(No Model.)

H. C. BURK.

MINING DRILL.

No. 305,791. Patented Sept. 30, 1884.

Fig. 1.

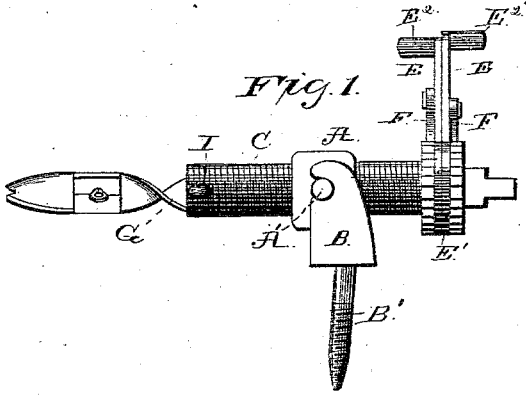


Fig. 2.

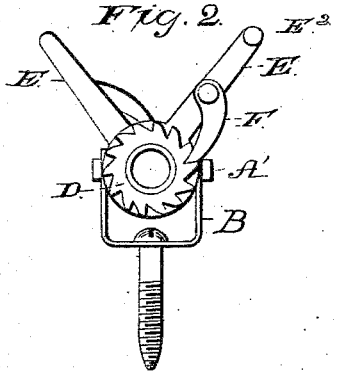


Fig. 4.

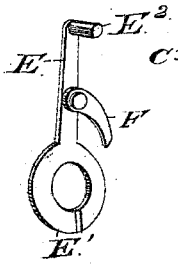


Fig. 3.

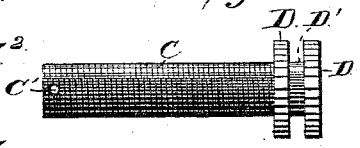
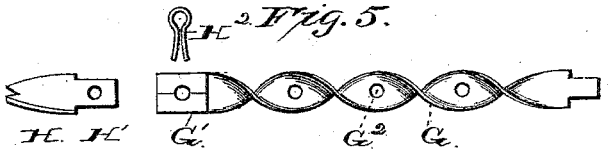


Fig. 5.



WITNESSES
P. B. Murphie
N. A. Clark.

INVENTOR
Hiram C. Burk
By R. S. & A. P. Lacey
Attorney

UNITED STATES PATENT OFFICE.

HIRAM C. BURK, OF CLEVELAND, OHIO.

MINING-DRILL.

SPECIFICATION forming part of Letters Patent No. 305,791, dated September 30, 1884.

Application filed February 18, 1884. (No model.)

To all whom it may concern:

Be it known that I, HIRAM C. BURK, 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 Mining-Drills; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to mining-machines; and it consists in the novel construction, combination, and arrangement of the several parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a side view. Fig. 2 is an end view of my machine. Fig. 3 is a detail view of my feed-screw. Fig. 4 is a detail view of one of the operating-levers. Fig. 5 is a detail view of the drill shaft and bit.

The barrel A is threaded internally and provided with lateral trunnions A′, which are journaled in the bearing-frame B, as shown. This bearing-frame is provided with a pivot screw or pin, B′, whereby it may be supported in any suitable form of frame. The feed-screw C is threaded externally, and turns through the threaded barrel A, as shown. This feed-screw is made hollow its full length, to permit the passage of the drill-shaft, presently described, and is provided near its forward end with an opening, C′, for the purpose hereinafter described. This screw C is provided at or near its rear end with two ratchet-disks, D D, set slightly apart to provide a bearing, D′, for the operating-levers E E. These levers are provided on their inner ends with rings E′, which fit the bearing D′ and serve as a pivot for the levers. The adjacent sides of these levers I call, for convenience of reference, the "inner sides," and the other ones the "outer sides." These inner sides rest close together, as shown in Fig. 1. Handles E^2 are projected laterally from the outer side of each of these levers at or near the swinging ends thereof, as shown. Pawls F are pivoted at one end on the outer side of these levers, and have their points arranged to engage the ratchet-disks. In practice these levers are operated reciprocally by the handles E^2. This gives the screw a continuous revolution, and provides a convenient, easily-operated driving mechanism. I prefer to cast the disk D integral with the feed-screw. This necessitates the splitting of the rings E′, as shown in Fig. 4. Where these disks are made separate from the screw and secured thereto in any suitable manner, this splitting of the ring will not be required.

It is obvious that a single ratchet-wheel of sufficient breadth might be used and the levers arranged on opposite sides thereof, with their pawls pivoted on the inner face of the levers, as will be understood. I prefer, however, the construction shown and before described, as thereby the parts are arranged in compact form and the levers are held by the ratchet-disks.

My feed-screw, it will be seen, supports its operating devices, which simplifies the machine by reducing the framing, as will be appreciated. The drill-shaft G is provided at its forward end with a socket, G′, to receive the stem H′ of the drill-bit H, which is secured in said socket by the spring-pin H^2. The drill-shaft is twisted its full length, so as to carry off the cuttings, and is provided with openings G^2 at various points along its length. In operation this shaft is placed in the feed-screw, and is secured thereto by pin I, passed through hole C′ and any one of the holes G^2 which may be adjusted coincident thereto. This enables the adjustment of the drill-shaft out of the forward end of the screw, so as to vary its length as the hole is being bored, or for any other desired purpose.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The herein-described mining-machine, comprising a threaded barrel journaled laterally in suitable supports, the hollow feed-screw provided with ratchet-rings D D, set slightly apart, providing the intervening smooth bearing, D′, the drill-shaft inserted through and held in said feed-screw and capable of a longi-

tudinal adjustment therethrough, and the levers E, having rings E′, journaled on the bearings D′ and abutted close together and against the opposite ratchet-rings D D, the pawls F F, pivoted on the opposite outer sides of the levers, with their points engaging the ratchet-rings D D, and the handles projected laterally in opposite direction from the outer ends of the levers, all substantially as and for the purposes set forth.

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

HIRAM C. BURK.

Witnesses:

E. J. HART,

J. A. SMITH.