

C. D. ROGERS.
Screw-Machine.

No. 211,053.

Patented Dec. 17, 1878.

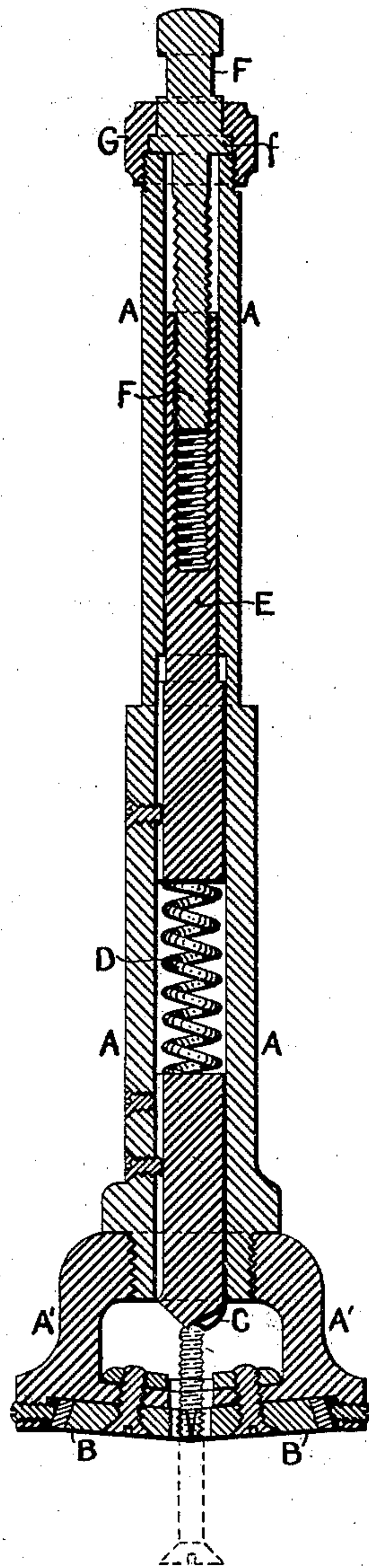


FIG. 1.

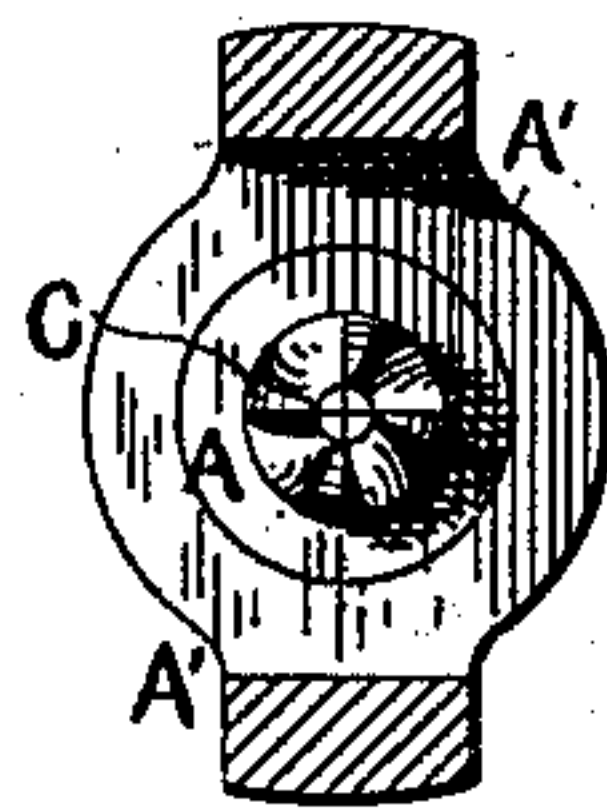


FIG. 2.



FIG. 3.



FIG. 4.

WITNESSES.

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IMPROVEMENT IN SCREW-MACHINES.

Specification forming part of Letters Patent No. **211,053**, dated December 17, 1878; application filed
June 29, 1878.

To all whom it may concern:

Be it known that I, CHARLES D. ROGERS, of the city and county of Providence, and State of Rhode Island, have invented a new and useful Improvement in Screw-Machines, which improvement is fully described in the following specification, and illustrated in the accompanying drawing, making a part of the same.

My invention relates to that class of screw-machines which, operating upon a blank, simultaneously thread and point it. The labor of the pointing cutter or tool is of such a character as to require frequent adjustment, because it is held to its work by a yielding pressure, which should be increased in proportion as the pointing-tool becomes dulled in order to secure good smooth work.

As heretofore constructed, the pointing-tool can only be adjusted while the machine is at rest; but by reason of my improvement said tool can be readily adjusted while the dies and cutter are at work; and my invention consists in the combination, with threading-dies, of a hollow arbor or spindle provided with a die-clamp at its front end, a pointing-tool within, a spring, and a follower for the spring, which is controlled by a hand-screw, and adjustably accessible at or near the rear end of a hollow arbor. This accessibility of the follower enables the operative to adjust the position of the pointing-tool and to increase or decrease the yielding pressure of the spring.

In the threading of a screw-blank, as usually performed, either the said blank is gripped by jaws, which, after it is in place, are revolved, and the said blank made to approach or be approached by non-revolving dies, or the blank is gripped by non-revolving jaws, and made to approach or be approached by revolving dies.

My device is applicable to either style of machine, which is so well known as to need no description; therefore only the die-holder and its parts will hereafter be considered, they being the only mechanism necessary to the understanding of my invention.

Referring to the drawing, in which like parts are indicated by similar letters of reference, Figure 1 represents, in longitudinal section, the die-holder spindle containing my improved

device for rounding or pointing the end of a screw. Fig. 2 shows an end view of the said spindle with its head removed, showing the cutter in place; and Figs. 3 and 4 represent views of finished screws, the former with a rounded and the latter with a pointed end.

As shown in Fig. 1, A represents the hollow die-holder spindle, the same being furnished with a head, as at A', in and to which the dies B are secured. Mounted in the same spindle or arbor is a cutter, as at C, having one or more operating-faces, the said cutter being splined to the spindle A, to prevent rotary motion upon its own axis.

As above stated, the operation of dressing the end of the screw takes place contemporaneously with the threading, it being performed during the completion of the thread.

The force by which the dressing is done is furnished by the "lead" of the screw.

As heretofore, this cutter is backed up by a spring, D, so that it may gradually retire as the screw is advanced by the dies. The seat for the spring is afforded by the end of the spindle-shaped follower E, which is preferably splined to the spindle or arbor A, which is hollow throughout its length.

As screws of various lengths are threaded upon one and the same machine, it is necessary that means be provided by which the cutter may be longitudinally adjusted with reference to the dies, to properly receive and operate upon the ends of the screws. For this purpose the follower E is tapped at its rear end to engage with a hand-screw, as at F, having a collar, *f*, upon its head, and the end of the spindle A is furnished with a flanged nut, as at G, which works upon the said spindle and operates by clamping the collar *f* to the end of the spindle A, to hold the follower E, spring D, and cutter C in proper longitudinal position after the adjustment has been made by the screw F, and secure the parts, which will then be ready for service.

The operation of the device is substantially as follows: It being desired to thread and point screws of a definite length, proper arrangements are first made for threading the required length of the shank. Then the cutter

C is longitudinally adjusted with reference to the dies B by means of the screw F, so that before the thread is completed the said cutter shall act upon the end of the screw a sufficient length of time to properly dress it. The threading then commences; but before its completion the end of the screw comes in contact with the cutter C, which, during the finishing of the thread, dresses the end into the desired shape, so that when the screw is discharged its shank is threaded and its point shaved, as shown in Figs. 3 or 4 of the drawing.

So far as the pointing is concerned, the operation described is substantially as has heretofore been accomplished in similar machines; but it will be seen that as the pointing-tool becomes dulled and requires greater pressure, the follower E being accessible at the rear end of arbor A through the screw F, the spring may be so far advanced that it will afford any desired degree of pressure without in any manner retarding the continuous operation of the machine. Moreover, in changing from long to short screws of the same diameter and thread, the machine need not be stopped for the adjustment of the spring to properly perform its work in affording the precise requisite pressure for holding the pointing-tool to its duty; and if the machine should have to be stopped for other purposes, the adjustment of the spring may best be made while the machine is in operation, in order that the exact required pressure may be attained, as evidenced by the

character of the work performed. It is also sometimes desirable that the spring be set forward in proportion as it becomes weakened through long use.

It is to be understood that I do not limit myself to the precise construction shown and herein described, as the same may be varied without departing from the spirit of my invention—as, for instance, in place of obtaining a yielding pressure upon the cutter by means of a spiral spring, another form of spring may be used, and other equivalent adjustable mechanism may be employed for graduating the power of said spring, and yet permit the adjustment thereof while the machine is in motion.

Therefore, having described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination, with a hollow spindle or arbor having a clamp for the threading-dies at one end and a pointing-tool within the arbor, of a follower for the tool actuated by a spring and controlled by a hand-screw adjustable at the rear end of the arbor, substantially as described, whereby the power of the spring in forcing the pointing-tool to its work may be readily graduated and adjusted, as set forth.

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Witnesses:

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