

*R.A. Thomas,
Stone Drill.*

N^o 57,011.

Patented Aug. 7, 1866.

Fig. 2

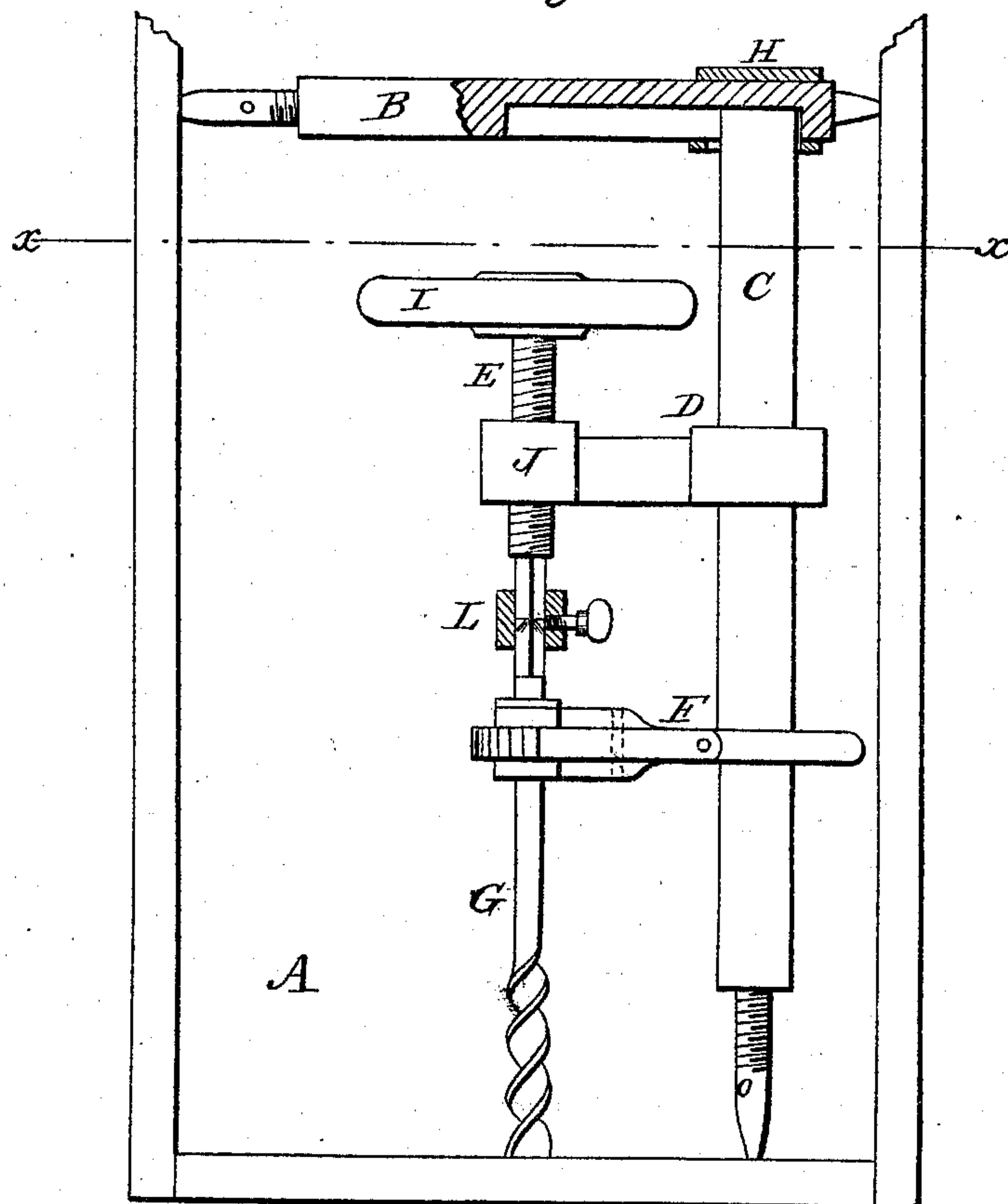
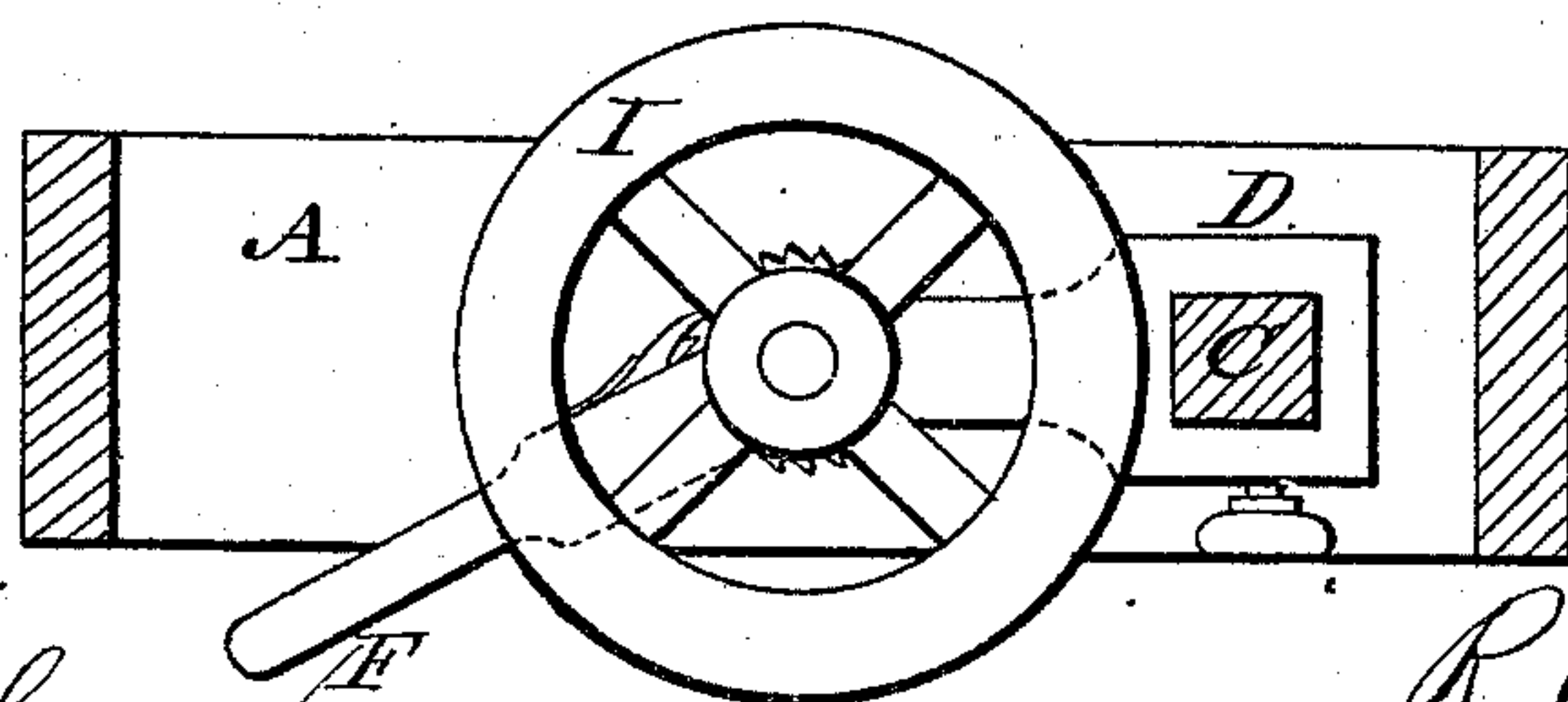


Fig. 1.



Witnesses:

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UNITED STATES PATENT OFFICE.

R. A. THOMAS, OF DAMASCUS, CALIFORNIA.

IMPROVED DRILLING-MACHINE.

Specification forming part of Letters Patent No. 57,011, dated August 7, 1866.

To all whom it may concern:

Be it known that I, R. A. THOMAS, of Damascus, in the county of Placer and State of California, have invented a new and useful Improvement in Machines for Drilling Rock; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation of a section on the line *x* of Fig. 2 of a machine made according to my invention. Fig. 2 is a side view.

Similar letters of reference indicate like parts.

This invention consists in an improved machine for drilling rocks, being especially adapted for tunneling through slate bed-rock and other similar descriptions of rock. Much of the rock in the gold-regions of California is of a tough nature, but is too solid to be worked by a pick, and therefore has to be drilled and blasted in tunneling and making drifts.

Most of the machines which have heretofore been used in drilling have been on the old churn principle, and the space within which they are worked being narrow, the complication of their construction and operation is increased, and much time and expense are consumed in getting them in a position to be worked with advantage.

My machine is simple in construction, and can be set up in a short time in a proper position in tunnels of small dimensions, being secured by means of a vertical post whose pointed ends; one or both, may be screwed outward against the roof and floor of the tunnel.

In the accompanying drawings, the letter A designates the top, bottom, and face of a tunnel. B is an upright stanchion-post composed of a solid piece of wood several inches square, with a pivot of metal inserted in the bottom and a steel screw inserted in its top, two or more holes being made in the body of the screw to turn it by, and so to tighten the post between the roof and floor of the tunnel.

C is a slide-bar, which supports the feed-screw by means of a box, D, which is fitted to slide on the bar, and can be fastened at any point thereon by means of a set-screw.

The bar C may be made of steel to prevent it from bending. It has a pointed screw at one end to come against the face of the tunnel, and its other end is squared to fit a square mortise in a sliding box, H, which is placed around the stanchion-post B, and is capable of being raised and lowered on the post to bring the bar C to the desired elevation. The box H is fastened at any desired height by a set-screw. The box D has a vertical arm projecting from its upper side and carrying at its top a nut, J, for the feed-screw E to fit in. The screw E has at its outer end a hand-wheel, I, by which the screw is turned to advance the drill as it bores into the rock.

I have found that a pitch of five threads to the inch is a suitable gage for drilling ordinary rock.

G is the drill. The bar of which it is made may be octagon steel about one and one-eighth inch in diameter, about five feet long, with a ratchet and lever, F, for turning the drill.

In setting the machine up for work there should be a small depression made in the face of the rock to receive the pivot of the bar C; also a notch for the point of a drill.

When it is desired to bore a hole in the roof of the tunnel it is only necessary to secure the stanchion-post in a horizontal position, its ends coming against the sides of the tunnel.

The back end of the drill is centered in a socket made for it in the adjacent end of the feed-screw E, and the stocks of the drill and feed-screw are made square, so that they can both be embraced by a square sliding box, L, which can be fastened by a set-screw. This box can be moved wholly on the stock of the drill and fastened there; or, in case it is desired to turn the feed-screw and drill at the same time, and by turning either the hand-wheel I or the handle of the ratchet, the box can be moved to the position shown in Fig. 2, where it is seen to embrace both, so that they will be moved together when the lever of the ratchet is rotated.

In practice the drill may be run into the rock about eight inches without cleaning out, when it may be taken out and scraped with a small scraper, as in ordinary drilling.

I claim as new and desire to secure by Letters Patent—

1. The combination, in a machine for drilling rock in drifts and tunnels, of the stanchion-post B, the bar C, that supports the feed-screw and drill, and the adjustable box H, constructed and arranged substantially as described.

2. The square box L, fitted to the stocks of

the drill and feed-screw, substantially as described, so that they can be connected at pleasure.

R. A. THOMAS.

Witnesses:

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