(No Model.) 2 Sheets—Sheet 1.

F. DOELLBOR.

MACHINE FOR TURNING PEARL OR OTHER BUTTONS.

No. 507,794. Patented Oct. 31, 1893.

Fig. 1.

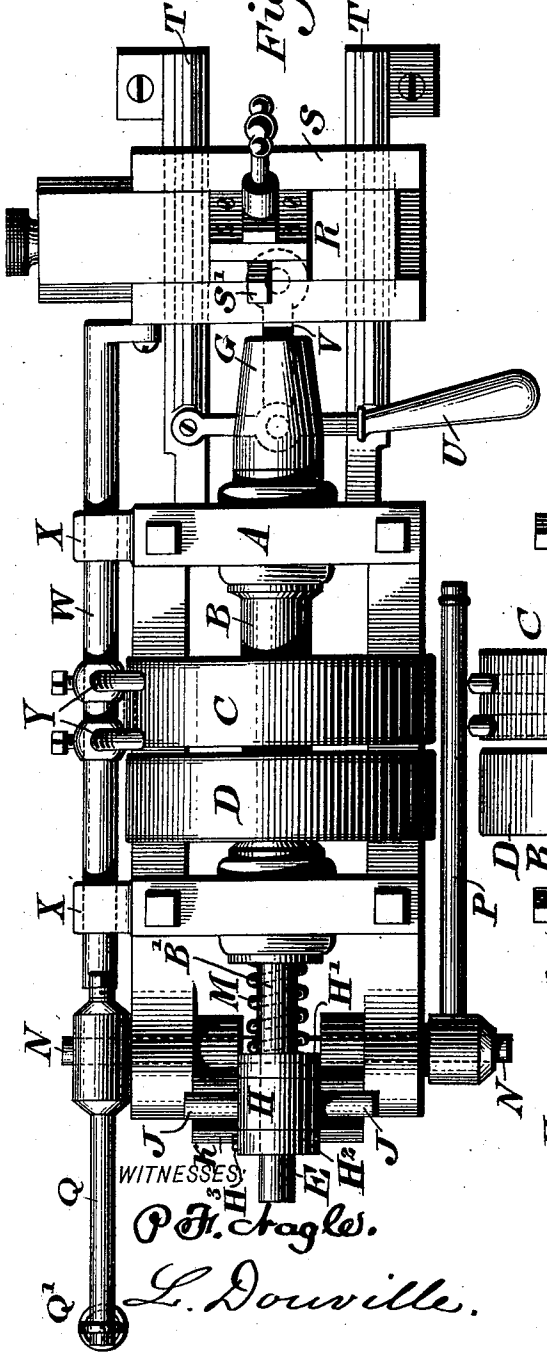
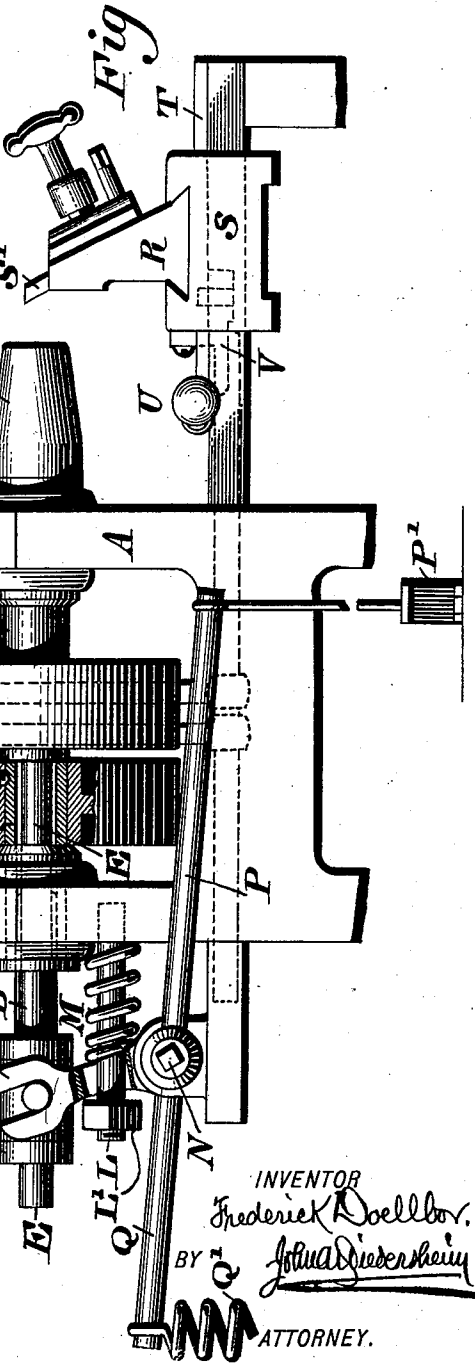


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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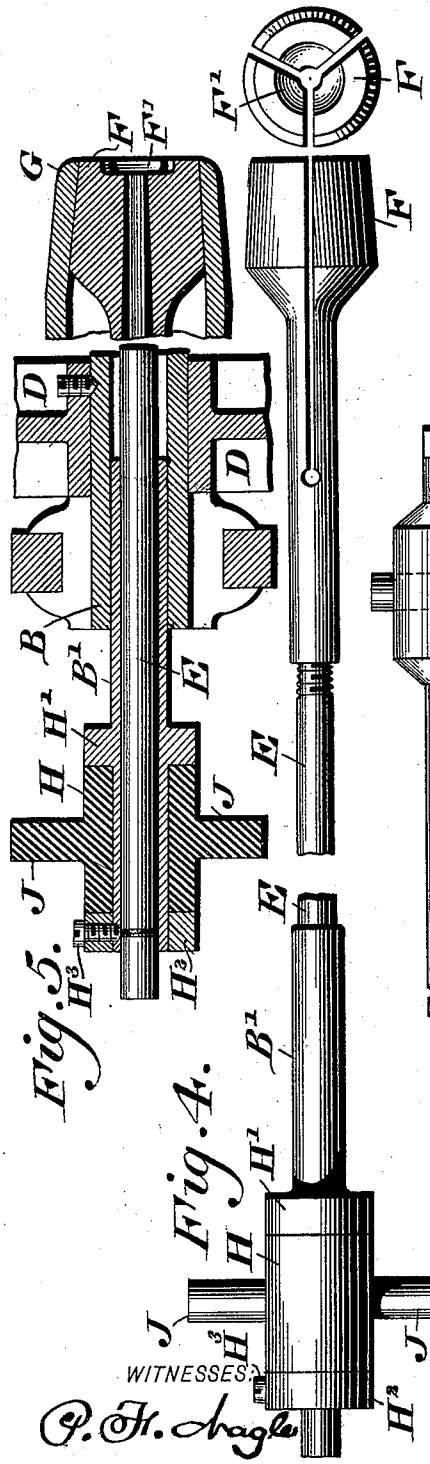

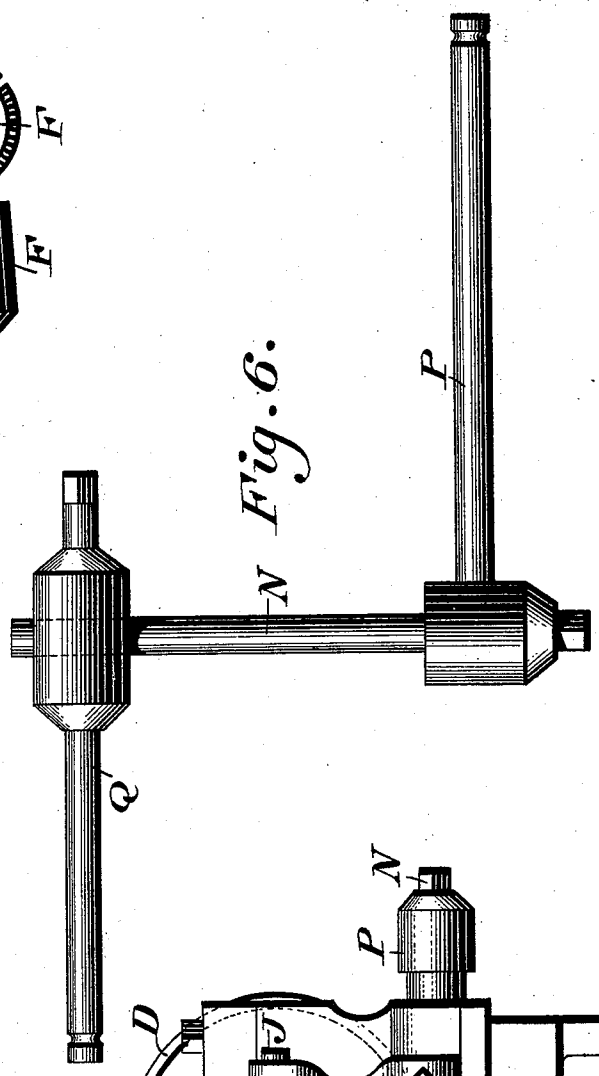

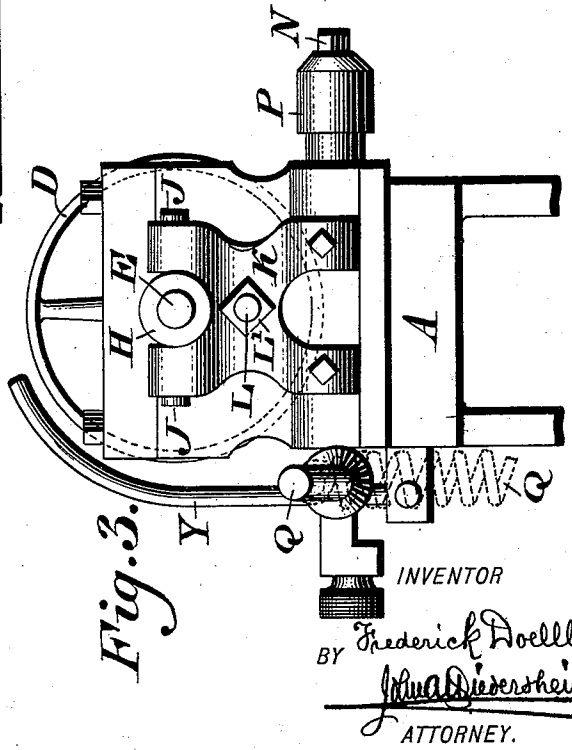

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FREDERICK DOELLBOR, OF PHILADELPHIA, PENNSYLVANIA.

MACHINE FOR TURNING PEARL OR OTHER BUTTONS.

SPECIFICATION forming part of Letters Patent No. 507,794, dated October 31, 1893.

Application filed August 22, 1893. Serial No. 483,769. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK DOELLBOR, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Machines for Turning Pearl or other Buttons, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a machine for turning pearl or other buttons and analogous articles, embodying a clutch for holding the blank while being subjected to the tool or cutter, novel means for closing and releasing the head of said clutch, and novel means for operating the tool or cutter, as will be hereinafter set forth and pointed out in the claims that follow the specification.

Figure 1 represents a top or plan view of a turning machine embodying my invention. Fig. 2 represents a partial side elevation and partial vertical section thereof. Fig. 3 represents an end view thereof. Fig. 4 represents a top view of a detached portion, on an enlarged scale. Fig. 5 represents a longitudinal section of a detached portion on an enlarged scale. Fig. 6 represents a top view of the rock shaft of the machine and connected parts.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings: A designates the frame of the machine, and B designates a hollow mandrel which is mounted thereon, and provided with the loose and fixed pulleys C and D. Within the mandrel is a sliding stem E, one end of which carries a split or contractible and expansible head F, which is inclosed by the head G on the mandrel, said heads F and G constituting a chuck for holding a blank to be formed into a button or analogous object, which blank is inserted in a recess F′ in the head F, it being noticed that the interior face of the head G and the exterior face of the head F are conical or tapering, so that when the head F is moved forward it is contracted so as to clamp the blank, and when it is moved backward or restored to its normal position, it is permitted to expand, in which latter case the button or button head will be released.

H designates a collar which is fitted on a sleeve B′ the latter freely entering one end of the mandrel B, and freely encircling the stem E, said collar being retained between the shoulder H′ on the sleeve B′, and the sleeve H^2 which is fitted on the outer end of the sleeve B′, and is provided with a screw H^3 which passes through said sleeve H^2 and sleeve B′, and enters a groove in the stem E, see Fig. 5.

The collar H is provided with gudgeons J, with which engages the forked lever K, which is connected with a rock shaft N, whose bearings are on the frame A, said lever having a slot between its ends through which is passed the threaded pin or bolt L, which is secured to the adjacent upright of the frame A, and is encircled by a spring M which bears against said upright and the proper portion of said lever, the tension of said spring and the throw of the lever K, and consequently of the stem E being adjusted by the nut L′ on said bolt L. Projecting from the shaft N, are arms P, Q, the arm P having attached to it a foot treadle P′, and the arm Q having attached to it, the spring Q′, the latter being secured to the base of the machine or the floor upon which it rests, and serving to restore said arms and connected parts to their normal positions, the spring M also serving to restore the lever K, the collar H, and the stem E and connected parts to their normal positions.

R designates a tool carrier or rest, which is mounted on the carriage S, the latter being supported on the ways T, on the frame A, said carrier being transversely-movable on the carriage S, and the latter longitudinally-movable on the ways T, so that the cutter or tool S′ may be adjusted to the work to be performed, and then moved to and from the same.

U designates a lever which is mounted on the frame A, and connected with the carriage S by means of a link V, whereby by the operation of said lever, longitudinal motions in opposite directions may be imparted to the carriage S, and consequently to the cutter or tool mounted thereon.

Connected with the carriage S is a shaft W, which is adapted to slide in ears X on the frame A, and it carries the belt shipper Y which latter is located adjacent to the pulleys C and D.

The operation is as follows: A blank is in-

serted in the recess F′ in the head F, through the open end of the head G, and the treadle P′ is now depressed, whereby the head F is advanced and contracted by the action of the head G, the blank being accordingly clamped. The head F receives motion from the stem E, the latter being operated by the collar H, the lever K and shaft N due to the action of said treadle P′. The lever U is now moved, in the present case to the left, whereby the cutter is advanced to the blank, and owing to the shaft W, the belt is shifted from the loose to the fast pulley, whereby the mandrel B is rotated, and with it the head G, which being in frictional contact with the head F, rotates the latter, and thus the blank in motion, is subjected to the cutter or tool S′. When the work is accomplished, the lever U is moved to the right, whereby the cutter recedes from the shaped blank or button, and the belt is shifted from the fast to the loose pulley, owing to the motion of the shaft W, whereby rotation of the heads F and G ceases. The treadle is then let go, and the stem E is drawn back by the action of the spring M, whereby the head F recedes from the head G, so that it is permitted to expand, and the button being no longer held by said head F, drops from the same through the head G, so that another blank may take its place, after which the treadle P′ is depressed and said blank clamped, and the other operations hereinbefore described are repeated.

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

1. In a turning machine, a frame, a hollow mandrel mounted thereon, a sleeve entering said mandrel and having a collar mounted thereon, a stem in said sleeve having an expansible head, a rocking shaft with lever engaging said collar, and mechanism substantially as described for operating said shaft, said parts being combined substantially as described.

2. In a turning machine, a frame, a mandrel mounted thereon carrying loose and fast pulleys, a carriage movable on said frame, a shaft connected with said carriage and journaled on said frame, a belt shifter on said shaft, and a lever mounted on the frame and having a link connection with the said carriage, said parts being combined substantially as described.

3. In a turning machine, a frame, a hollow mandrel mounted thereon, a sleeve in said mandrel carrying a collar, a stem in said sleeve having a head for holding a button, a rocking shaft with a lever engaging said collar, an arm connected with said shaft and provided with a treadle, and an arm connected with said shaft and provided with a spring, said parts being combined substantially as described.

4. In a turning machine substantially as described, the rotatable stem E, and the chuck formed by the heads F and G, the collar H with gudgeons J, the stem passing freely through said collar, the swinging lever K engaging said gudgeons, the rock shaft N carrying said lever, means for rotating said rock shaft, a bolt passing freely through said lever and connected with the frame of the machine, and a spring bearing against said lever, the parts being combined substantially as described.

5. In a turning machine, a chuck, a sliding stem carrying the contractible head of said chuck, a collar freely fitted on said stem and provided with gudgeons, a swinging lever engaging said gudgeons, a rock shaft on the frame carrying said lever, and the treadle and spring arms P, Q, connected with said shaft, the parts named being combined substantially as described.

6. In a turning machine, a chuck, a sliding stem carrying the contractible head of said chuck, a sleeve on said stem through which the latter freely passes, a non-rotatable collar fitted on said sleeve, and means for retaining it in position thereon, the collar having gudgeons with which engages a swinging lever, whereby the sliding stem is operated, as stated.

FREDERICK DOELLBOR.

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A. P. JENNINGS.