Nov. 18, 1924. 1,515,924

D. BLAIR

DRILLING MACHINE

Filed Oct. 6, 1923

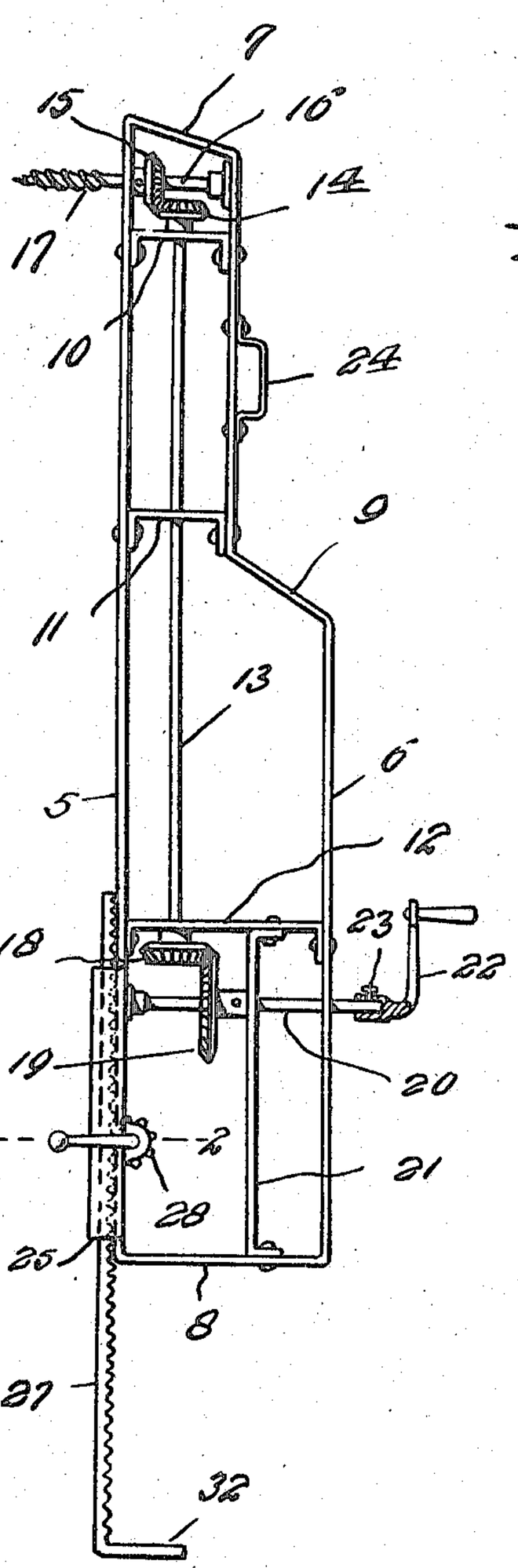
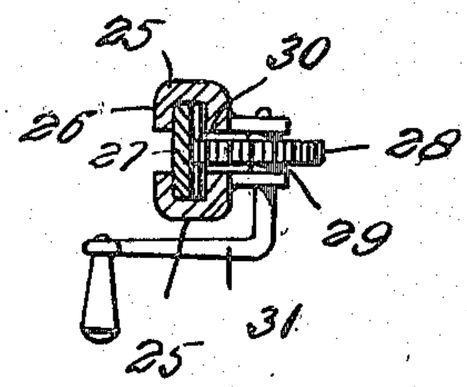


Fig. 1.

Fig. 2.



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UNITED STATES PATENT OFFICE.

DINK BLAIR, OF DENISON, TEXAS.

DRILLING MACHINE.

Application filed October 6, 1923. Serial No. 666,994.

To all whom it may concern:

Be it known that I, DINK BLAIR, citizen of the United States, residing at Denison, in the county of Grayson and State of Texas, have invented certain new and useful Improvements in Drilling Machines, of which the following is a specification.

This invention relates to certain new and useful improvements in drilling machines and has particular reference to a drilling machine specifically adapted for drilling in restricted places, such as drilling holes in the sills of railway cars preparatory to splicing the same.

The primary object of the invention is to provide a drilling machine capable of use in restricted places and embracing the desired qualities of simplicity, efficiency and durability of construction.

Another object of the invention is to provide a drilling machine embodying a simple and durable frame supporting the drill and driving mechanism and provided with means for adjustably regulating the height at which the drill is supported above the ground or floor, the driving mechanism embodying means at a remote point from the drill for facilitating application of power thereto.

Other objects will appear as the nature of the invention is better understood, and the same consists in the novel form, combination, and arrangement of parts, hereinafter more fully described, shown in the accompanying drawing, and claimed.

In the drawing, wherein like reference characters designate corresponding parts in the two views:

Figure 1 is a side elevational view of a drilling machine constructed in accordance with the present invention, and

Figure 2 is an enlarged horizontal sectional view, taken substantially upon the line 2—2 of Figure 1.

Referring more in detail to the drawing, the present invention embodies a rigid open elongated frame, suitably constructed of metal and embodying relatively long front, back, top and bottom frame members, 5, 6, 7, and 8 respectively, the front and back frame members 5 and 6 being relatively long, and the upper portion of the frame being relatively narrower than the lower portion thereof, by inwardly offsetting the intermediate portion of the back frame member 6 as at 9, and forming the top wall 7 shorter than the bottom wall or frame member 8, as shown clearly in Figure 1.

The front and back frame members 5 and 6 are rigidly connected at suitable intervals by a plurality of horizontal connecting braces 10, 11 and 12, the first two mentioned ones of which connect the front and back frame members at the upper narrow portion of the same, and the relating brace 12 being arranged to connect the frame members 5 and 6 at the lower wider portion thereof. The ends of the braces 11 may be downturned and riveted in the inner sides of the frame members 5 and 6 as shown, and a vertical longitudinal shaft 13 is arranged between the frame members 5 and 6 and journalled in the braces 10, 11 and 12. The upper end of the shaft 13 projects above the upper brace 10 and has a bevelled gear 14 fixed thereon, in mesh with another bevelled gear 15 that is fixed upon a transverse shaft 16 journalled in the frame members 5 and 6 and suitably adapted for reception of a metal drill 17 that projects forwardly from the front frame member 5. The shaft 13 projects through the lower brace 12 and has a further bevelled gear 18 secured on the lower end and held in mesh with a relatively larger bevelled gear 19 fixed upon a transverse drive shaft 20 that is journalled in the frame members 5 and 6 in a horizontal position, and also in a vertical brace member 21 that connects the brace 12 with the bottom frame member 8 rearwardly of the gear 19. The rear end of the shaft 20 projects through the frame member 6 and is adapted at its projecting rear end for reception of a pulley, gear or handle by means of which power may be applied thereto. A handle is shown applied to the projecting end of the shaft 20 as at 22, by means of a set screw 23 carried by said handle and threaded through one wall of the socket of said handle into which the ends of the shaft 40 is fitted.

In order to permit steadying of the device when operatively disposed in a vertical position as shown in Figure 1, the upper portion of the rear frame member 6 may be provided with a handle as at 24. The lower portion of the front frame member 5 is provided with forwardly projecting flanges 25, the free edge portions of which are inturned as at 26, for forming guides in which is longitudinally slidable a rack bar 27, that is disposed parallel with the frame member

5 and against the under side thereof, as shown clearly in the two views, the teeth being provided upon the inner face of the rack bar 27 in position to be engaged by the teeth of a pinion 28 suitably journalled in ears 29 projecting from the rear side of the frame member 5 at opposite sides of the slot 30 in the latter through which the pinion 28 projects. The shaft of the pinion 28 is provided with a suitable hand crank 31 whereby the same may be manually rotated, and the lower end of the rack bar 27 is provided with a rigid foot 32 adapted to engage the floor or ground.

In operation, the foot 32 is placed into engagement with the floor or ground and the handle 31 is rotated, so as to cause vertical movement of the frame and parts carried thereby in side elevation. Any suitable means may be provided for locking the pinion 28 against turning when the same has been adjusted to the desired height. When this takes place, it is of course to be understood, that the frame is to be positioned substantially in a vertical position as shown in Figure 1, so that the narrow upper portion of the frame may be readily positioned in constricted places for utilizing the drill which is rotated through the gearing described, by supplying power in a suitable manner to the shaft 20, the device being started by the operator grasping in one hand the handle 24.

From the foregoing description it is believed that the construction and operation as well as the advantages of the invention will be readily understood and appreciated by those skilled in the art.

Minor changes may be made without departing from the spirit and scope of the invention as claimed.

What I claim as new is:

A drill comprising an elongated frame narrower at one end than at the other, said frame being pointed at its narrower end and at the side edge thereof, a transverse drill carrying shaft journalled in the frame at the narrower end thereof, means carried by the frame and disposed longitudinally thereof for rotating the drill carrying shaft, said frame being provided at its larger end portion and the same side edge at which the point is located with guide flanges, a rack bar longitudinally slidable in said guide flanges and disposed in alignment with the pointed end of the frame, and a pinion journalled upon the frame and engaging the teeth of the rack bar.

In testimony whereof I affix my signature.

DINK BLAIR.