

No. 633,880.

Patented Sept. 26, 1899.

J. MILLER.

RATCHET DRILL AND SCREW THREADING DEVICE.

(Application filed June 13, 1898.)

(No Model.)

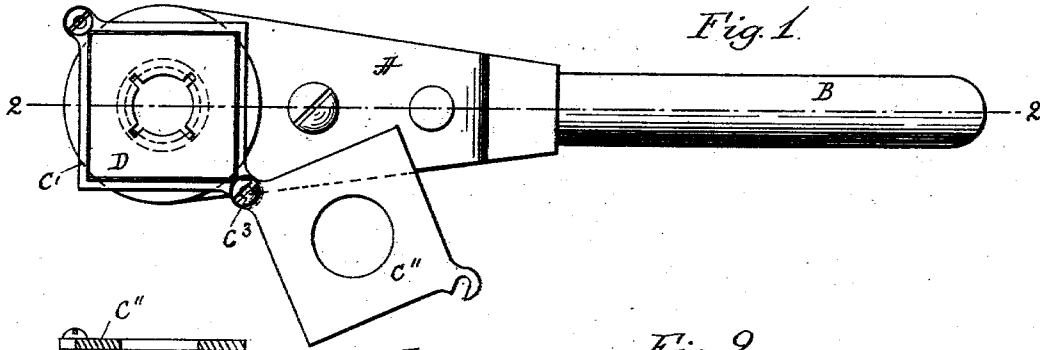


Fig. 1.

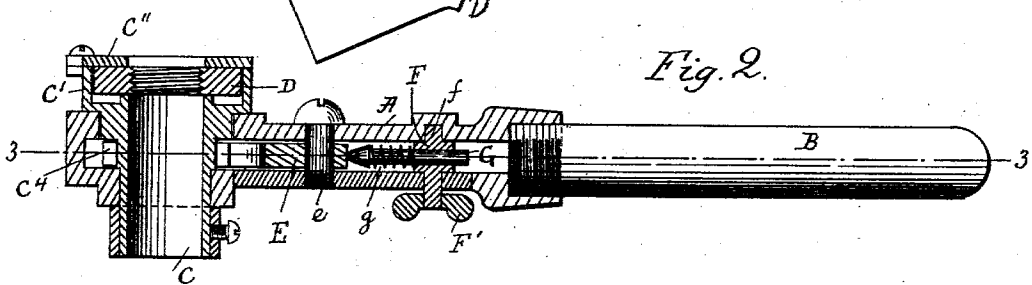


Fig. 2.

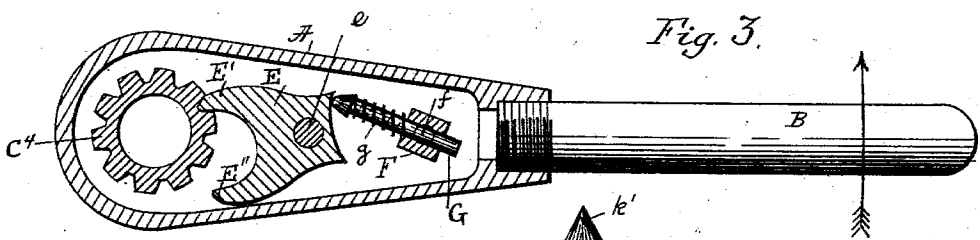


Fig. 3.

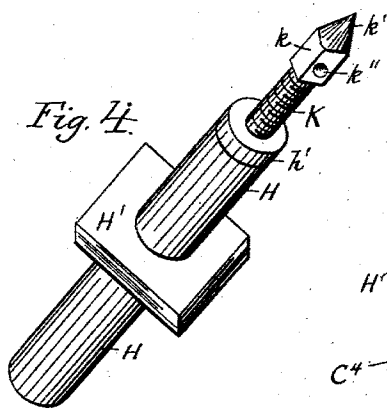


Fig. 4.

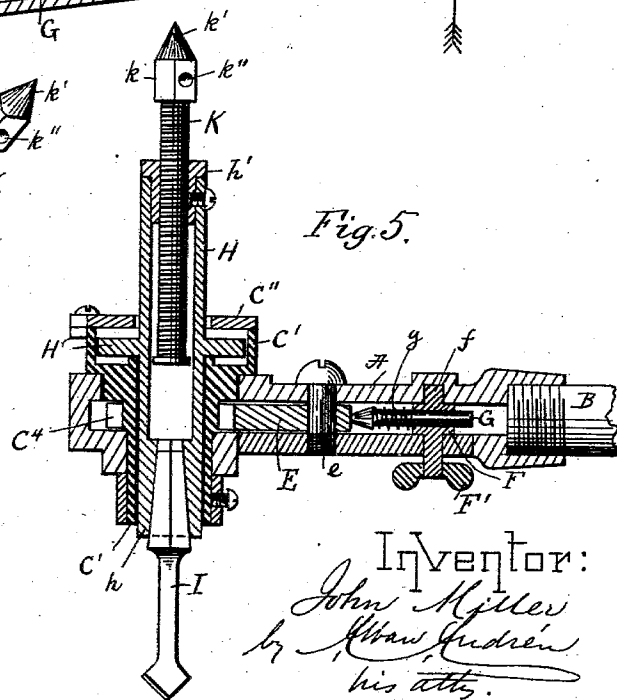


Fig. 5.

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UNITED STATES PATENT OFFICE.

JOHN MILLER, OF CAMBRIDGE, MASSACHUSETTS, ASSIGNOR OF ONE-THIRD
TO JOHN ARTHUR MILLER, OF LOWELL, MASSACHUSETTS.

RATCHET-DRILL AND SCREW-THREADING DEVICE.

SPECIFICATION forming part of Letters Patent No. 633,880, dated September 26, 1899.

Application filed June 13, 1898. Serial No. 683,263. (No model.)

To all whom it may concern:

Be it known that I, JOHN MILLER, a citizen of the United States, residing at Cambridge, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Ratchet-Drills and Screw-Threading Devices, of which the following is a specification.

This invention relates to improvements in ratchet-drills and screw-threading devices; and it has for its object to provide an improved implement for the threading of pipes or cylindrical metal bars with a right or left hand screw, as may be desired, and which shall be also applicable as a ratchet-drill for drilling purposes, as will hereinafter be more fully shown and described, reference being had to the accompanying drawings, wherein—

Figure 1 represents a top plan view of the invention, showing the cover of the die-holder swung open. Fig. 2 represents a central longitudinal section on the line 2 2 in Fig. 1, showing the cover of the die-holder closed. Fig. 3 represents a longitudinal section on the line 3 3 shown in Fig. 2. Fig. 4 represents a detail perspective view of the drill-holder adapted to be used in connection with the improved device for drilling purposes; and Fig. 5 represents a vertical section of the invention, showing the drill-holder in position for drilling purposes.

Similar letters refer to similar parts wherever they occur on different parts of the drawings.

In the drawings, A represents the hollow frame, provided with a handle B, as shown. In a perforation in the frame A is journaled the tubular guide C for the pipe or cylinder that is to be threaded. The upper end of the tubular guide C is made as a die-holder C', in which the screw-threading die D is contained.

C'' is a cover hinged at C⁸ to the die-holder C' and adapted to be closed on top of the said die-holder and secured in such position when the device is in use as a screw-threading device, as shown in Fig. 2.

Secured to or made in one piece with the sleeve C is a ratchet-wheel C⁴, which is inclosed within the frame A. Within said

frame A is pivoted at *e* the pawl E, having pawl projections E' E'', as shown in Fig. 3, adapted for engagement with the ratchet-wheel C⁴, as shown in Figs. 2 and 3. Back of the pawl E is pivoted at *f* to the frame A a block F, through a perforation in which is guided a spring-pressed pin G, the outer end or head of which is held against the rear of the pawl E by the influence of a coiled spring *g*, as shown in Figs. 2 and 3. To the outer portion of the pivot of the block F is secured a knob or handle F', by means of which the block F and pin G may be turned from a position shown in Fig. 3 to a position for causing an engagement of the pawl projection E'' with the ratchet-wheel C⁴, if desired, to rotate the latter and its die-holder and die in a direction opposite to that shown by arrow in Fig. 3.

It will thus be seen that by the adjustment of the position of the block F and its spindle G the duplex pawl-lever E may be adjusted relative to the ratchet-wheel C⁴ for turning the latter and its die-holder and die to the right or left, as may be desired, for cutting right or left handed threads. In cutting threads on pipes or bars of less diameters than the interior bore of the sleeve C a suitable guide-thimble is inserted in the latter, as is common in devices of this kind.

If it is desired to use the invention as a ratchet-drill, I remove the screw-threading die D from within the die-holder C' and use in connection with the device a drill-holder. (Shown in perspective view in Fig. 4 and shown in Fig. 5 as connected to the frame of the invention.) Said drill-holder consists of a cylindrical sleeve H, having a socket *h* in its lower end for the reception of the shank of the drill I. (Shown in Fig. 5.) Within the upper end of the sleeve H is secured a nut *h'*, adapted to receive the screw-threaded feed-screw K, as shown, said feed-screw having at its upper portion a head *h*, terminating as a conical end *k*, which is adapted to be held against a suitable rest or support during the drilling operation, as is common in devices of this kind. The feed-screw K may be turned around its axis either by means of a suitable wrench or spanner placed on the head *k* or by means

of a rod inserted in a hole k'' in said head, as shown in Figs. 4 and 5. To the sleeve H is secured or made integral with it a plate H', adapted to fit the interior of the die-holder C' when the device is used as a ratchet-drill, as represented in Fig. 5.

It will be noticed that the ratchet-wheel C⁴, pawl E, spring-pressed pin G, and block F are all arranged inside of the frame of the device, by which said parts are wholly inclosed, so as to be kept clean and protected from dust, grit, or other accumulations by which the efficacy of working of said parts is materially augmented.

From the above description it will be seen that the invention may be used as a screw-threading device for cutting right or left handed screws, and it may also be used as a ratchet-drill by combining with it the drill-holding sleeve H in a manner and for the purpose hereinabove shown and described.

What I wish to secure by Letters Patent and claim is—

1. In a ratchet-drill and screw-threading device, the combination of the hollow frame A having a circular perforation in one end, the tubular guide c extended through and journaled in said perforation and having an enlarged die-holding chamber c' in one end, the ratchet-wheel c^4 secured to said tubular guide and inclosed in the said hollow frame, the reversible pawl E and the perforated

block F each pivotally mounted within and wholly inclosed by said hollow frame, the pivot of said block being extended beyond the frame and provided with a handle for adjusting said block, and the spring-pressed pin G mounted in said block and engaged with said pawl, substantially as and for the purpose described.

2. In a ratchet-drill and screw-threading device, the combination of the hollow frame A, the tubular guide c journaled in and extended through said frame and provided in one end with the enlarged chamber c' , a detachable drill-holder H mounted in said tubular guide c and provided with a plate or projection H' to interlock in the chamber c' , a drill I carried in one end of said holder and a feed-screw k in the other the ratchet-wheel c^4 on the guide-sleeve, c , the reversible pawl E, the perforated block F pivoted in the hollow frame and having its pivot extended outward and provided with a handle, and the spring-pressed pin G mounted in said block and engaged with said pawl, substantially as and for the purpose described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN MILLER.

Witnesses:

ALBAN ANDRÉN,
MOSES W. S. JACKSON.