

J. Murphy,
Metal Drill,

N^o 24,045.

Patented May 17, 1859.

Fig. 1.

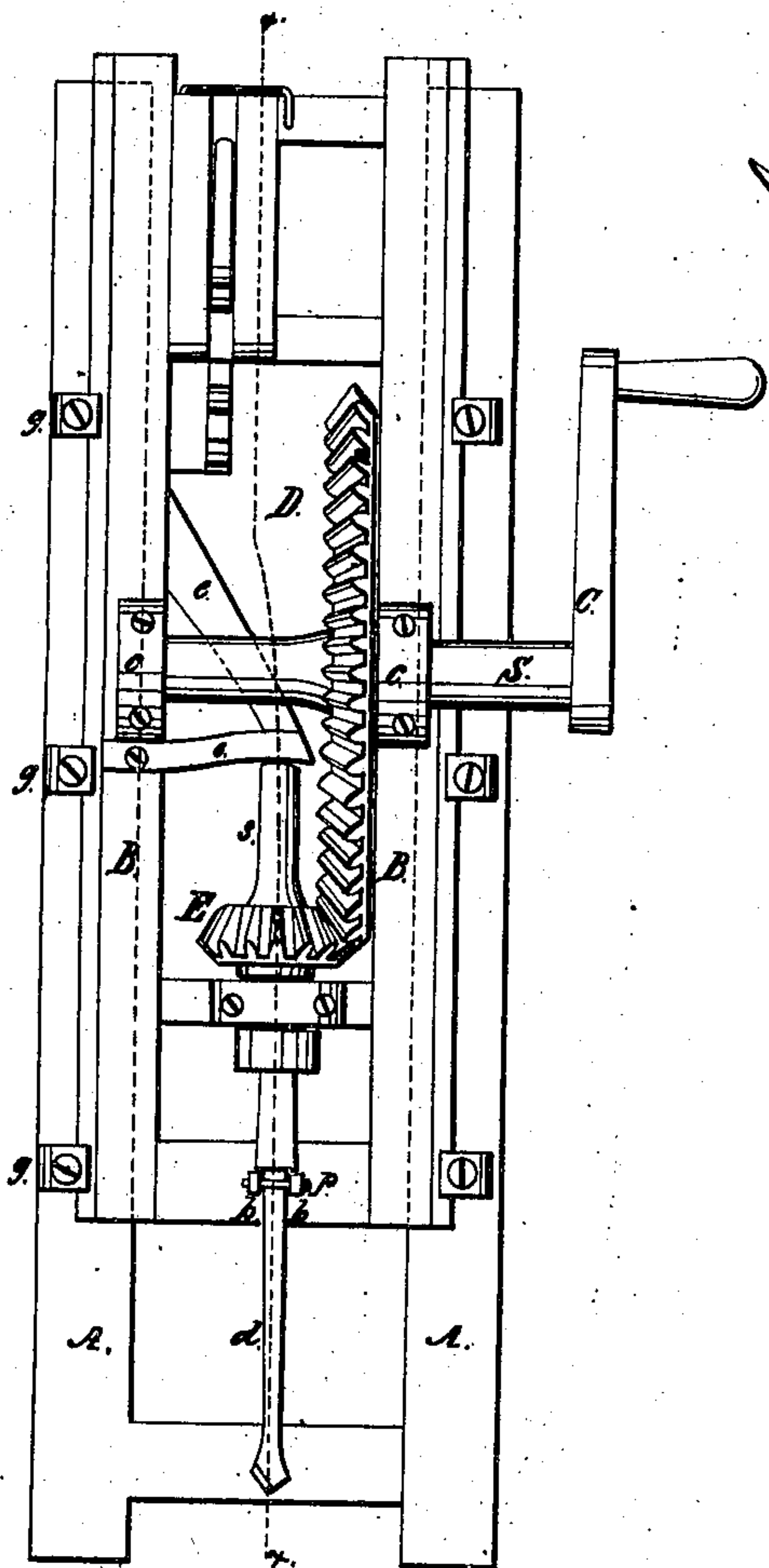
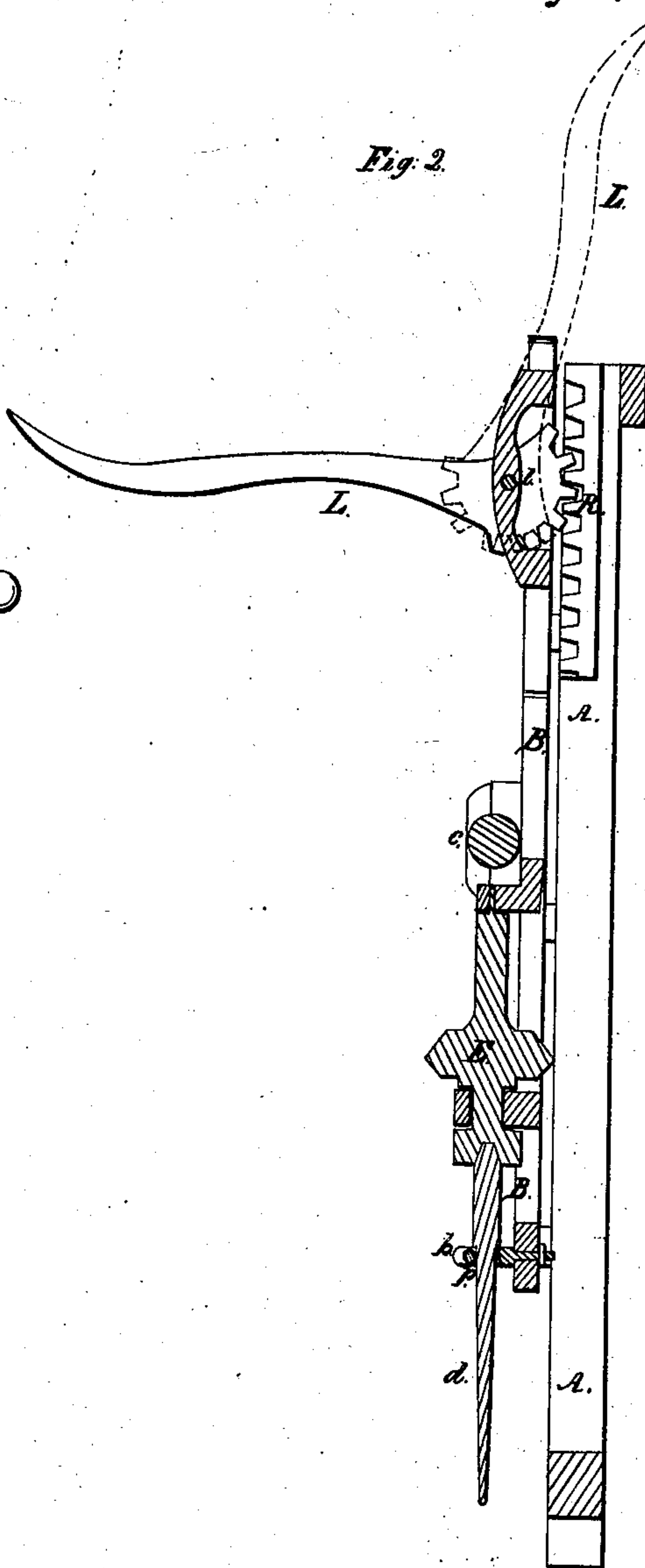


Fig. 2.



Witnesses

Jas. B. Long
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JACOB MURPHY, OF HALF MOON, PENNSYLVANIA.

METAL-DRILL.

Specification of Letters Patent No. 24,045, dated May 17, 1859.

To all whom it may concern:

Be it known that I, JACOB MURPHY, of Half Moon, in the county of Center and State of Pennsylvania, have invented a new and useful Improvement in Metal-Drills; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, forming part of this specification, in the several figures of which similar characters of reference denote the same part.

Figure 1, is a full front vertical view of the apparatus. Fig. 2, is a vertical section of the apparatus, taken through the line *x x*, perpendicular to the face of the machine.

This invention has reference to improvement in metal drills, and is so designed as to favor both economy and simplicity of construction, and facility of operation, together with other advantages which will be named hereafter, and in their proper order.

The nature of this invention consists in so constructing the component parts of the machine, that in the operation of drilling, when, after boring through the metal, or to the desired depth, as the case may be, the bit, instead of (as is the case in other machines of the kind) remaining fast in the metal after the weight has been withdrawn from above, is drawn entirely out, and clear of the metal below. Even in cases where the bit is fastened in the socket by a screw, it is liable to be torn out, or to become unsteady in its socket by continued use. Now in the construction of my machine, all danger of breakage or aptness to become loose, is done away with. My machine is also so constructed that by a simple, the drill may be so lowered as to bore to any depth or through any number of pieces, which and other details will be more fully specified in the following description.

In the drawing, the machine is represented as made up of the following parts viz:
A stationary upright frame A A upon the front of which slides vertically the movable frame B B being held in its place by, and

sliding through the guides *g g g*. The crank C connected with the shaft *s* which turns horizontally upon the front of the frame B B, and is secured by the caps *c c*, gives motion to the large cogwheel D which working upon the pinion E upon the small shaft *s* which is steadied by the braces *e e*, drives the drill *d* which is held in its proper place by the pin *p*, and the braces *b, b*, which pass under the shoulders of the drill *d*, thus, allowing it to move vertically only with the frame B B.

The frame B B is moved upon the stationary frame A A by the lever L which terminates in a cogged segment *l*, working in the toothed rack R. When the lever L is raised to a vertical position as shown by the red lines in Fig. 2; the cogged segment *l* is thrown out of gear with the rack R, thus allowing the frame B B to slide down as far as desired, after which the cogged segment is again brought into gear by lowering the lever, and worked as before.

The advantages claimed for my improvement, consist 1st. in the drill *d* being always kept in a central position and made to move vertically with the frame B B. 2d. The cogged segment of the lever working in the toothed rack, being thrown out of gear in an instant by raising the lever to a vertical position, the whole sliding frame may be lowered to any desired distance and stopped at pleasure by lowering the lever.

What I claim and desire to secure by Letters Patent is:

The shoulders on the drill *d* in combination with the braces *b b* and pin *p* upon the sliding frame B B, substantially as and for the purposes set forth.

In testimony whereof I have hereunto signed my name before two subscribing witnesses.

JACOB MURPHY.

Witnesses:

GEO. PATTEN,

JOHN S. HOLLINGSHEAD.