(No Model.)

W. ARNOLD.

ROCK DRILLING MACHINE.

No. 458,612. Patented Sept. 1, 1891.

Fig. 1.

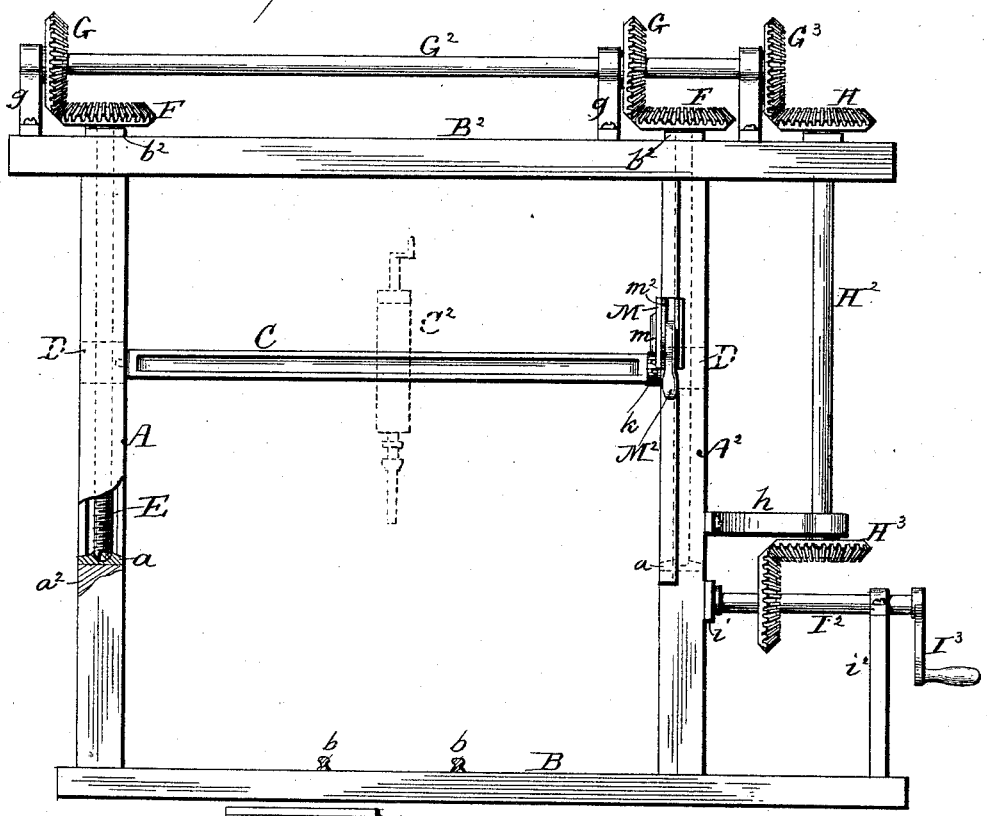


Fig. 2.

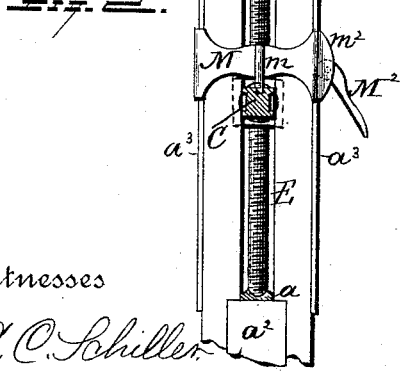
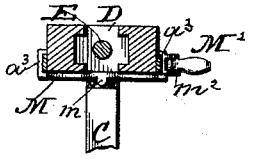


Fig. 4.



Witnesses

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WALTER ARNOLD, OF SAUK RAPIDS, MINNESOTA.

ROCK-DRILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 458,612, dated September 1, 1891.

Application filed May 18, 1891. Serial No. 393,106. (No model.)

To all whom it may concern:

Be it known that I, WALTER ARNOLD, a citizen of the United States, residing at Sauk Rapids, in the county of Benton, State of Minnesota, have invented certain new and useful Improvements in Rock-Drilling Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in the frame of rock-drilling or rock-channeling machines.

The object of my invention is to construct a frame for carrying and operating drilling or channeling tools in a workshop, said frame being so constructed as to permit the passage of a stone-carrying truck therethrough. It is provided with a horizontal quarry-bar and peculiar means for retaining said bar adjustably connected to the frame, as hereinafter described.

In the accompanying drawings, Figure 1 is a front elevation of a rock-drilling machine constructed in accordance with my invention. Fig. 2 is a transverse vertical section through the quarry-bar and showing a portion of the posts constituting one end of the frame and the means for retaining the quarry-bar adjustably retained and clamped to said posts. Fig. 3 is a transverse horizontal section through the posts, showing a portion of the quarry-bar and its retaining device clamped to said posts.

In said drawings, A represents a pair of posts, and A^2 a similar pair of posts. Said pairs of posts are connected together at the bottom by a sill B, upon which truck-rails *b* are shown, and at the top by two beams B^2. At a suitable distance under said beams the quarry-bar C is adjustably retained and carries the drill-holder and operating mechanism C^2, which may be of any of the well-known kinds and do not constitute any part of the present invention. The ends of the quarry-bar C are journaled into boxes or blocks D, preferably in the form of a Maltese cross having two of its arms received in vertical grooves formed on the inner sides of the posts A and A^2. The blocks D have a central vertical perforation which is screw-tapped to receive screws E, that can be rotated to raise or lower said blocks and the quarry-bar carried thereby. The upper portions of the screws are received in bearings b^2, secured to the beams B^2, and the lower ends of said screws are received in bearings *a*, resting on blocks a^2, located between the posts of each pair alongside their lower portion.

To rotate the screws, each one carries on its upper end a bevel-pinion F, with which bevel-pinions G are arranged to mesh. Said pinions G are mounted upon a shaft G^2, retained parallel with the beams B^2 by bearings *g* upon said beams. To permit the screws E to be rotated by a person standing on the floor supporting the machine, the shaft G^2 is also provided at one end with a bevel-pinion G^3, and with the latter a bevel-pinion H is made to mesh. Said pinion H is mounted on the upper end of a vertical shaft H^2, having its upper end guided in a bearing mounted upon the beams B^2 and its lower portion guided in a bearing *h*, secured to the sides of the posts A^2. To the lower end of the shaft H^2 is secured a bevel-pinion H^3, that is made to mesh with a bevel-pinion I upon a short horizontal shaft I^2, mounted in bearings *i* and i^2, and said shaft carries a hand-crank I^3, by which it can be rotated.

The drill-holder C^2 is suitably secured to the quarry-bar C, and the latter can be rotated on its journals; but to retain it at any point of its rotation, with the drill pointing in any desired position, the bar C has at one end a cylindrical portion that is provided with a series of radial holes *k*, within the uppermost one of which a vertical finger *m* is made to enter. Said finger is secured to a yoke M, that extends across the face of both posts A^2 and has hooked ends to engage with flat metal bars a^3, vertically secured to the sides of the posts A^2. To clamp the yoke to the posts, one of the hooked ends has two ribs m^2 projecting from its face, and through said ribs is passed a pivot-pin, that passes also eccentrically through the head of a handle M^2. The hooked end of the yoke has a slot between the two ribs m^2, so that the curved surface of the eccentric head of the handle M^2 can enter said slot and bear upon one of the bars a^3 with more or less frictional pressure, according to the angle at which the handle is set.

Having now fully described my invention, I claim—

The combination of the two pairs of posts of a rock-drilling machine, the screw-tapped blocks therein, and the screws passing through them with the quarry-bar C, having radial perforations in one end thereof, the yoke M, embracing one of the pairs of posts and having a finger *m* entering one of said radial perforations and one of the hooked ends provided with parallel ribs, and a handle eccentrically pivoted to said ribs, substantially as described.

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

WALTER ARNOLD.

Witnesses:
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