

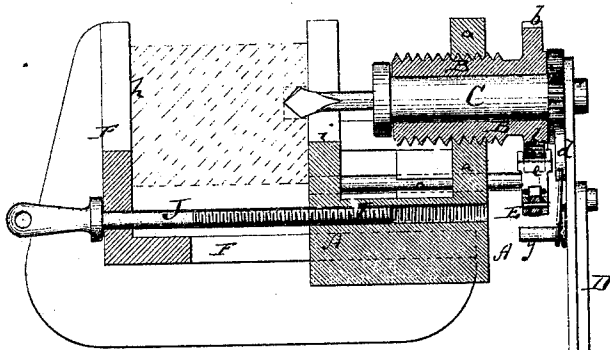
*I. M. Laughlin,*

*Drilling Metals.*

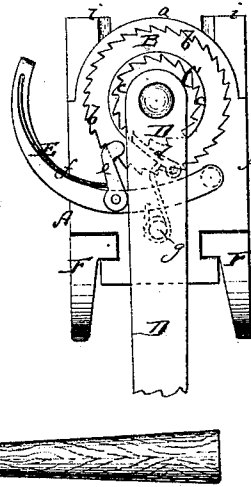
*No. 108,374.*

*Patented Oct. 18, 1870.*

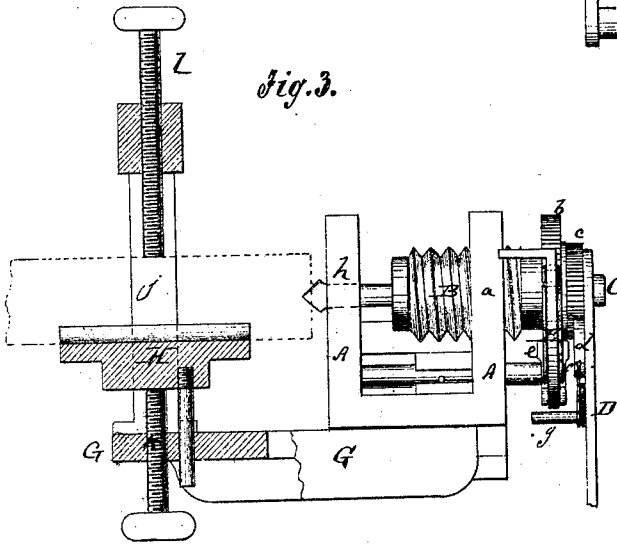
*Fig. 1.*



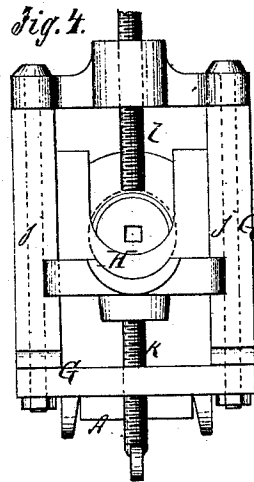
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



**Witnesses:**

*A. Reynolds*  
*& S. Make*

**Inventor:**

*I. M. Laughlin*

**PER**

*M. W. [Signature]*

**Attorneys.**

# UNITED STATES PATENT OFFICE.

IRA McLAUGHLIN, OF EAST ARLINGTON, VERMONT.

## IMPROVEMENT IN DRILLS AND HOLDERS.

Specification forming part of Letters Patent No. **108,374**, dated October 18, 1876.

*To all whom it may concern:*

Be it known that I, IRA McLAUGHLIN, of East Arlington, in the county of Bennington and State of Vermont, have invented a new and Improved Drill and Holder; 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 drawing, forming part of this specification.

Figure 1 represents a vertical longitudinal section of my improved drill and holder. Fig. 2 is an end elevation of the same. Fig. 3 is a side view, partly in section, of a modification of the same. Fig. 4 is an end view of said modification.

Similar letters of reference indicate corresponding parts.

My invention has for its object improvement in drills for boring metallic or other articles; and consists in an improved combination and arrangement of parts, as particularly specified in the claims.

A in the drawing represents the frame in which my drill is to be supported. In an ear, *a*, that projects from the frame is hung a hollow screw, B, which has a ratchet-wheel, *b*, at its outer end.

C is the drill holder or shaft. It has its bearings in the tube B, as shown in Fig. 1, and can be revolved loosely in the same. The shaft C has a crank, D, pivoted to its outer end to turn loose on the same, and carries a ratchet-wheel, *e*, to which motion is imparted by a spring-pawl, *d*, that is pivoted to the crank. By revolving the crank in the right direction it will, by means of the pawl *d*, impart similar rotary motion to the shaft C.

To the frame A is pivoted a lever, E, which carries a click, *e*, and is held down by a spring, *f*. The click *e* is in contact with the edge of

the wheel *b*. A pin, *g*, projecting from the crank D, strikes the lever E once during every revolution of the crank, and by swinging said lever moves the click, so as to impart motion to the wheel *b* and tube B. The latter is thus gradually screwed forward to feed the drill in the desired degree.

The lever E is curved, as shown, and the pin *g* crowds it toward the wheel *b*, and passes then over its end. When the lever E is released, it is at once thrown down again by the spring *f*.

The frame A is made to slide upon a frame, F, which carries a screw, J, by means of which the frame A can be moved nearer to or farther away from an ear, *h*, that projects from the frame F. The frame A has a similar projecting ear, *i*. Between the ears *h i* the article to be bored can be clamped, as in a vise.

For centering shafts another frame, G, is used in place of F. The frame G has, between a pair of vertical posts, *j j*, a sliding concave bed, H, for supporting the shaft to be bored. The bed H is vertically adjustable by a screw, K. A screw, *l*, serves to hold the shaft down upon the bed H.

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

1. The table A, having the ears *i* and *a*, together with the drill-shaft C, combined with the frame F, which has the ear *h* and the screw J, all constructed substantially as described.

2. The centering device G H, with its set-screws and other appliances, for use conjointly with the drilling device, interchangeable with the frame F, as described.

IRA McLAUGHLIN.

Witnesses:

W. M. GALUSHA,  
AGNES M. PRATT.