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DRILL RIG

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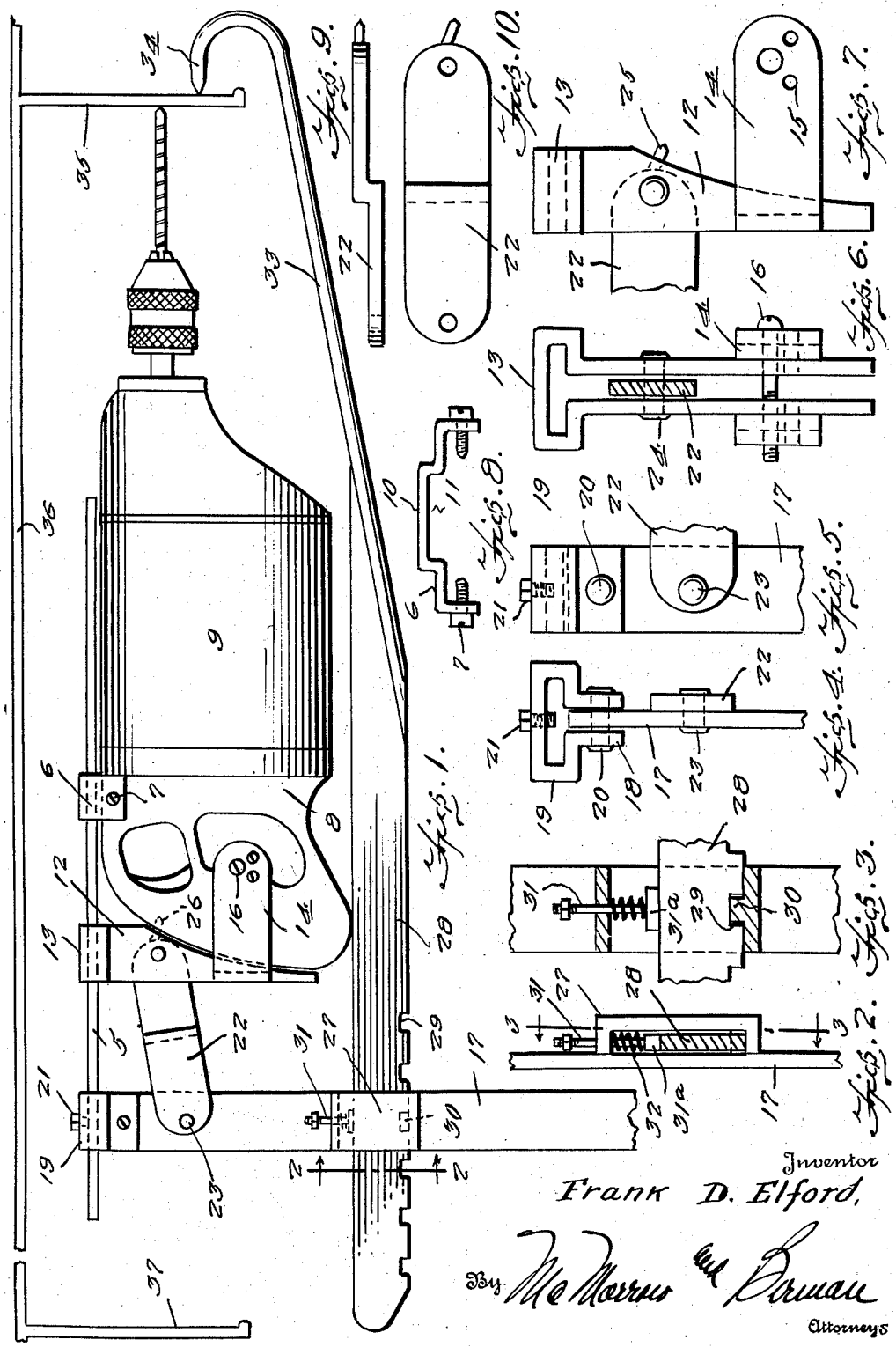


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

Fig. 9.

Fig. 10.

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DRILL RIG

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3 Claims. (Cl. 77—7)

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The present invention relates to new and useful improvements in portable drills and more particularly to an attachment for the drill in the form of a drill rig adapted for increasing the usefulness thereof.

The invention is designated primarily for use in ship construction or other work where a drill is desired for boring holes in overhead beams, and the invention has for its object to provide a drill rig by means of which the drill may be supported in a position for drilling the holes in the beams with a minimum of effort and exertion required.

More specifically, the invention embodies the provision of a rail from which the drill is suspended and slidably mounted thereon together with means for pressing the drill against a beam in which the holes are to be drilled and including a lever pivoted to the rail and connected to the handle of the drill for moving the drill forwardly during the drilling operation.

A further object of the invention is to provide a drilling rig of this character of simple and practical construction, which is strong and durable, which may be easily and quickly attached to a conventional form of electric drill and which otherwise is well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a side elevational view.

Figure 2 is a sectional view taken substantially on a line 2—2 of Figure 1.

Figure 3 is a sectional view taken substantially on a line 3—3 of Figure 2.

Figure 4 is a fragmentary end elevational view of the upper end of the lever.

Figure 5 is a side elevational view thereof.

Figure 6 is an end elevational view of the clip adapted for attaching the handle of the drill to the supporting rail and with the link connecting the lever with the clip shown in section.

Figure 7 is a side elevational view thereof.

Figure 8 is an end elevational view of the clip slidably supporting the drill on the rail.

Figure 9 is a top plan view of the link connecting the lever with the clip for the handle of the drill, and

Figure 10 is a side elevational view thereof.

Referring now to the drawings in detail wherein for the purpose of illustration I have

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disclosed a preferred embodiment of the invention, the numeral 5 designates a rail of rectangular shape in cross-section and on which an inverted substantially U-shaped clip 6 is slidably mounted, the legs of the clip having screws 7 freely inserted therethrough for threaded engagement with the opposite sides of the handle 8 of a portable electric drill 9.

The clip 6 slidably supports the drill on the rail 5 and the central portion of the clip is offset as indicated at 10 to provide a recess 11 in its underside to snugly receive the edges of the rail 5 during sliding movement of the clip and to prevent lateral play of the drill on the rail.

A second clip 12 of substantially inverted U-shaped formation has its upper portion formed with a substantially T-head 13 in which the rail 5 is slidably received, the legs of the clip 12 extending downwardly behind the handle 8 and have arms 14 welded or otherwise suitably secured to the legs and projecting forwardly at opposite side of the handle 8 and provided with openings 15 adapted for selectively receiving bolts or screws 16 for attaching the front ends of the arms to the handle.

A lever 17 has its upper end pivoted between the legs 18 of a substantially U-shaped clip 19 by means of a pin 20, the clip 19 being slidably mounted on the rail 5 and secured in longitudinally adjusted position thereon by means of a set screw 21.

A link 22 has its rear end pivoted to the upper portion of the lever by means of a pin 23 and extends forwardly for pivotal connection between the legs of the clip 12 by means of a pin 24. The front end of the link 22 is formed with a downwardly inclined pin 25 adapted for positioning in a recess 26 formed in the upper rear end of the handle 8.

To one side of the lever 17 below the link 22 is welded or otherwise secured a bracket 27 in which a rack bar 28 is slidably received, the rack bar having longitudinally spaced notches 29 in its lower edge adapted for engaging a lug 30 formed in the bottom of the bracket 27.

A plunger 31 is slidably mounted in the top of the bracket 27 having a head 32 on its lower end in engagement with the upper edge of the rack bar 28 and yieldably urged into engagement with the rack bar for exerting downward pressure thereon by means of a coil spring 32 whereby to retain the lug 30 in one of the notches 29 of the rack bar.

The front end of the rack bar 28 terminates in an upwardly inclined rod 33 having a hook

34 at its front end, the hook being adapted to engage a beam 35 extending downwardly from a deck head or similar structure 36.

By adjusting the rack bar with the hook 34 of the rack bar in clamping engagement with the beam 35 the drill 9 will be supported in a position for drilling holes in the beam 35, a forward pressure being exerted on the drill by a rearward movement of the lower end of the lever 17.

Where the decking 36 is formed with additional beams such as indicated at 37, sufficiently close to the beam 35 to permit the rear end of the rail 5 to abut the beam 37, the rack bar 28 and hook 34 are not required and may be removed and by loosening the set screw 21 the rear end of the rail 5 may be slid outward in abutting engagement with a beam 37 and in operation the drill slides forwardly on the rail by means of the sliding clips 6 and 12. The pin 25 engaging the rear edge of the handle 8 of the drill prevents pivotal movement of the drill on the screws 7 of the clip 6.

Accordingly, either the hook 34 or the rear end of the rail 5 may be used interchangeably for pressing the drill against the beam 35 during the drilling operation.

The rail 5 may be easily removed from the clip 6, 12 and 19 by releasing the set screw 21 and the clips 6 and 12 may also be quickly detached from the handle 8 of the drill for interchangeable use with other drills, when desired.

It is believed that the details of construction, manner of operation and advantages of the device will be readily understood from the foregoing without further detailed explanation.

Having thus described the invention, what I claim is:

1. In an attachment for an electric drill having a motor housing, a drill-holding chuck and a hand grip, the combination which comprises a longitudinally extending rail positioned parallel to the axis of said drill-holding chuck, a clip slidably attaching the rail to the housing through the handle thereof, a depending lever suspended from said rail, a clip pivotally and adjustably mounting the lever on the rail, another clip attached to the hand grip of the housing having a socket in the upper end slidable over the rail, and a link pivotally connecting the lever to the clip on the hand grip wherein forward movement of the lower end of the lever moves the drill on the rail.

2. In an attachment for an electric drill having a motor housing, a drill-holding chuck and a hand grip, the combination which comprises a longitudinally extending rail positioned parallel to the axis of said drill-holding chuck, a clip slidably attaching the rail to the housing through the handle thereof, a depending lever suspended from said rail, a clip pivotally and adjustably mounting the lever on the rail, another clip attached to the hand grip of the housing having a socket in the upper end slidable over the rail, a link pivotally connecting the lever to the clip on the hand grip wherein movement of the lower end of the lever moves the drill on the rail, a rack bar having a hook on one end adapted to extend beyond the end of the drill with the rack bar extending through a socket in the lever, said rack bar having notches therein, and a spring pin urging said rack bar toward a projection in the socket of the lever to hold the bar with one of the notches thereof on said projection.

3. In an attachment for an electric drill having a motor housing, a drill-holding chuck, and a hand grip, the combination which comprises a horizontally extending rail positioned parallel to the axis of said drill-holding chuck, a clip slidably attaching the rail to the housing through the handle thereof, a depending lever suspended from said rail positioned beyond one end of the housing and aligned therewith, means pivotally and adjustably mounting the upper end of the lever on the rail, a socket fixedly mounted on the hand grip of the housing through which the rail extends, a link pivotally connecting the lever to the socket wherein movement of the lower end of the lever slides the drill and motor housing along the rail, a rack bar having a hook on one end adapted to extend beyond the end of the drill with the rack bar extending through a socket in the lever, said rack bar having notches therein, and a spring pin positioned in the socket in the lever urging said rack bar toward a projection in the socket of the lever to hold the bar with one of the notches therein in registering relation with said projection.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
595,896	Van Dusen et al.	Dec. 21, 1897
975,031	Greene	Nov. 8, 1910
1,486,933	Stoltz et al.	Mar. 18, 1924