the pinion, the tool will be automatically centered about the pinion so that, when the end A, engages the plate through which the pinion extends, it will be centered about the pinion and then, by applying pressure to the two handles and by rotating the handle 23, the tool will cause a compressing of the metal about the pinion.

Assuming that the opening through which the pinion extends is loose, as shown in Fig. 4, then, by forcing the tool into the metal of the plate, this metal is compressed against the anvil and about the pinion, thus closing up an enlarged opening and causing the opening in the metal to be sized to the particular pinion that it sur-

rounds. The rotary movement of the tool causes a spinning or flowing of the metal being acted upon and materially helps in the forming of a new bearing and also reduces the pressure that has to be applied to the handles.

It will thus be seen that, by moving my tool from one bearing area to another, I can very quickly repair all of the bearings of a clock without the necessity of disassembling the same.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that various changes relative to the material, size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. In a tool, a block, a handle slidably mounted on said block, an anvil carried by said handle, said anvil having a bifurcated end extending parallel to the handle and offset therefrom, a second handle pivoted to said block, a head pivoted to said block, said head having a tongue connection with said second handle, whereby pivotal action of said pivoted handle will move said head toward said anvil, a tool holder rotatably and resiliently carried by said head.

2. In a tool, a block, a handle slidably mounted on said block, an anvil carried by said handle, said anvil having a bifurcated end extending parallel to the handle and offset therefrom, a second handle pivoted to said block, a head pivoted to said block, said head having a tongue connection with said second handle, whereby pivotal action of said pivoted handle will move said head toward said anvil, a tool holder rotatably and resiliently carried by said head, the slidable movement of the first handle being at right angles to the longitudinal movement of the tool.

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