J. ROBB & E. S. LYONS.

HAND DRILL.

APPLICATION FILED OCT. 6, 1917.

1,272,108.

Patented July 9, 1918.

3 SHEETS—SHEET 1.

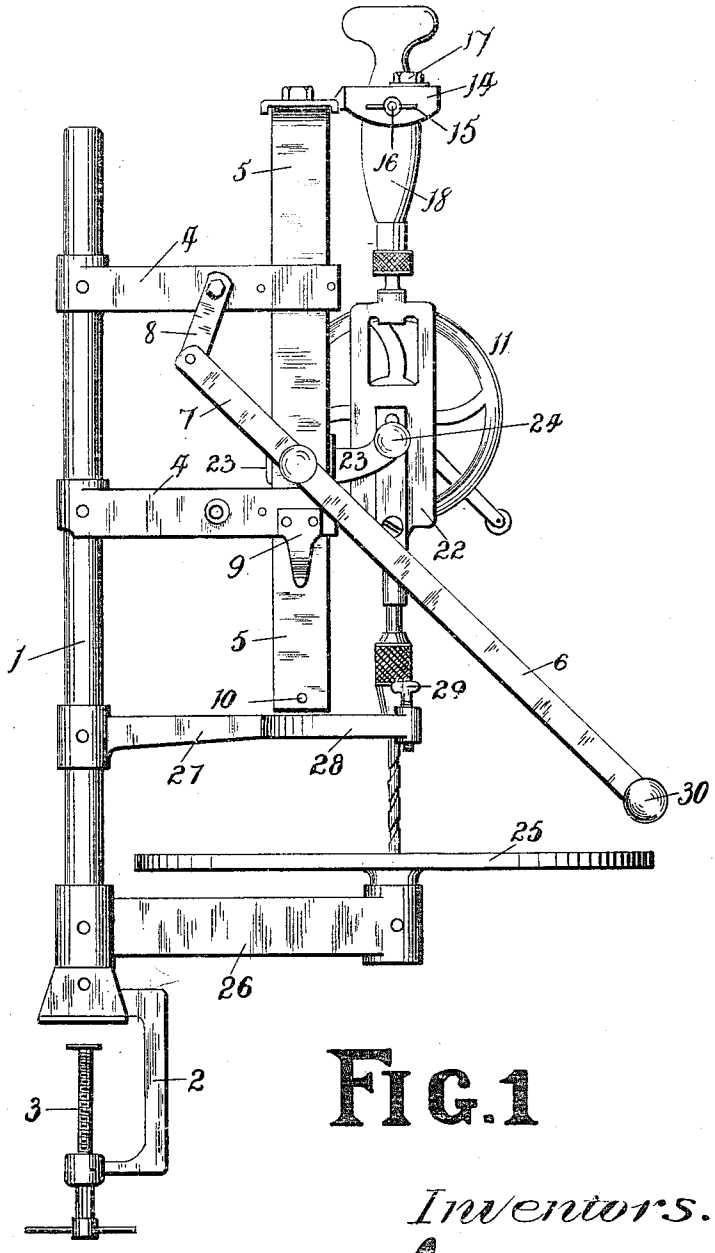


FIG. 1

Inventors.

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3 SHEETS—SHEET 2.

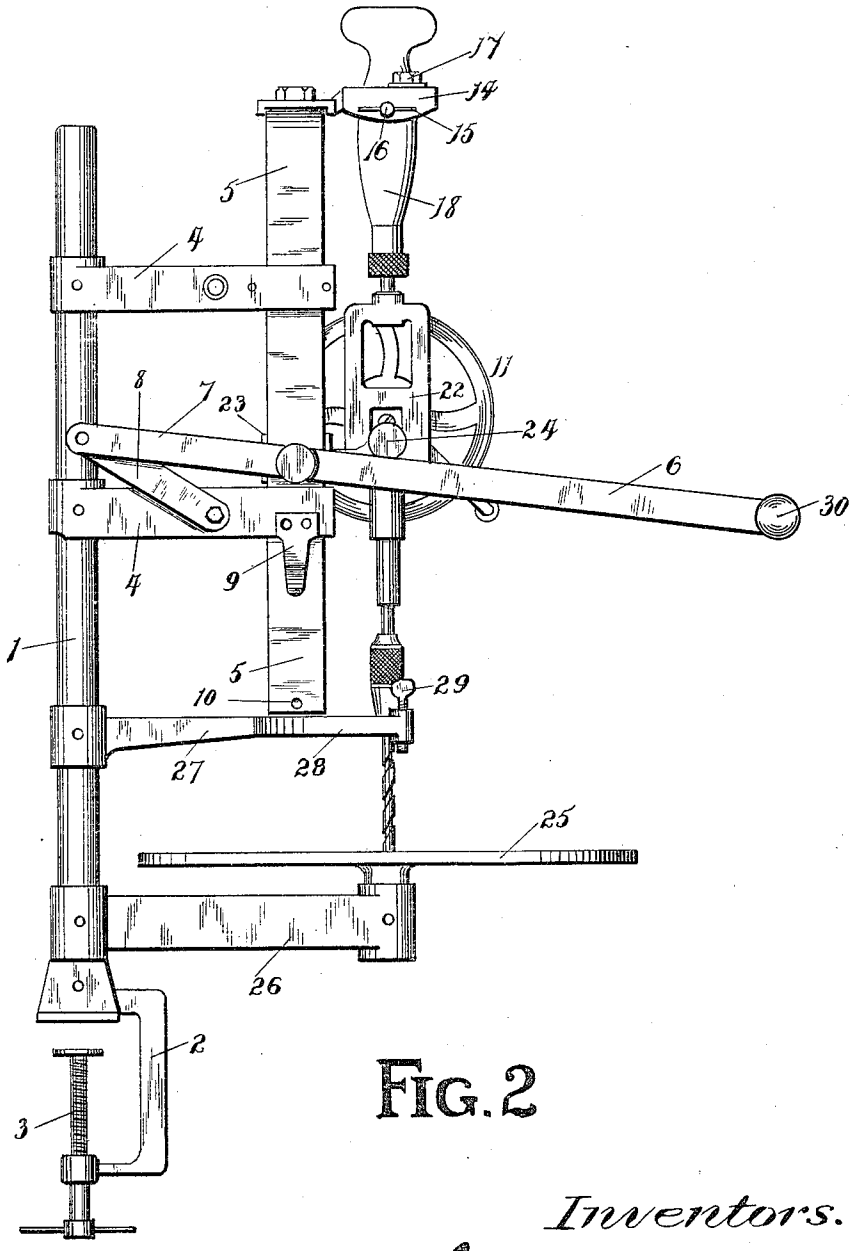


FIG. 2

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3 SHEETS—SHEET 3.

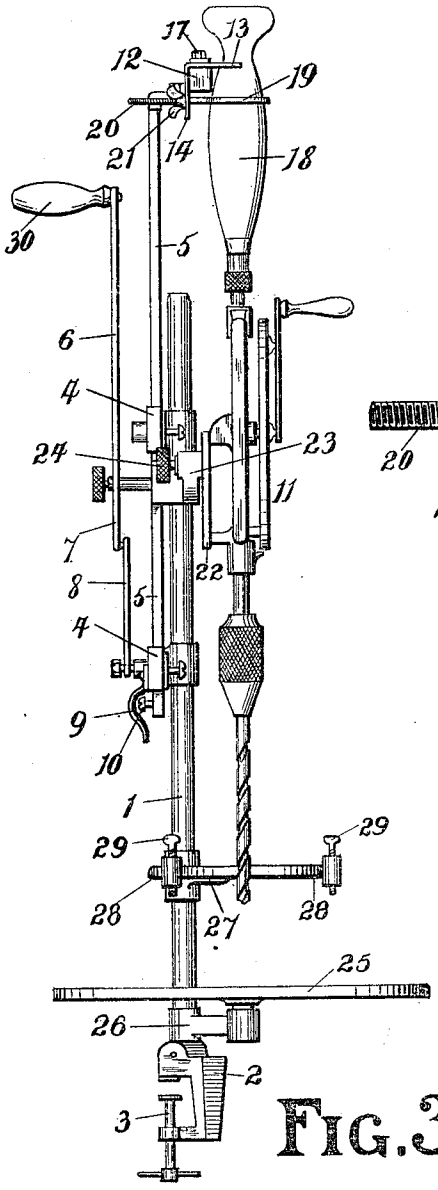


FIG. 3

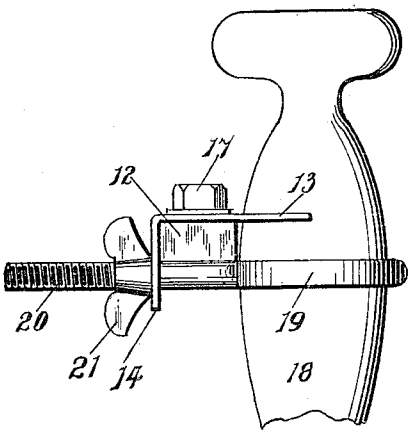


FIG. 4

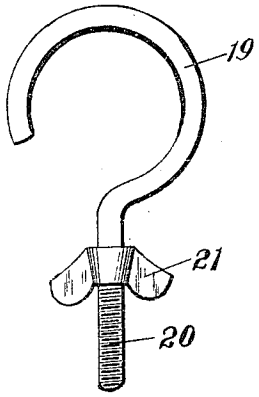


FIG. 5

Inventors.

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UNITED STATES PATENT OFFICE.

JOHN ROBB AND EDGAR SAMUEL LYONS, OF TORONTO, ONTARIO, CANADA.

HAND-DRILL.

1,272,108. Specification of Letters Patent. Patented July 9, 1918.

Application filed October 6, 1917. Serial No. 195,182.

To all whom it may concern:

Be it known that we, JOHN ROBB and EDGAR SAMUEL LYONS, both subjects of the King of Great Britain, residing at the city of Toronto, in the county of York and Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Hand-Drills; and we hereby declare that the following is a full, clear, and exact description of the same.

Our invention relates to improvements in hand-drills, and more particularly to certain features which are incorporated with, and form a functional part of, the frame upon which the drill is removably mounted.

The object of our invention is to provide improved means, through which the position of the drill and its carrying frame is regulated, both horizontally and vertically, and the vertical throw of the feed-lever is controlled to meet certain restrictions.

To that end, our invention consists, broadly, of a vertical cylindrical post, attachable to a stationary base, stationary twin-arms, horizontally and vertically adjustable upon the post, a carrying bar vertically slidable upon the twin-arms, a feed-lever pivoted upon the carrying bar, and having its inner arm loosely linked to one of the stationary twin-arms, and means for removably attaching the drill to the carrying bar.

Our invention further consists of certain details of construction, which will be hereinafter fully outlined, and set forth in the claims.

In the drawings:—

Figures 1 and 2, are similar side elevations of the drill, illustrating the different connections of the feed lever with each of the stationary twin-arms upon the frame.

Fig. 3, is a front elevation of the drill;

Fig. 4, is an enlarged detached detail view of the means for securing the upper end of the drill to the carrying bar; and

Fig. 5, is a similar detached detail view of the tightening hook.

Referring to the drawings, 1 is the vertical cylindrical post, provided at its lower end with the C clamp frame 2, revoluble upon the post 1, and carrying the screw clamp 3 for securing the post 1 to its stationary base.

4, 4, are stationary twin-arms, journaled upon the cylindrical post 1, and adapted for horizontal and vertical adjustment thereon. 5 is a carrying bar, vertically slidable in sockets upon the stationary twin-arms 4, 4.

The feed-lever has the long manipulating arm 6 and the shorter inner arm 7, and is in pivotal engagement with the carrying arm 5 at a point between the stationary twin-arms 4, 4.

The inner end of the arm 7 of the feed-lever carries a loose link 8, which may be in loose engagement with either one of the stationary twin-arms 4, 4, for reasons to be later explained.

9 is a curved leaf-spring, depending from the lower twin-arm 4, for holding engagement with the lug 10 upon the lower end of the carrying bar 5, when such bar is at the limit of its upward vertical travel.

The drill 11, herein shown, is one of a number of well-known types in present use, and is removably secured to the vertically-slidable carrying bar 5, in the following manner:—The bracket 12 (see Figs. 3 and 4) is stationary with the upper end of the carrying bar 5. Upon this bracket is mounted the angular plate having the horizontal concaved arm 13 and the vertical arm 14, with the longitudinal slot 15, adapted for the reception of the headed pin 16, by means of which the plate can be adjusted horizontally as desired, and held in such position by the clamping screw 17. The upper handle 18 of the drill 11, when in position, rests in the concaved arm 13 of the angular plate. To hold the handle firmly in such position, the hook 19, with the screw-threaded shank 20, embraces the handle, and by manipulating the thumb-nut 21, a tension is exerted upon the hook and angular plate in opposite directions, causing the drill-handle to be tightly held in the concave arm 13.

The other point of attachment is upon the frame 22 of the drill. A bracket 23, stationary upon the carrying arm 5, is rigidly held upon the drill-frame 22 by the set-screw 24.

Below the drill and its carrying frame is the circular revoluble table 25, mounted upon the outer end of the arm 26, which is revoluble upon the vertical post 1 and vertically adjustable upon the same.

The object to be drilled is carried upon the table 25, and may be gripped thereon by means of the arm 27, carried upon the vertical post 1 and horizontally and vertically

adjustable thereon. The outer end of this arm 27 carries the two diverging branches 28, 28, each provided with a vertical set-screw 29, by means of which the object is gripped and held upon the table 25.

From the foregoing description of parts, it will readily be seen that the method of adjustment is simple and effective. A single vertical cylindrical post is employed, which carries the stationary twin-arms 4, 4, the arm 26, upon which is mounted the work table 25, and the gripping arm 27, 28, all of which parts are both horizontally and vertically adjustable upon a common post, and can be rigidly set in any desired position thereon.

Another adjustment which is very advantageous in the drilling of objects of varying dimensions, is the link feature of the feed-lever. As seen in Fig. 1, the link 8 is loosely connected to the upper stationary twin-arm 4, and when the drill has been fed to its lowest position, the free end of the feed-lever is in proximity to the work table. This is only possible where the object upon the table is of comparatively small dimensions. When the reverse is true, the link 8 can be shifted to loose connection with the lower stationary twin-arm 4, as seen in Fig. 2, and when the drill has been fed to its lowest position, the free end of the feed-lever is considerably higher in position, thus giving ample space for drilling work upon an object of considerably larger dimensions.

When it is desired to dispense with the frame, and work the drill entirely by hand, it is only necessary to detach the drill from the frame, remove the handle 30 from the feed lever, and secure it in a socket in the frame, thus giving the drill an additional handle to hold it to its work.

Having thus fully described the nature of our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. A drill frame comprising a vertical cylindrical post attachable to a separate stationary base, stationary twin-arms horizontally and vertically adjustable upon the post, a carrying bar vertically slidable upon the twin-arms, a feed-lever pivoted upon the carrying bar and loosely linked to one of the stationary twin-arms, and means for removably attaching the drill to the carrying bar.

2. A drill frame comprising a vertical cylindrical post attachable to a stationary base, separate stationary twin-arms horizontally and independently vertically adjustable upon the post, a carrying bar vertically slidable upon the twin arms, a feed lever pivoted upon the carrying bar and loosely linked to one of the stationary twin-arms, and means for removably attaching the drill to the carrying bar.

3. A drill frame comprising a vertical cylindrical post attachable to a stationary base, separate stationary twin-arms horizontally and vertically adjustable upon the post, a carrying bar vertically slidable upon the twin-arms, a feed-lever pivoted upon the carrying bar and interchangeably linked to either of the stationary twin-arms, and means for removably attaching the drill to the carrying bar.

4. A drill frame comprising a revoluble vertical cylindrical post attachable to a stationary base, separate stationary twin-arms horizontally and independently vertically adjustable upon the post, a carrying bar vertically slidable upon the twin-arms, a feed lever pivoted upon the carrying bar, and loosely linked interchangeably to either of the stationary twin-arms, and means for removably attaching the drill to the carrying bar.

Toronto, September 25th, 1917.

JOHN ROBB.
EDGAR SAMUEL LYONS.

Signed in the presence of—
EDWARD S. BERNSTEIN,
W. T. MILLER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."