

Kirkpatrick & Hornby.

App. for Drilling Metal.

No 93,451.

Patented Aug. 10. 1869.

Fig. 1.

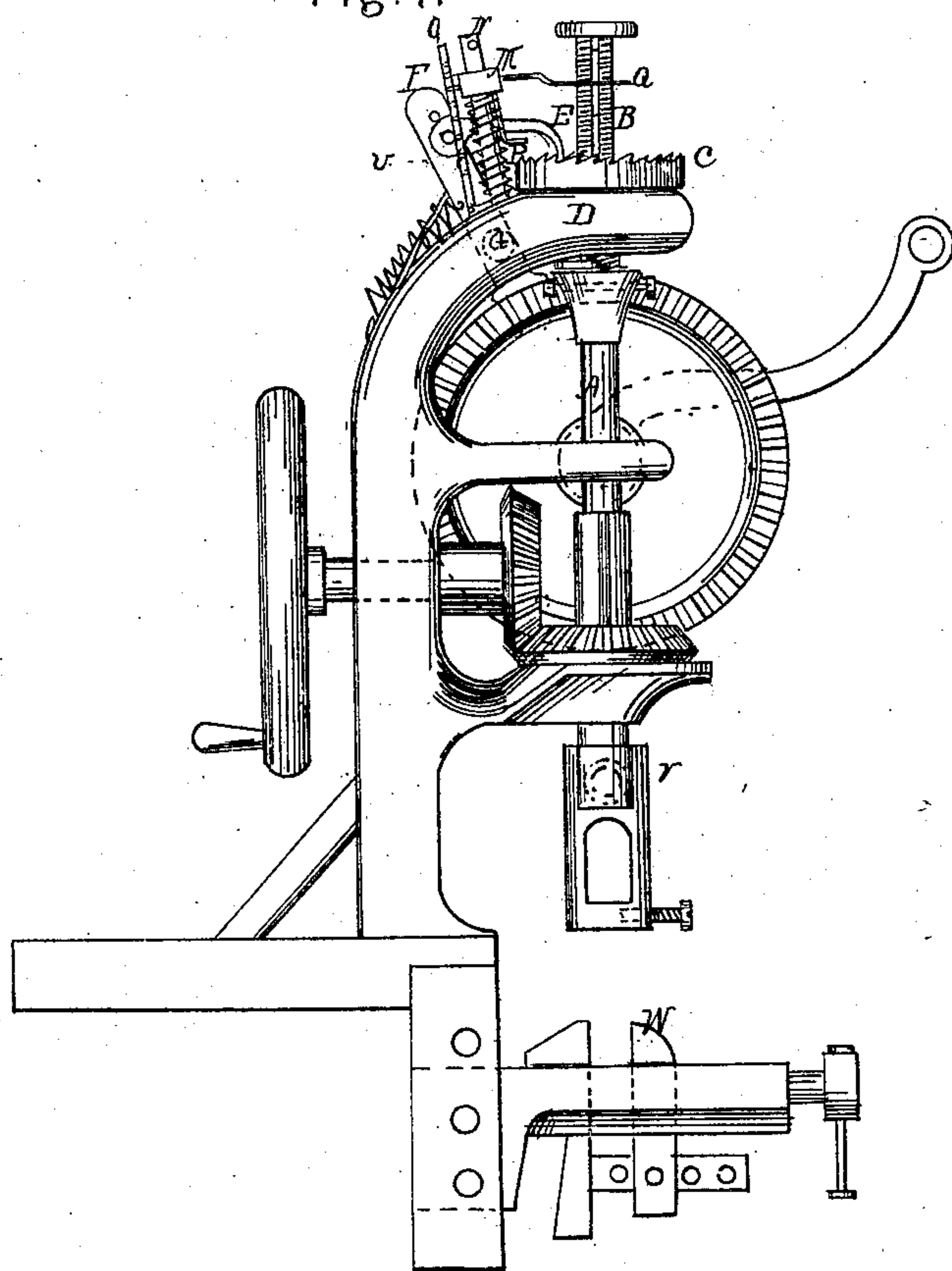
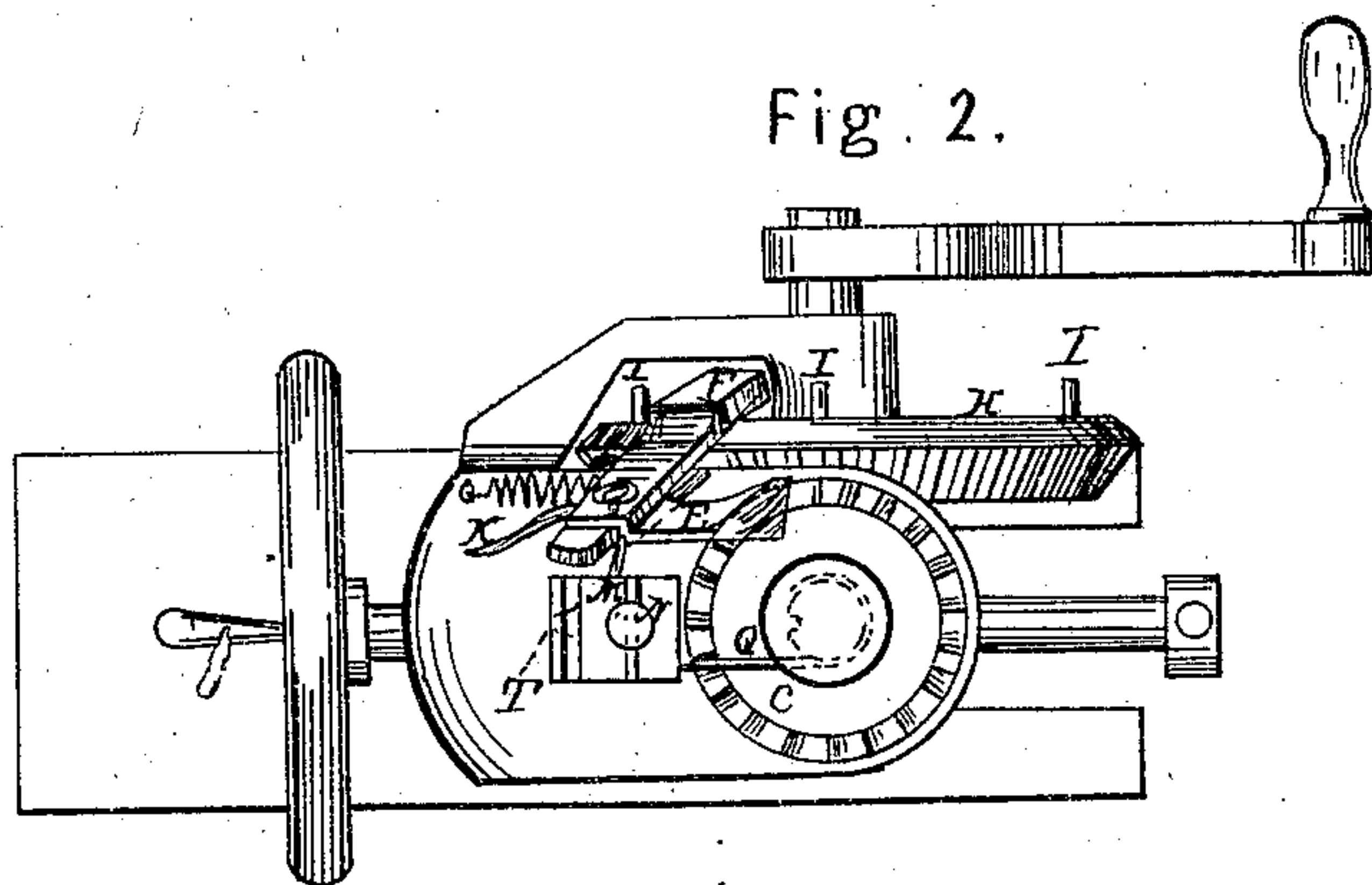


Fig. 2.



Witnesses:

Geo. W. Mabee
J. A. Brooks

Inventor:

J. A. Kirkpatrick & G. W. Hornby.

per *[Signature]*
Attorneys.

United States Patent Office.

J. A. KIRKPATRICK AND G. W. HORNBY, OF EVANSVILLE, INDIANA.

Letters Patent No. 93,451, dated August 10, 1869.

IMPROVED APPARATUS FOR DRILLING METAL.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, J. A. KIRKPATRICK and G. W. HORNBY, of Evansville, in the county of Vanderburg, and State of Indiana, have invented a new and improved Drilling-Machine; and we 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

This invention relates to improvements in drilling-machines, such as are used for drilling metal, and has for its object to provide an improved feeding-device; also, an improved adjustable attachment, for arresting the feed when any required depth of boring has been accomplished.

Figure 1 represents a side elevation of our improved machine.

Figure 2 represents a plan view of the same.

Similar letters of reference indicate corresponding parts.

The drill-spindle A is provided with a feed-screw, B, screwing through the bracket D, and having a ratchet-feed wheel, C, on the top of the bracket D, arranged to rotate thereon, turning the screw to screw it up or down, in the usual way, the ratchet-wheel being operated by a pawl, E.

For operating this pawl E, I connect it to a lever, F, pivoted at G to the frame, and projecting downward alongside of the back of the driving-wheel H, which is provided with a series of pins, I, which, striking the end of the lever F when the wheel is being turned, vibrate the said lever, thereby cause the intermittent rotation of the wheel C to screw the spindle down.

The pawl-lever F is withdrawn by a spiral spring, K.

The feed is varied by adjusting the pawl up or down on the feed-lever.

The apparatus for throwing out the feed consists of an adjustable block, M, supporting-rod N, adjusting spring-plate O, tripping-arm P, yoke Q, and spring U.

The said adjustable block is movable up and down on the rod N, rising up from the frame, and carries a yoke, Q, extending around the feed-screw, taking under the head thereof, so as to be moved up and down on the screw.

The said block also carries the tripping-arm P, which takes under the pawl E, and a stud, T, which takes

into the notches of the perforated adjusting-plate O, to hold the block at any given point up or down on the rod N, as may be required, for throwing out the pawl.

When the feed-screw works down, so that the head reaches the yoke, and carries it down, the latter, by turning or tipping the block M, causes the lower outer corner thereof to strike the spring-holding plate F and press it back, so as to disengage the stud T, when the spring U will throw the block up, and lift the pawl out of action with the wheel C.

To facilitate the disengagement of the stud T, it is placed as nearly as may be at the upper side of the block M. The hole through the latter for the rod N is so shaped as to cause the block to bind on the rod when pressed upward by the spring, one side of the block being held by the stud T, thereby preventing the block being turned upward, while it permits the block to be turned downward by the yoke Q, for disengagement of the stud T. To further aid in disengaging the stud T from the perforations in the spring-plate, said perforations may be made inclined to their axial line, on the upper side; or, in other words, made funnel-shaped, with the larger mouth toward the stud T.

We propose to provide a die-holding block, V, for attachment to the spindle, and a rod-holding vise, W, in the table, whereby we are enabled to cut screw-threads on bolts.

We also provide two driving-wheels, giving different speeds, for light or heavy work.

Having thus described our invention,

What we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the ratchet-feed wheel C, pawl L, lever F, and operating-pins I, in the driving-wheel, when all arranged as specified.

2. The combination, with the feeding-screw, ratchet-wheel, and pawl, of the rod N, block M, yoke Q, tripping-arm P, spring-holding plate O, and spring U, all substantially as specified.

J. A. KIRKPATRICK.
G. W. HORNBY.

Witnesses:

OSBORNE REILLY,
JOHN WHITEHEAD.