

G. FIORILLO.
BORING MACHINE.
APPLICATION FILED JULY 18, 1922.

1,434,946.

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Fig. 1

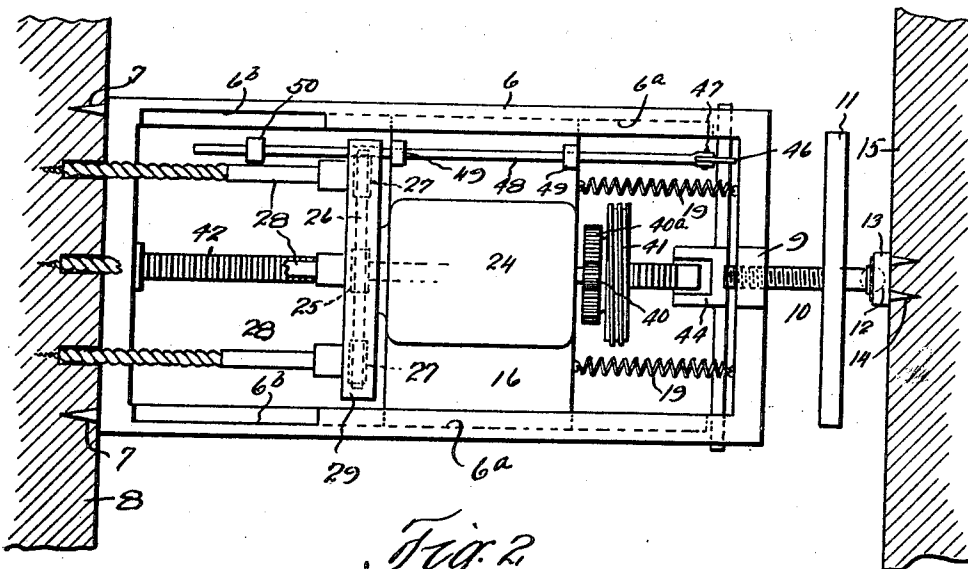
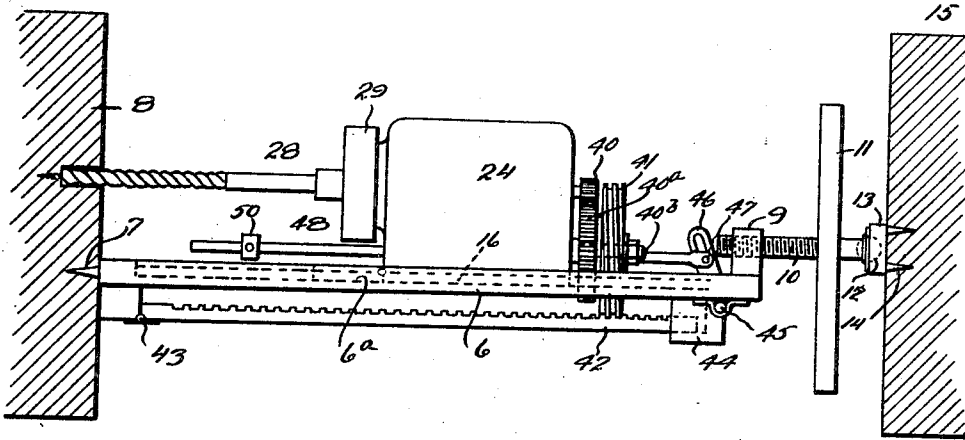


Fig. 2

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UNITED STATES PATENT OFFICE.

GIACOMO FIORILLO, OF CLEVELAND, OHIO.

BORING MACHINE.

Application filed July 18, 1922. Serial No. 575,793.

To all whom it may concern:

Be it known that I, GIACOMO FIORILLO, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Boring Machines, of which the following is a specification.

This invention relates to boring machines, and especially to boring machines suitable for overhead work, as for example those used by electricians and others through joists or in limited spaces where it is not convenient to use a brace.

In the form shown, three bits are provided, driven by an electric motor, and one object of the invention is to provide means for stopping the forward travel of the boring device when it reaches the limit of its forward movement. A further object of the invention is to provide improved means for feeding the bit or bits forwardly. Further advantages will be apparent from the following description.

In the accompanying drawings Fig. 1 is a side elevation of the machine. Fig. 2 is a top plan view.

Referring specifically to the drawing 6 indicates a frame consisting of two side bars and two ends bars, the front end of the frame having teeth 7 adapted to be forced into a joist or other piece of work 8. The cross bar at the rear end of the frame has a tapped boss 9 through which extends a screw 10 which may be turned by a wheel 11 fast thereon. The screw has a ball head 12 which works in a socket in a block 13 having teeth 14 adapted to be forced into another joist 15, the frame being of such length that the machine may be placed between two joists and fastened thereto by manipulation of the screw, thereby supporting the frame in position between the joists.

Upon the frame is mounted a sliding carriage or plate 16, the edges of which slide in grooves indicated at 6^a in the side bars 6. At one end of the bars the upper wall of each groove is cut away as indicated at 6^b, so that the plate 16 and the parts carried thereby can be lifted out of the frame when desired. The carriage is normally retracted by springs 19, but may be fed forwardly by means to be described.

Mounted on the carriage is a motor 24, conveniently an electric motor, and the shaft

of this motor carries a sprocket 25 which drives a chain 26 which in turn drives sprockets 27 on the shanks of the auger bits 28, three of which are shown, these bits and transmission devices being supported and enclosed by a suitable housing 29 fixed on the motor frame.

The armature shaft is extended at the rear and is provided with a pinion 40 which meshes with a gear 40^a mounted on the stud 40^b supported by the motor frame, and the gear is formed integral with or made fast to a worm 41 which normally meshes with a rack 42 which is pivoted at its front end to the under side of the frame, as indicated at 43. The rack may be swung up to engage with the worm or it may be dropped to disengage the same. For this purpose the rear end of the rack is held by a bearing 44 which is pivoted at 45 to the under side of the frame, and this bearing is connected to a slotted crank arm 46 which is engaged by pin 47 carried by a rod 48 which works through guides 49 projecting from the carriage plate 16, and the rod is provided near its front end with an adjustable stop collar 50 in position to be struck by the lug 49 at the selected forward limit of travel of the carriage, and it will then act through the crank 46 to swing open the bearing box 44, permitting the rack 42 to drop, and stopping the feed. The springs will then return the carriage to the starting position, and the rack may then be swung up for the next operation.

It will be noted that the electric motor furnishes power for the drive of the bits as well as for the forward feed thereof. The collar 50 will be set at the proper distance to stop the feed at the desired limit of movement. The machine provides a very convenient means for effecting boring operations under the circumstances referred to.

I claim:

1. A boring machine comprising a supporting frame provided with means at its opposite ends for engaging joists or the like, a carriage slidable on the frame, a motor mounted on the carriage, a bit driven by the motor, and means driven by the motor to feed the carriage forwardly.

2. A boring machine comprising a supporting frame provided with means at its opposite ends for engaging joists or the like, a carriage slidable on the frame, a motor mounted on the carriage, a bit driven by the

motor, and means driven by the motor to feed the carriage forwardly, and means actuated by the travel of the carriage to disengage the means for feeding the same.

5 3. A boring machine comprising a supporting frame provided with means at its opposite ends for engaging joists or the like, a carriage slidable on the frame, a motor mounted on the carriage, a bit driven by
10 the motor, and means driven by the motor to feed the carriage forwardly, said means comprising a rack bar supported on the frame and gearing driven by the motor and engaging the rack bar.

15 4. A boring machine comprising a supporting frame provided with means at its opposite ends for engaging joists or the like, a carriage slidable on the frame, a motor mounted on the carriage, a bit driven by
20 the motor, and means driven by the motor to feed the carriage forwardly, said means comprising a rack bar supported on the

frame and gearing driven by the motor and engaging the rack bar, the rack bar being hinged to the frame and adapted to be
25 swung to disengage the same from said gearing.

5. A boring machine comprising a supporting frame, a carriage slidable on the frame, a motor mounted on the carriage, a
30 bit driven by the motor, a rack bar hinged to the frame, gearing between the motor and the rack bar, to feed the carriage forwardly, a swinging support for one end of the rack bar, and a stop device carried on the car-
35 riage and arranged to trip said swinging support and permit the rack bar to drop and disengage itself from said gearing.

In testimony whereof, I affix my signature in presence of two witnesses.

GIACOMO FIORILLO

Witnesses:

JOHN A. BOMMARDT,
BESSIE F. POLLOK.