

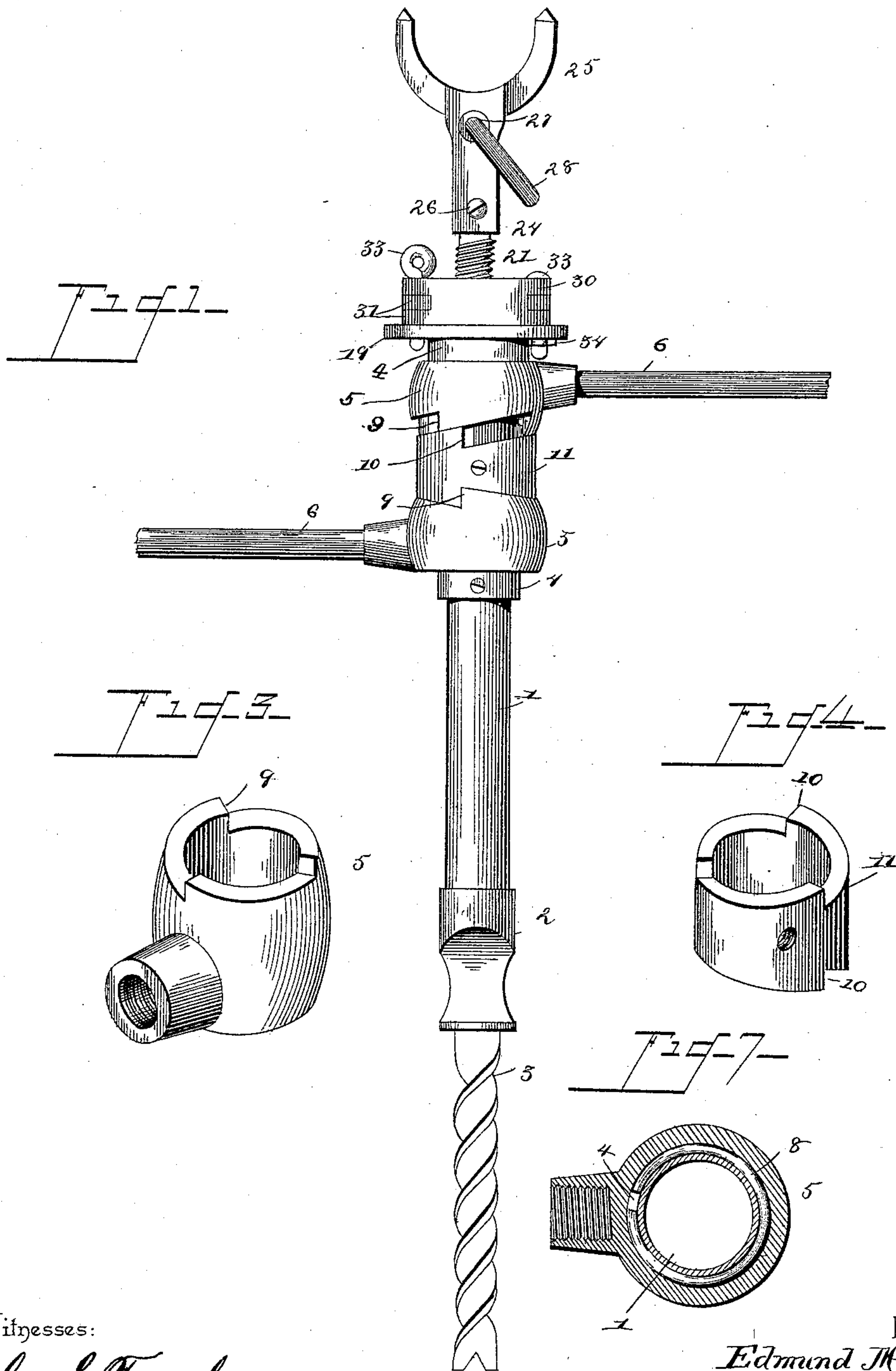
(No Model.)

2 Sheets—Sheet 1.

E. MOSER.
HAND DRILLING MACHINE.

No. 444,122.

Patented Jan. 6, 1891.



Witnesses:

Geo. C. French.
W. S. Duwall.

By *his* Attorneys,

Chas. Snow & Co.

Inventor
Edmund Moser.

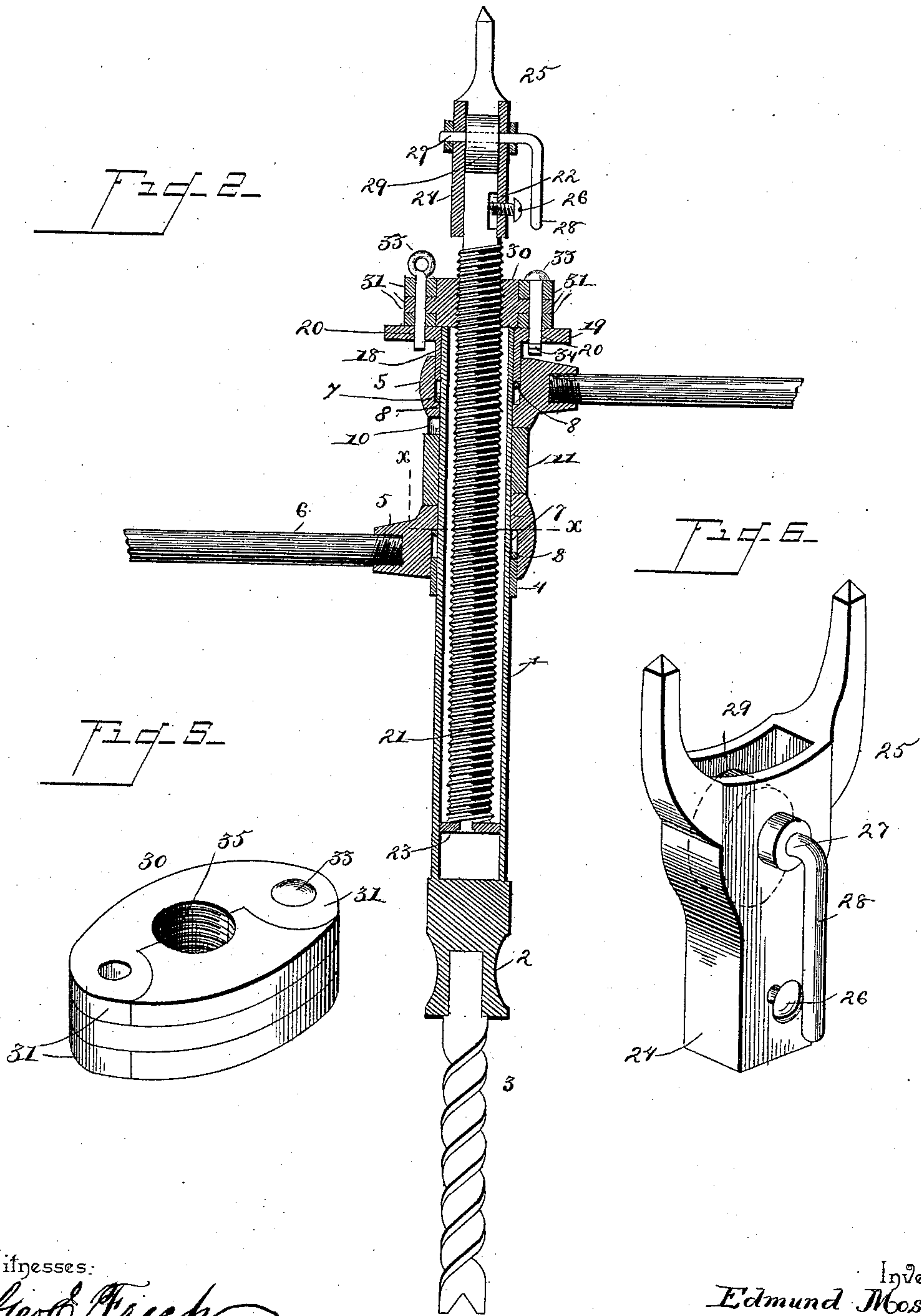
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UNITED STATES PATENT OFFICE.

EDMUND MOSER, OF PITTSBURG, KANSAS.

HAND DRILLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 444,122, dated January 6, 1891.

Application filed May 6, 1890. Serial No. 350,760. (No model.)

To all whom it may concern:

Be it known that I, EDMUND MOSER, a citizen of the United States, residing at Pittsburg, in the county of Crawford and State of Kansas, have invented a new and useful Hand Drilling-Machine, of which the following is a specification.

This invention has relation to hand-drills for drilling in coal or rock.

10 The objects and advantages of the invention, together with the novel features thereof, will hereinafter appear, and be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is an elevation of a drill constructed in accordance with my invention. Fig. 2 is a central vertical section. Fig. 3 is a detail in perspective of one of the ratchet-levers. Fig. 4 is a similar view of the ratchet collar or boss. Fig. 5 is a detail of the clamping-box. Fig. 6 is a detail in perspective of the yoke. Fig. 7 is a detail horizontal section.

Like numerals of reference indicate like parts in all the figures of the drawings.

25 1 represents the hollow drill-tube, to the lower end of which is fixed the socket 2, in which is removably mounted the drill 3. Upon the drill-tube is rigidly secured a tube-encircling collar 11, the opposite edges of which are toothed, said teeth 10 being disposed in the same direction. At each side of the toothed collar there is fixed to the tube a bearing-collar 4, the same being located a short distance from the toothed collar aforesaid.

35 6 designates a pair of drill-operating levers provided at their inner ends with centrally-bored heads 5, a lever being located upon the drill-tube at each side of the toothed collar. The heads have their inner edges provided with teeth 9, oppositely inclined with relation to the teeth of the collar and adapted to engage the same when moved in one direction and ride thereover when moved in an opposite direction. Above the teeth each head is provided with an internal annular recess 7, which receives the bearing-collar adjacent thereto and rides upon the same. Inserted between the bearing-collars and the bottoms of the annular recesses of the heads are split spring-rings 8, which act to retain the ratchet-heads in yielding contact with the teeth of the ratchet-collar. The two bearing-collars

are of similar formation, with the exception that the upper edge of the upper collar is provided with a laterally-disposed elliptical flange 19, provided near its ends with perforations 20.

21 represents the feed-rod, which is screw-threaded throughout its length, with the exception of its extreme upper end, which latter is rectangular and provided with a laterally-disposed recess 22. The lower end of the rod is provided with a loose disk or head 23, and the upper squared end is received by the square socket 24, formed at the lower end of a yoke 25. A set-screw 26 is threaded through a lateral opening in the socket and terminates in the recess and prevents the withdrawal of the feed-rod from the socket, and yet permits of a longitudinal movement of said rod within the socket. A shaft 27 is journaled in the walls of the socket beyond the end of the rod, said shaft being bent at one end to form an operating lever or crank 28, and within the socket provided with a cam or binding disk 29, designed to bind upon the upper end of the feed-screw.

30 represents a boxing for the feed-rod, which boxing is formed in sections of substantially semicircular shape, the ends of the sections terminating in interlocking perforated lugs 31, through which are inserted connecting-pins 33, which enter the holes 20, located at the ends of the plate 19. One of the pins has a transverse opening near its lower end, and through the same is inserted a split pin 34, whereby the boxing is maintained in position upon the yoke. The interior of the box-sections are threaded, as at 35, which coact with the screw-threads of the feed-rod.

The operation of the device is as follows: The cam-shaft of the yoke is operated so as to throw the cam out of working contact with the feed-rod, which latter is threaded entirely within the boxing. The yoke at the end of the rod is now engaged with a prop or post in the mine, so as to hold the drill in position and dispense with a supporting-standard. When this has been accomplished, the cam is thrown into position, so that the same binds against the upper end of the feed-rod, and the device is now ready to be operated, which is accomplished by grasping and simultaneously oscillating the two ratchet-levers. By raising

the levers the same engage opposite teeth of the ratchet-collar, and the drill-tube is turned by a lowering of said levers. At each revolution or movement of the drill-tube it will be apparent that the same is advanced upon the feed-rod, so that the point of the drill is automatically fed downward or forward to its work to the full extent of said feed-rod.

By means of the double set of hand-levers I am enabled to maintain a complete revolution of the drill while in use. Since the drill-tube moves over the feed-rod, it is necessary to hold the latter stationary, and this is done by the cam 29 of the yoke 25.

The object in making the boxing 30 in sections is to allow for the withdrawal of the feed-rod from the drill-tube.

The head 23 at the lower end of the feed-rod acts as a guide to maintain the feed-rod in true position.

Having thus described my invention and its operation, what I claim is—

1. In a drill, the combination, with the drill-tube having opposite bearing-collars and an intermediate collar, the opposite edges of which are provided with ratchet-teeth, of operating-levers arranged at each side of the toothed collar and mounted for revolution upon the tube and encircling the bearing-collars and provided with internal annular recesses for the reception of the bearing-collars, and split spring-rings encircling the tube and located between the bearing-collars and the bottoms of the annular recesses in the lever-heads, substantially as specified.

2. In a drill, the combination, with a drill-tube and means for rotating the same, of a feed-rod threaded in the rear end of the tube and terminating in a reduced portion having

a recess, a yoke having a socket which loosely receives said portion, a pin passed through the wall of the socket and engaging in the recess, and a shaft mounted in the socket beyond the recess and provided with a cam for binding upon the end of the rod, substantially as specified.

3. In a drill, the combination, with a drill-tube terminating in its rear end in a threaded opening, of a feed-rod engaging the threads, a socket loosely mounted upon the rear end of the rod and terminating at its rear end in a U-shaped yoke, means for rotating the tube, and a transverse shaft terminating in a handle and provided with a cam located in the socket and the cam adapted to bind upon the rear end of the rod, substantially as specified.

4. In a drill, the combination, with the drill-tube having at its upper end the boxing 30, formed in sections removably secured together, the interior of the boxing being threaded, of the threaded feed-rod 21, passing through the boxing and incased within the drill-tube, the latter having the drill 3 at the bottom, the upper end of the feed-rod being extended beyond the drill-tube and provided with the yoke to hold the drill in position, the cam on the yoke to bind against the feed-rod, and operating mechanism connected with the drill-tube to move the latter along the feed-rod, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

EDMUND MOSER.

Witnesses:

MATT HAMILTON,
JOHN MALETZ.