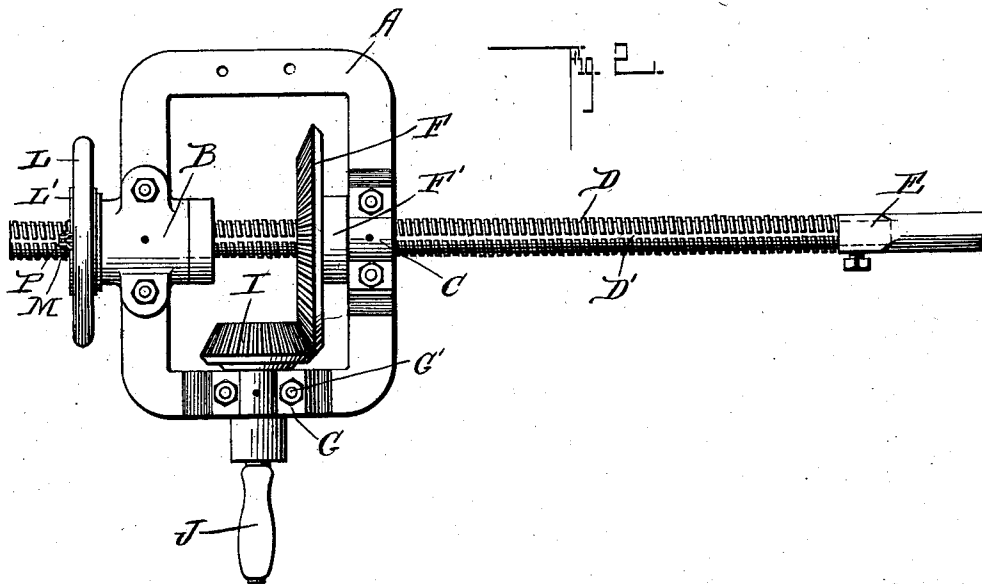
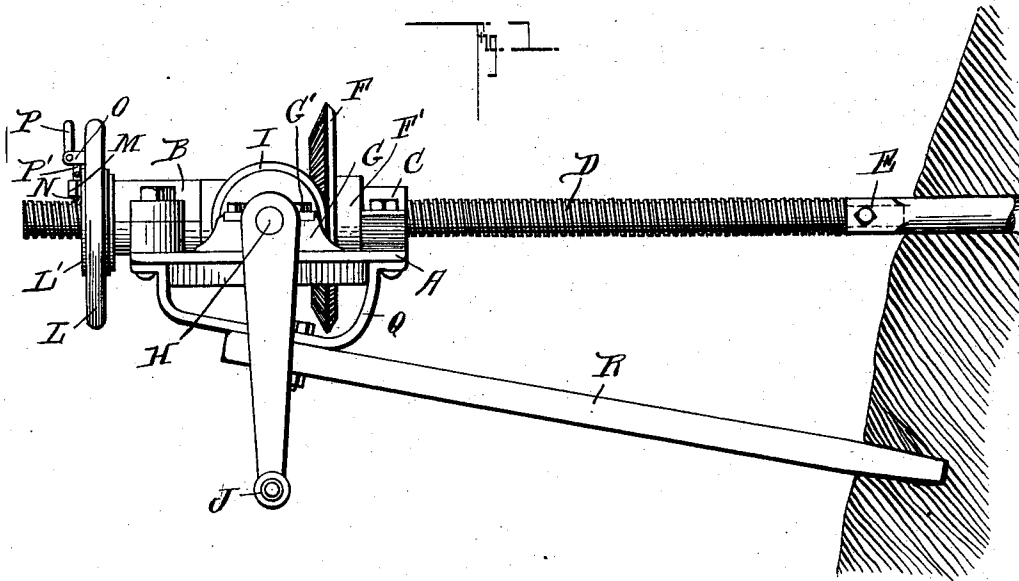


T. F. CARROLL.
 ROCK DRILL.
 APPLICATION FILED NOV. 17, 1909.

1,015,780.

Patented Jan. 30, 1912.
 2 SHEETS—SHEET 1.



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 T. F. Carroll,

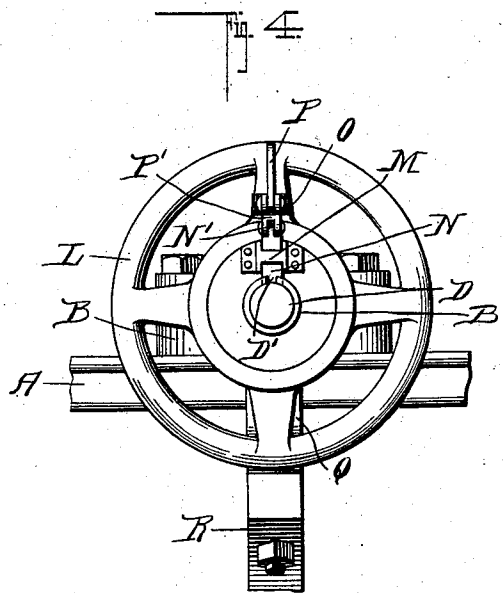
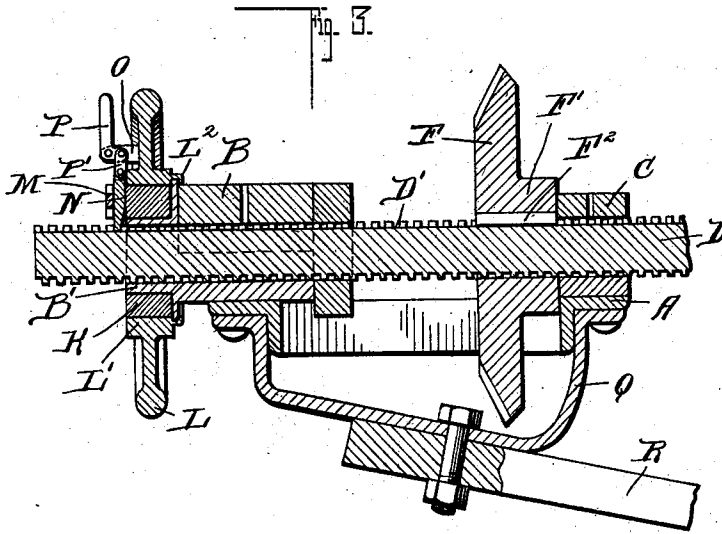
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Witnesses

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UNITED STATES PATENT OFFICE.

THOMAS FRANCIS CARROLL, OF MOUNT CARMEL, PENNSYLVANIA.

ROCK-DRILL.

1,015,780.

Specification of Letters Patent.

Patented Jan. 30, 1912.

Application filed November 17, 1909. Serial No. 528,506.

To all whom it may concern:

Be it known that I, THOMAS F. CARROLL, a citizen of the United States, residing at Mount Carmel, in the county of Northum-
5 berland and State of Pennsylvania, have invented a new and useful Improvement in Rock-Drills, of which the following is a specification.

This invention relates to rock drills, and
10 more particularly to that class of drills used in coal mines, the object being to provide a drill which is so constructed that the same can be readily operated with one hand there-
by enabling the operator to have free use of
15 his other hand for guiding and feeding the drill.

A further object of my invention is to provide a novel form of feed whereby the same can be readily locked or unlocked so
20 as to regulate the feed easily and quickly.

A still further object of the invention is to provide a drill which is exceedingly simple in construction and one in which the parts are so formed that a very strong and
25 durable drill is obtained.

Another object of my invention is to provide a supporting or grip bar for the main frame whereby the screw shaft can be readily held in such a position as to cause
30 the bit carried thereby to bore the hole in the desired position.

Still another object of the invention is to provide a drill which is operated through the medium of beveled gears, one of which
35 is keyed upon the screw shaft so as to slide longitudinally thereon.

With these various objects in view, my invention consists in the novel features of construction, arrangement and combination
40 of parts, all of which will be hereinafter fully described and pointed out in the claims.

In the drawings forming a part of this specification: Figure 1 is a side elevation of my improved drill, showing the same in
45 an operative position. Fig. 2 is a top plan view of the drill. Fig. 3 is a detail longitudinal section through the same, and Fig. 4 is an end view.

In carrying out my improved invention,
50 I employ a rectangular frame A which is provided with journal boxes B and C in which is revolubly mounted a screw shaft D which is provided with a longitudinal groove D' and is adapted to carry a bit E
55 of any desired construction at its forward

end which is secured thereon by any suitable means.

Keyed on the screw shaft D is a beveled gear F which is so mounted that the same can slide longitudinally on the shaft or in
60 other words, the shaft can slide longitudinally through the gear and said beveled gear is provided with a hub portion F' having an integral key F² which works within the groove D' of the screw shaft D so that when
65 the gear F is rotated the screw shaft will be driven so as to cause the bit to bore a hole.

For operating the beveled gear F, I provide the frame with journal boxes G which
70 can be placed upon either end and secured by bolts G' so that by placing the same upon one end a right hand drill will be formed and by placing the same upon the other end a left hand drill will be
75 formed. Within the journal box G is a shaft H which carries a beveled gear I at one end which meshes with the beveled gear F and is provided with a crank arm J at its outer end for operating the same and it
80 will be seen that by turning the crank the beveled gear I will be rotated which in turn drives the beveled gear F causing the screw shaft D to rotate therewith.

The journal box B is provided with a
85 sleeve portion B' on which is revolubly mounted a bushing K which is keyed within the hub L' of a hand wheel L, said hub being provided with a flange L² which is hammered or pressed over an annular rib
90 so as to hold the wheel in position thereon in such a manner that the same can freely rotate and yet be stopped from moving rearwardly. The bushing K carries a guide
95 bracket M in which is slidably mounted a bolt N adapted to fit within the threads of the screw shaft D so that when thrown into engagement therewith and the shaft operated the same will be forced forwardly so
100 as to cause the bit to be forced into engagement with the rock or coal upon which it is operating.

For operating the bolt N, I provide one of the spokes of the wheel L with a bracket O in which is pivotally mounted a lever P
105 which carries a link P' having a bifurcated end which is pivotally mounted over the reduced end N' of the bolt N so that when the lever is thrown into position as shown in Figs. 3 and 4, the bolt will be thrown
110

into mesh with the threads of the screw shaft and when thrown down it will be thrown out of engagement with the screw shaft so as to stop the feed.

5 For supporting the frame A in such a position that the screw shaft carrying the bit can be placed into the desired position, I provide the frame A with a drop frame Q, the lower portion of which is inclined as
10 clearly shown to which is detachably connected a supporting or grip bar R which is adapted to be driven into the rock or coal as clearly shown in Fig. 1 for supporting the frame and it will be seen that by this
15 construction the main frame can be held in a perfectly horizontal position or by shifting the angle or inclination of the supporting or grip bar R with reference to the rock wall or ore vein being worked upon it can
20 be made to assume any position desired.

The operation of my improved drill is as follows: With the drill in the position shown in Fig. 1 and the bolt N in engagement with the threads of the drill rod D
25 the turning of the crank handle J will operate the gears I and F and rotate the rod D and bit. The device is steadied by the operator holding the wheel L with the left hand and while turning the handle J with
30 the right. The bit will therefore be rotated and will at the same time be fed forward. By throwing the lever P downwardly the bolt N will be drawn out of engagement with the threads and the feed will cease.
35 If at any time that it is desired to throw the bolt N back into engagement with the threads of the rod D and the relation between the rod and the said bolt, by reason of a slight longitudinal movement of the
40 rod while loose the bolt will not enter the thread when the position shown in Fig. 4 a

partial rotation of the wheel L one way or the other will carry the bolt into a position in which it will at once fall into proper engagement with the thread and the feed can
45 then be at once resumed.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A rock drill comprising a screw shaft, 50 a crank shaft, beveled gears carried respectively upon said shafts, and adapted to transmit the motion of the crank shaft to the screw shaft, a revoluble feed wheel, and a slidable bolt carried by said feed wheel 55 and adapted to engage said screw shaft.

2. In a rock drill, the combination with a frame, of a supporting bar for supporting said frame, a screw shaft slidably mounted in said frame, means for driving said screw 60 shaft, and a hand wheel revolubly mounted on said frame, and a slidable bolt carried by said wheel for engaging said screw shaft.

3. In a drill of the kind described, the combination with a main frame provided 65 with bearings, of a screw shaft slidable and rotatably mounted in said bearings, one of said bearings having a sleeve portion, a bushing rotatably mounted upon said sleeve, a hand wheel carried by and keyed to said 70 bushing, a guide bracket carried by said bushing, a bolt slidably mounted in said bracket, a second bracket carried by the hand wheel, a lever carried by the second mentioned bracket, a link connecting said 75 bolt and said lever, and means for driving said screw shaft, the said bolt being adapted to engage the threads of said shaft.

THOMAS FRANCIS CARROLL.

Witnesses:

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