

W. N. WOODRUFF.
 Mechanism for Operating the Turrets of
 Screw-Machines.
 No. 214,543. Patented April 22, 1879.

Fig. 1.

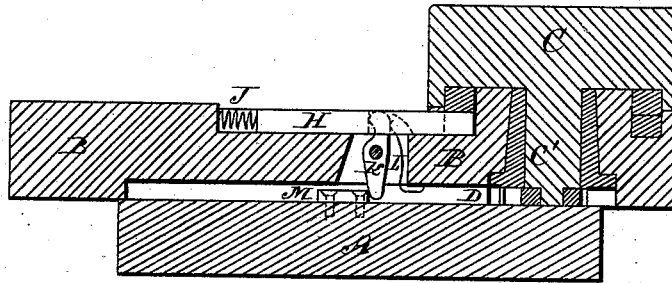


Fig. 2.

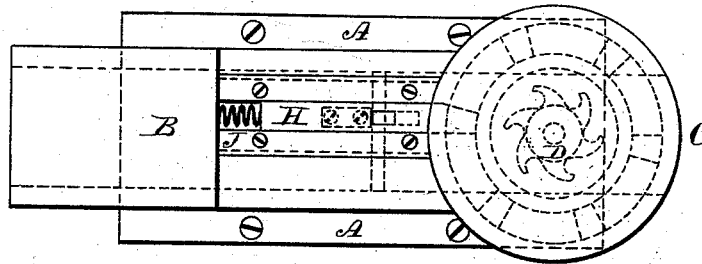
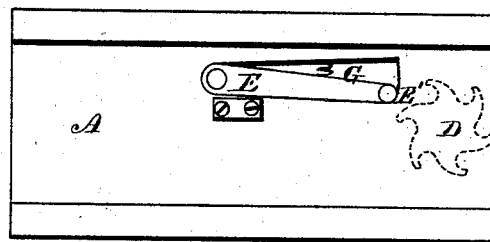


Fig. 3.



WITNESSES

Wilmot Horton

Wm. R. Curtis

INVENTOR

Wm. N. Woodruff

By Theo. G. Ellis, Attorney

UNITED STATES PATENT OFFICE.

WILLIAM N. WOODRUFF, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN MECHANISMS FOR OPERATING THE TURRETS OF SCREW-MACHINES.

Specification forming part of Letters Patent No. **214,543**, dated April 22, 1879; application filed January 18, 1879.

To all whom it may concern:

Be it known that I, WILLIAM N. WOODRUFF, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Mechanisms for Operating the Turrets of Screw-Making Machines, &c.; and I do hereby declare that the following is a full, clear, and exact description of the invention, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

In the class of screw-making machines called "turret machines" there is a rotating turret upon a sliding platform, around which the several tools for successively operating upon the screw are placed in suitable sockets, to be brought opposite the screw, usually held in a revolving head, by successive rotations through a certain portion of the circumference. The sliding platform upon which the turret is placed is commonly moved back and forth by a lever, and this motion is made to rotate, lock, and unlock the turret.

My improvement relates to such machines; and its object is to provide a simpler and more effective manner of operating the turret by the sliding movement given to it, to present the successive tools to the screw and withdraw them.

My invention consists in the construction and arrangement of the several parts, as will be hereinafter described.

In the accompanying drawings, Figure 1 is a sectional view through the turret and its slide, having my improvements attached. Fig. 2 is a top view of the turret and slide, showing my improvements, with some of the concealed parts represented by dotted lines. Fig. 3 is a top view of the part of the fixed frame of the machine upon which the turret and slide move back and forth, showing the pawl by which the turret is rotated.

A is a part of the fixed frame of the machine. B is the sliding plate which carries the turret. C is the turret, around which the tool-sockets are arranged in the usual manner, but which are omitted in the drawings,

as not forming part of my invention. The turret C turns in a suitable bearing of the usual construction, as shown at C'. D is a ratchet-wheel attached to the bottom of the turret, and by which it is rotated. E is a pawl, lying in a recess in the frame A, and having an upward-projecting pin, E', which engages with the teeth of the wheel D successively as the turret slides back and forth upon A. The spring G yields and allows the pin to pass over the tooth of the wheel when the turret moves to the right, as shown in the drawings, but engages the tooth and moves the turret when it is moved to the left. H is the locking-bolt, sliding in a groove in the plate B, and pressed forward into either one of a series of sockets around the turret, to hold it fast in its proper position as each tool is brought into position for use. J is the spring which presses forward the bolt H. K is a dog, passing through an opening in the plate B from the bolt H to the space below. It is pivoted to the plate B, as shown in the drawings. L is a light spring, acting against the top of the dog K. M is a cam attached to the fixed frame A, for operating the lower end of the dog K and moving the bolt H.

The operation of my invention is as follows: In the position shown in the drawings the turret is moved to the right, or so as to withdraw the tool from the work, and to be ready to be moved to the left. As the plate B, holding the turret, is moved to the left, the dog K mounts upon the cam M, and its top end draws the bolt H out of the socket in the turret, so as to unlock it and allow it turn. The pawl E now engages with the wheel D and turns it one tooth, the bolt H being held by the dog sliding upon the top of the cam M. As the sliding plate B moves farther to the left and the turret has turned sufficiently to present another tool, the dog K drops off the end of the cam and allows the bolt to spring into the proper socket in the turret to hold it firmly. When the turret again moves to the right it is not desired to unlock it or move the bolt H. The lower end of the dog K passes back over the cam M, and its top moves in a freed slot in the bolt, so as not to move it, pressing back the small spring L. As soon as the dog drops off from the cam, by its further movement the

spring L restores it to its first position, ready to again move the bolt.

What I claim as my invention is—

1. The combination of the bolt H, spring J, acting directly upon said bolt, dog K, moving freely back over the cam, and spring L upon the sliding plate B, with the stationary cam M upon the frame A, substantially as and for the purpose herein set forth.

2. The combination of the bolt H, cut away

as described, dog K, and fixed cam M, whereby the bolt H is drawn back and released by the movement of the plate carrying it, and the dog is free to return over the cam, substantially as herein described.

WM. N. WOODRUFF.

Witnesses:

THEO. G. ELLIS,

WILMOT HORTON.