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2,667,092

TOOL SUPPORTING MEANS

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FIG. 1.

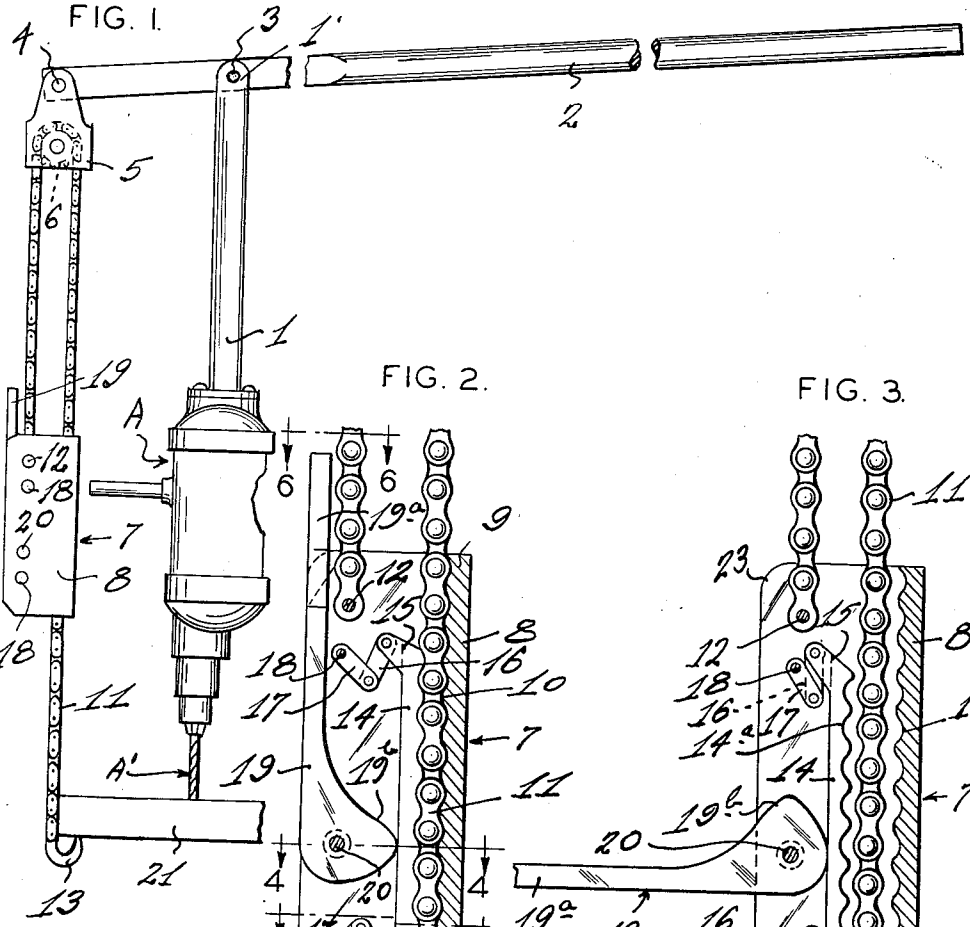


FIG. 2.

FIG. 3.

FIG. 4.

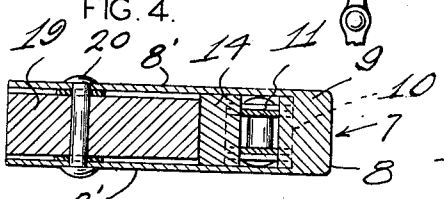


FIG. 5.

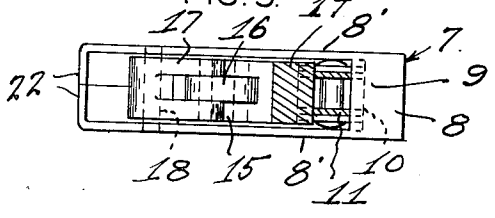
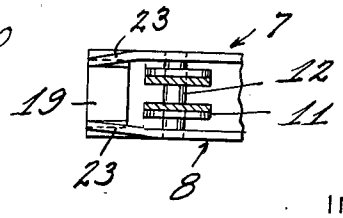


FIG. 6.



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TOOL SUPPORTING MEANS

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3 Claims. (Cl. 77—7)

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This invention relates generally to tool-supporting means and more specifically to such means adapted for use in temporarily suspending a tool, an electric drill, for instance, in position for use, the predominant object of the invention being to provide a tool-supporting means of the type mentioned above which includes a chain and a quick take-up mechanism for taking up slack in the chain in a simple manner and thereafter locking said chain in a taut condition.

Fig. 1 is a fragmentary side elevational view of the tool-supporting means of this invention and showing same as it appears when in use in supporting an electric drill in operating position.

Fig. 2 is an enlarged, fragmentary, vertical section taken through the take-up mechanism of the invention and showing said take-up mechanism in its chain locking position.

Fig. 3 is a view similar to Fig. 2 but illustrating the take-up mechanism in its unlocked position.

Fig. 4 is an enlarged, horizontal section taken on line 4—4 of Fig. 2.

Fig. 5 is an enlarged, horizontal section taken on line 5—5 of Fig. 2.

Fig. 6 is an enlarged, horizontal section taken on line 6—6 of Fig. 2.

In the drawing, wherein is shown for purposes of illustration, merely, one embodiment of the invention, A designates an electric drill which is of ordinary construction except that it has a rod 1 suitably fixed to the upper portion thereof, said rod 1 being extended upwardly from said electric drill and having a bifurcated upper portion 1'. Associated with the rod 1 is a lever 2 a portion of which is disposed between the spaced legs of the bifurcated portion 1' of the rod 1, said lever being pivoted to said spaced legs of said bifurcated portion by means of a pivot element 3. Pivotally attached to an end of the lever 2 by a pivot element 4 is a head member 5, said head member being in the form of a housing which is open at the bottom thereof and said housing having disposed therein for rotation a sprocket wheel 6.

The structure of this invention includes a take-up mechanism 7 which comprises a housing 8, said housing being open at the top and bottom and at one side thereof, as is shown to good advantage in Figs. 2 and 3, and being closed at an opposed side by a wall 9 having an irregular inner face 10. A sprocket chain 11 is secured at an end thereof by a fastening device 12 in a

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position between the opposed walls 8' of the housing 8 and this chain extends upwardly from its point of attachment to said housing 8 to the sprocket wheel 6 disposed within the head member 5 over which said chain passes. From the sprocket wheel 6 the chain passes downwardly through the housing 8 in close proximity to the irregular inner face 10 of the wall 9 of housing 8, said downwardly extended chain portion having a hook 10 fixed to its lower end which serves a purpose to be hereinafter explained.

The take-up mechanism 7 includes a chain clamping member 14 which is provided with a face 14a that is shaped in accordance with the shape of the face 10 of the wall 9 of the housing 8, said clamping member 14 having angularly projected extensions 15 at the opposite ends thereof to which links 16 are pivotally attached. The links 16 have links 17 pivotally attached thereto and said links 17 in turn are pivotally attached by pivots 18 to the spaced walls 8' of the housing 8. The clamping member 14 has related thereto an operating lever 19 which is pivoted within the housing 8 by a pivot element 20, said operating lever being provided with a handle portion 19a and a cam portion 19b which contacts with the clamping member 14, as is shown in Figs. 2 and 3. It is to be noted that the irregularly shaped faces 10 and 14a of the wall 8 of the housing 7 and the chain clamping member 14, respectively, are shaped so that a portion of the chain 11 will be closely gripped between said irregularly shaped faces when the chain clamping member 14 is in its chain clamping position, as is shown in Fig. 2. As a result of this situation there will be no slippage of the chain with respect to the housing 8 when the chain is in a clamped position.

In the use of the mechanism of the present invention the bit A' of the electric drill A is arranged at the place where a hole is to be drilled in a member, the member 21, for instance. The hook 13 is then caused to engage a stationary part of the structure on which work is being done, Fig. 1 showing said hook engaging the member 21 in which a hole is to be drilled, the operating lever 19 first having been moved to the position in which it is shown in Fig. 3 so that the sprocket chain 11 may move freely through the housing 8 of the take-up mechanism and said housing 8 being moved downwardly of the sprocket chain until said sprocket chain is taut. The operating lever is then moved to the position in which it is shown in Fig. 1 so as to cause the cam portion 19b of said operat-

ing lever to lock the chain and the housing 8 together whereupon the mechanism is ready for use in drilling a hole in the member 21.

By referring to Figs. 1 and 5 it will be noted that angularly extended, inturned extensions 22 are formed on the spaced side wall 8' of the housing 8 of the take-up mechanism 7 at the bottoms thereof. These extensions abut against each other at their inner edges, as is shown to good advantage in Fig. 5, and they serve to brace said side walls so as to prevent relative inward movement thereof. Also, at the upper ends of the spaced, side walls of the housing 8 of the take-up mechanism 7, said side walls are provided with portions 23 which are bent inwardly slightly and which frictionally grip the operating lever 19 so as to retain said operating lever in its elevated, chain-clamping position shown in Fig. 2.

I claim:

1. A take-up mechanism for a tool supporting means comprising a tool having an extended part, a lever pivotally attached to said extended part of said tool, a head pivotally attached to said lever, a rotatable member supported by said head, and a flexible element operating over said rotatable member, said take-up mechanism comprising a housing within which an end portion of said flexible element is attached and through which another portion of said flexible element extends, and means forming part of said take-up mechanism for clamping and releasing said other portion of said flexible element with respect to said housing, said means comprising a clamping member movable toward and from a wall of said housing for clamping a portion of said flexible element between said clamping member and said wall of said housing, and for releasing said portion of said flexible element for movement relative to said clamping member and said wall of said housing, and means for moving said clamping member comprising a lever pivoted to said housing and having a cam portion which engages and moves said clamping member on movement of said lever.

2. A take-up mechanism for a tool supporting means comprising a tool having an extended part, a lever pivotally attached to said extended part of said tool, a head pivotally attached to said lever, a rotatable member supported by said head, and a flexible element operating over said rotatable member, said take-up mechanism comprising a housing within which an end portion of said flexible element is attached and through which another portion of said flexible element extends, and means forming part of said take-up mechanism for clamping and releasing said other portion of said flexible element with respect to said housing, said means comprising a clamping member movable toward and from a wall of said housing for clamping a portion of said flexible element between said clamping member and said wall of said housing, and for releasing said portion of said flexible element for movement relative to said clamping member and said wall of said housing, linkage for supporting said clamping member for movement, and means for moving said clamping member comprising a lever pivoted to said housing and having a cam portion which engages and moves said clamping member on movement of said lever.

3. A take-up mechanism for a tool supporting means comprising a tool having an extended part, a lever pivotally attached to said extended part of said tool, a head pivotally attached to said lever, a rotatable member supported by said head, and a flexible element operating over said rotatable member, said take-up mechanism comprising a housing within which an end portion of said flexible element is attached and through which another portion of said flexible element extends, and means forming part of said take-up mechanism for clamping and releasing said other portion of said flexible element with respect to said housing, said means comprising a clamping member movable toward and from a wall of said housing for clamping a portion of said flexible element between said clamping member and said wall of said housing, and for releasing said portion of said flexible element for movement relative to said clamping member and said wall of said housing, said clamping member and said wall of said housing being provided with faces so shaped as to facilitate gripping said portion of said flexible element therebetween.

GEORGE W. SCHAFFER.

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