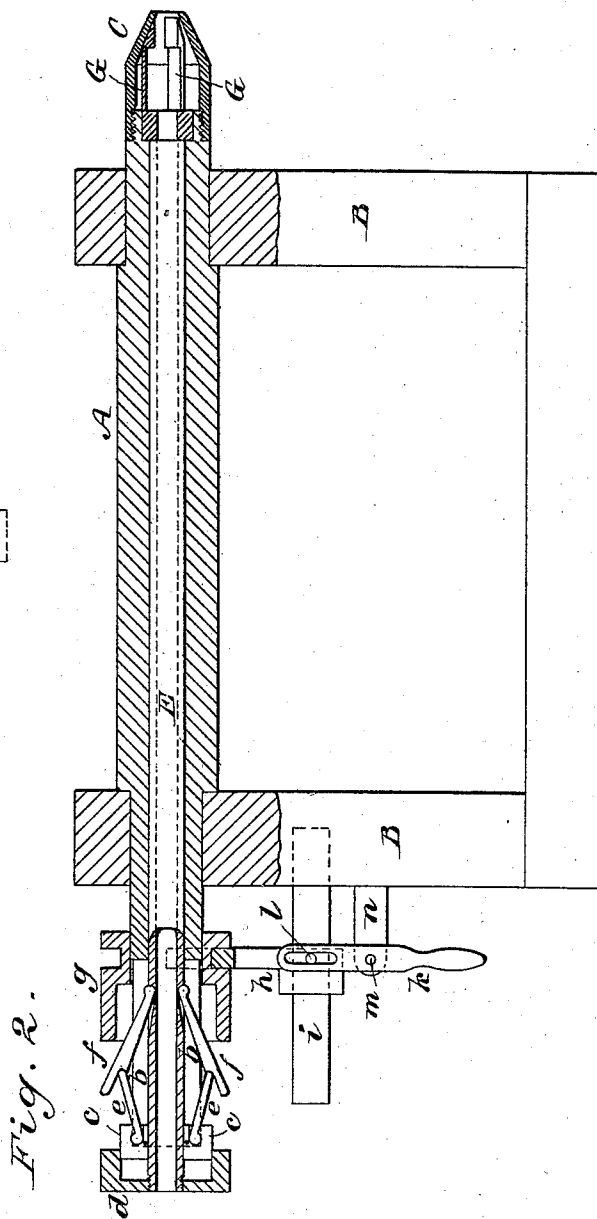
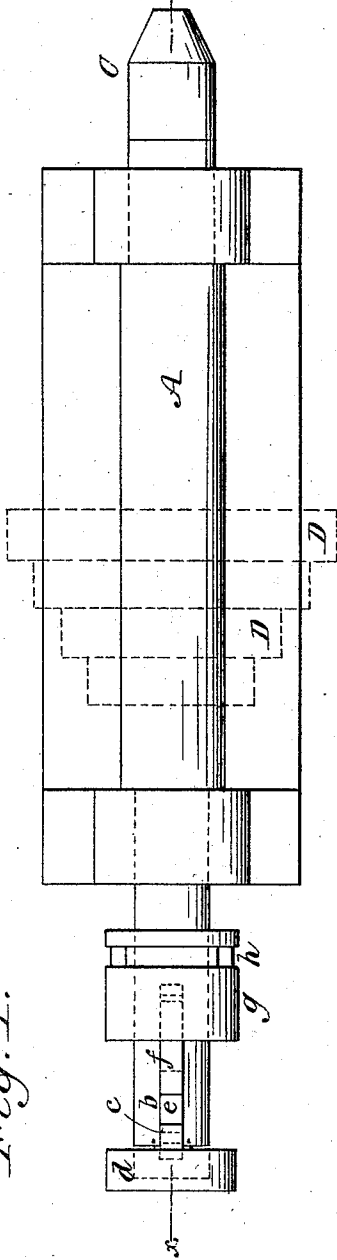


(No Model.)

A. T. BOOTH.
TURNING MACHINE.

No. 329,126.

Patented Oct. 27, 1885.



WITNESSES:

John H. Deemer
Edward M. Clark

INVENTOR:

Albert Booth
BY *Munn & Co*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

ALBERT T. BOOTH, OF MERIDEN, CONNECTICUT.

TURNING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 329,126, dated October 27, 1885.

Application filed September 23, 1885. Serial No. 177,910. (No model.)

To all whom it may concern:

Be it known that I, ALBERT T. BOOTH, of Meriden, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Turning-Machines, of which the following is a full, clear, and exact description.

This invention relates to machines for turning metal or wood, and is designed as an improvement upon the invention for which Letters Patent No. 300,943 were issued to me June 24, 1884, and in which, among others, the following elements were used, viz: a revolving tube or hollow shaft fitted with a hollow cone or nipple on its forward end, and a longitudinally-sliding tube arranged within said hollow shaft, and carrying on its forward end a spring-chuck for holding the work and rotating it in common with the hollow shaft, the work, as in the case of a piece of wire, being inserted through the longitudinally-sliding tube, and the spring-chuck being closed to hold it by the pressure of the hollow cone on the chuck as the sliding tube is projected forward and released from hold by drawing back said tube, which admits of the spring-chuck freeing itself.

The invention consists in certain means, substantially as hereinafter described, for operating and controlling the chuck, whereby the chuck is made to automatically tighten its hold on the work and may be readily released therefrom when required, and the mechanism for controlling the chuck is greatly simplified.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 represents a plan of a turning-machine in part embodying my invention, and Fig. 2 a vertical longitudinal section of the same on the line *xx* in Fig. 1.

A is the outer tube or hollow shaft, mounted to rotate in standards B B, and C the nipple or hollow cone on its forward end. Said shaft may be rotated by cone-pulleys D or otherwise.

E is the inner tube, arranged to slide longitudinally within the hollow shaft A, and carrying on its forward end, within the hollow cone C, the chuck G, which is made up of a series of spring-arms suitably shaped at their gripping or front ends, and having a tendency

to spring outward against the inner walls of the hollow cone, and which are closed on the work by being slid forward in common with the tube E, when the cone acts as a wedge to force inward the spring-arms of the chuck.

The rear end portion of the hollow shaft A has longitudinal slots *b b* in it, within which are fitted blocks *c c*, that enter at their rear ends a recess in a nut, *d*, which screws onto the projecting rear end of the inner tube, E. These blocks *c c*, which are attached to the outer shaft, have loosely fitted and engaged with them by a knuckle-joint toggle-levers *e e*, the front free ends of which engage with the free or outer end portions of opposite toggle-levers *f f*, that are loosely fitted and engage by a knuckle-joint at their inner ends with the tube E within the slots *b b*. Outside of these last-named levers *f f* is a sliding hollow sleeve or box, *g*, arranged upon the shaft A. This sleeve or box *g* is slid or operated by means of a fork-armed slide, *h*, made to engage an annular peripheral groove in said box, and arranged to slide on or along a fixed pin, *i*, projecting from the rear standard, B. The fork-armed slide *h* is actuated by a slotted hand-lever, *k*, engaging with a pin, *l*, on said slide, and having its fulcrum *m* on a fixed projection, *n*, of the standard.

By this construction, upon moving the sliding sleeve *g* to force inward the toggle-levers *e f*, the tube E will be moved forward to tighten the chuck G on the work. Upon giving a reverse movement, however, to the sliding sleeve *g* from off the toggle-levers the centrifugal action produced by the revolving shaft will cause the toggle-levers to be thrown outward, thereby drawing back the tube E and releasing the chuck from its hold on the work. This toggle-lever motion essentially differs from another arrangement for feeding wire in which spring-toggles having a sliding collet arranged over them are used, and which are combined with an arbor and sleeve to operate the holding-chuck, the loosening of which is not automatically effected by centrifugal action.

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

1. The combination, with the hollow shaft A and the inner longitudinally-sliding tube, E, having a hollow cone, C, and spring-chuck

G applied, respectively, to their forward ends, of the toggle-levers *e f* and the blocks *c c*, arranged to fit longitudinal slots in the hollow shaft, substantially as and for the purpose
5 herein described.

2. The combination of the sliding sleeve or box *g*, the forked slide *h*, and lever *k* with the hollow shaft A, the inner longitudinally-sliding tube, E, the hollow cone C, the spring-

chuck G, and the toggle-levers *e f*, connected, 10 respectively, with the hollow shaft and its inner sliding tube, essentially as shown and described.

ALBERT T. BOOTH.

Witnesses:

JOHN Q. THAYER,
STEPHEN HODGES.