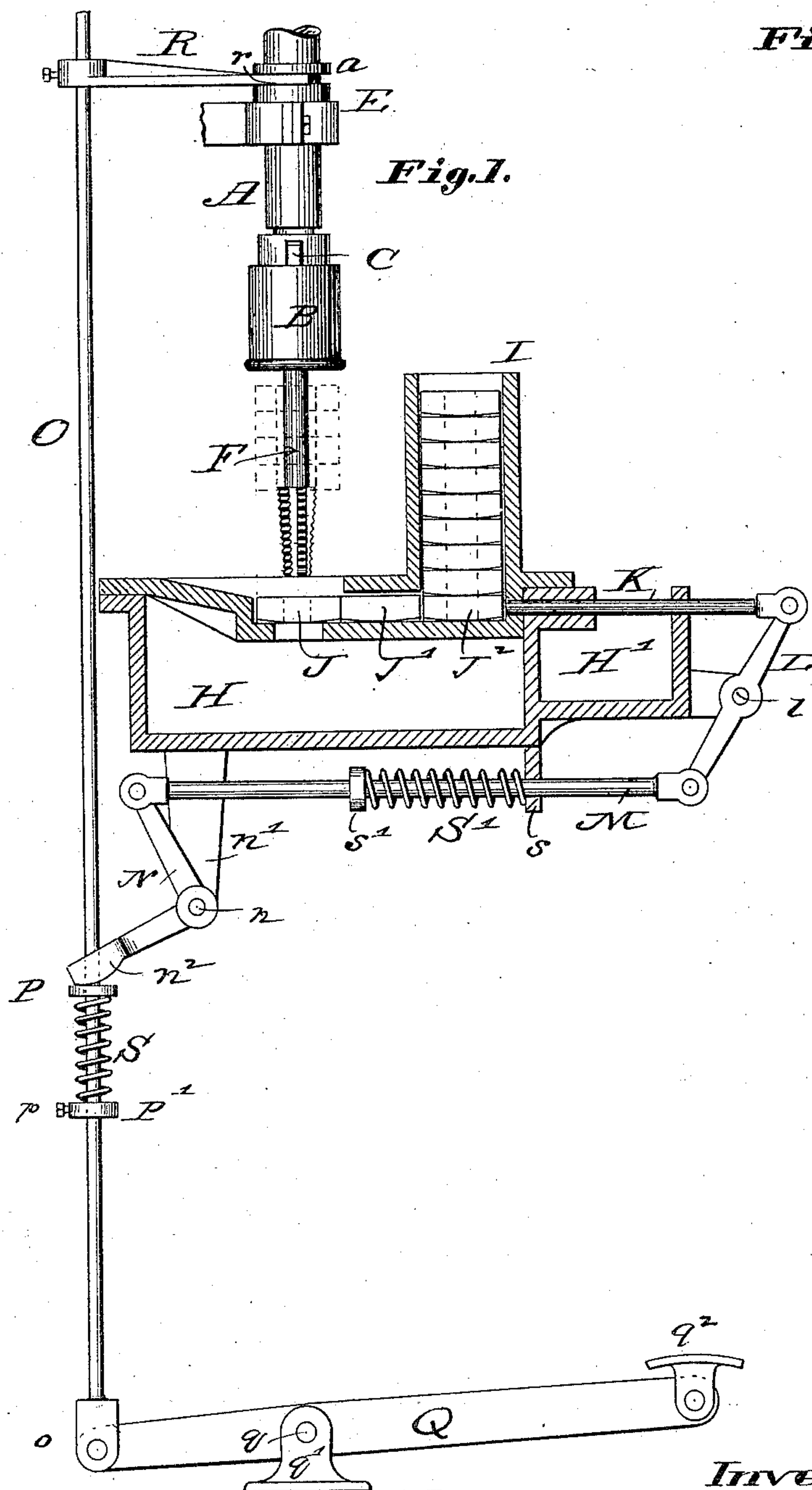


(No Model.)

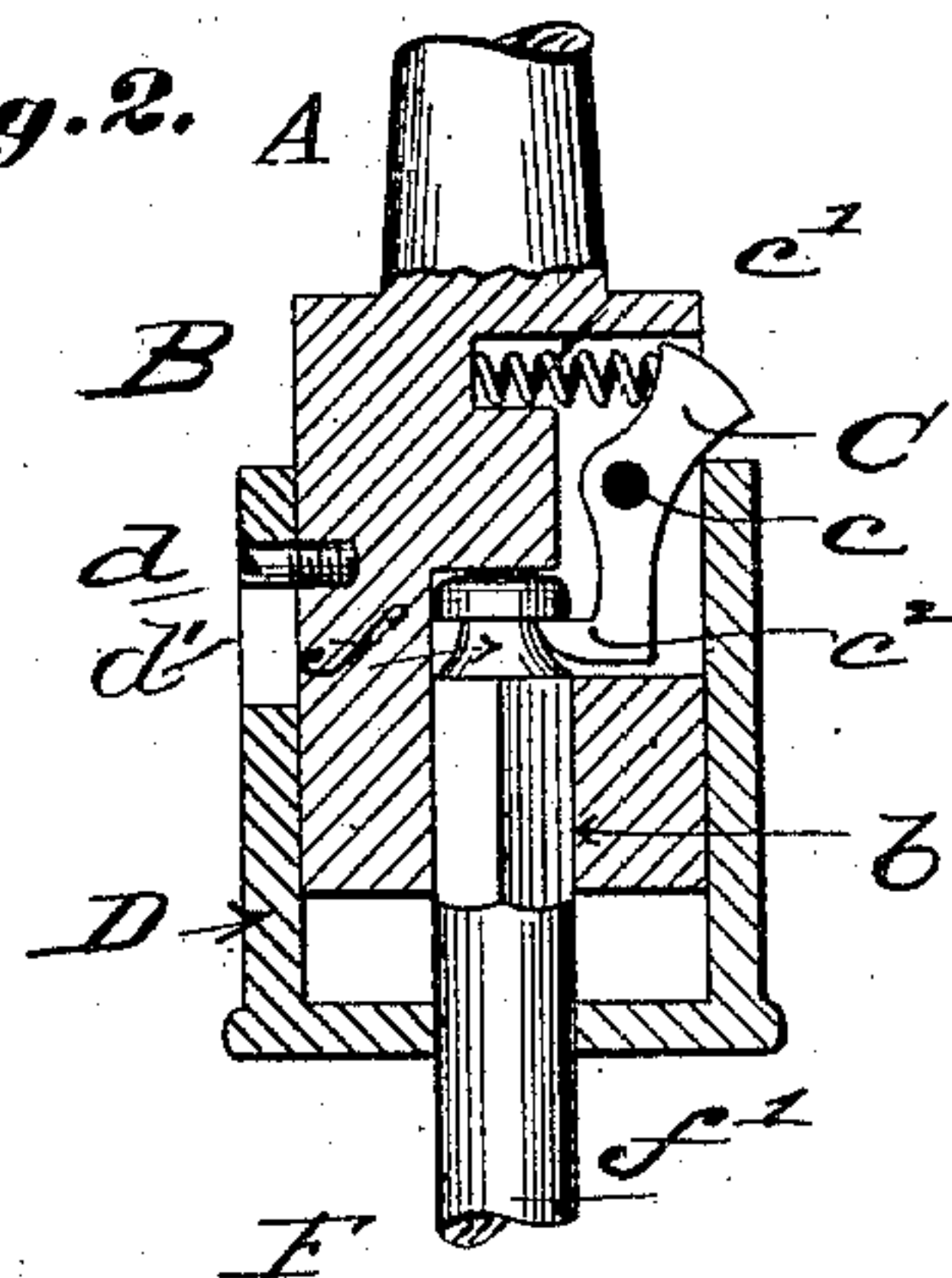
LA ROY BARTLETT.  
NUT TAPPING MACHINE.

No. 283,745.

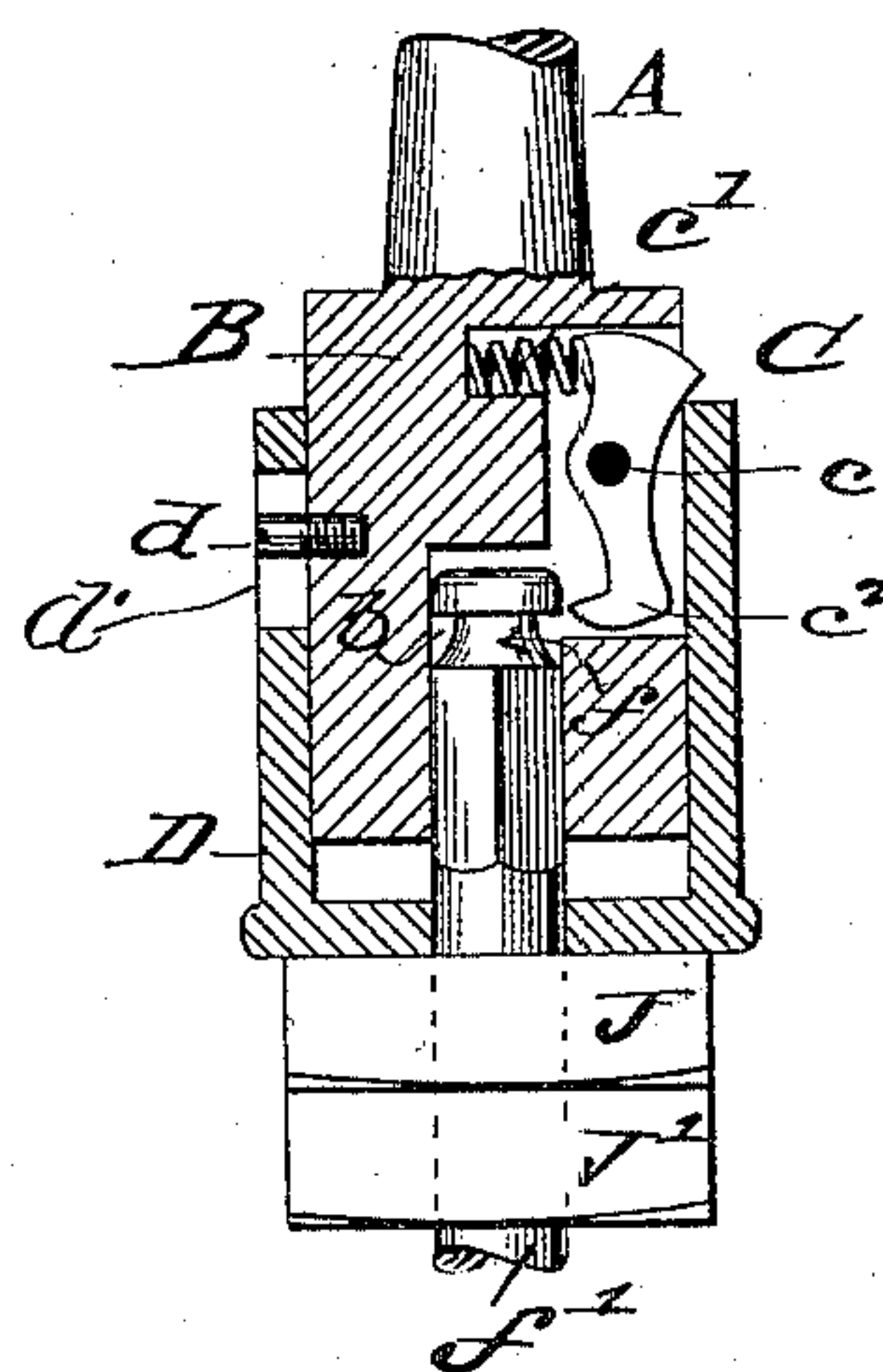
Patented Aug. 28, 1883.



*Fig. 2. A*



*Fig. 3.*



## *Inventory*

Lal Roy Bartlett  
by C. Moody atty

*Attest:*  
*Thos. L. Jones.*  
*Charles Pickles*



# UNITED STATES PATENT OFFICE.

LA ROY BARTLETT, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO  
HENRY H. WELLMAN, OF SAME PLACE.

## NUT-TAPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 283,745, dated August 28, 1883.

Application filed December 1, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, LA ROY BARTLETT, of St. Louis, Missouri, have made a new and useful Improvement in Nut-Tapping Machines, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a side elevation, partly in section, of the improved machine; Fig. 2, a sectional elevation, upon an enlarged scale, of that part of the machine immediately connected with the upper end of the tap; and Fig. 3, a view similar to that of Fig. 2, the tap being detached from its holder.

The same letters denote the same parts.

By means of the present improvement the tap is automatically detached from the spindle while the spindle is in motion.

The improvement further relates to the means for feeding the nuts to the tap.

A represents the spindle of the machine. At its lower end the spindle has a socket, B. The spindle and socket may be in one piece. As shown, the socket is detachable from the spindle.

C represents a pawl or catch pivoted at *c* in the socket B. The upper end of the catch is pressed outward by means of the spring *c'*.

D represents a sleeve sliding freely in a vertical direction upon the socket B. The pin *d*, fixed to the socket B, and moving in the slot *d'* in the sleeve, prevents the sleeve from slipping off the socket B.

E is a bearing, in which the spindle A rotates.

F represents a tap. It is inserted in the socket, the socket *d* being squared to prevent the tap from turning therein, and the tap being upheld in the socket by means of the catch C, the point or hook *c'* of the catch engaging in the groove *f*, near the upper end of the tap. The tap, thus connected with the spindle, rotates therewith. The usual means (not here shown, as its construction is well understood) is employed for imparting the desired rotary motion to the spindle and tap.

H is a tank holding oil and water. The tank is suitably supported in position beneath the tap. The support, however, is not shown,

as its special construction is inconsequential to my present purpose.

I is a tube for holding the nuts to be tapped.

J is a nut in position for being tapped.

J' J<sup>2</sup> J<sup>3</sup>, &c., represent the succeeding nuts to be tapped.

K represents a plunger for moving the nuts into position to be tapped.

L represents a lever pivoted at *l*—a fixed part of the structure. A rod, M, connects the lever L and the bell-crank lever N. This last-named lever is pivoted at *n* to some suitable fixture, *n'*, of the frame of the machine, and the lower arm, *n''*, of the lever is forked to embrace the rod O.

P P' are collars, the collar P being loose upon the rod O, and the collar P' being fixed upon the rod O, and at the desired point thereon, by means of the small set-screw *p*.

S represents a spiral spring encircling the rod O, and at its lower end bearing upon the collar P'.

S' is a spiral spring encircling the rod M, and bearing at one end against the fixed point *s* of the frame, and at its other end bearing against the collar *s'*, which is fixed upon the rod M.

R represents an arm which is attached to the rod O, and which, at its outer end, *r*, is forked to embrace and engage with the spindle A, the spindle being suitably grooved at *a* to receive the end *r* of the arm R. This last-named connection enables the spindle to be raised and lowered by means of the rod O. The rod O, at its lower end, *o*, is jointed to the lever or treadle Q, which in turn is pivoted at *q* to a fixed fulcrum, *q'*. The operator's foot is applied to the treadle at *q''*.

H' is a receptacle suitably supported in the machine, in the immediate vicinity of the tank H and tube I. It may be used as a receptacle for the blank nuts before being put into the tube I.

In operating the machine the nuts are placed in the tube I, as shown in Fig. 1. The operator then places his foot upon the treadle Q, and operates the same until a nut has been transferred from the bottom of the tube I into position beneath the tap, as shown at J, Fig. 1—that is, the depression of the foot-rest *q''*



causes the rod O to be lifted, and this in turn, through the parts P P' S N M L, causes the plunger K to be moved across the bottom of the tube I. This movement of the plunger K causes the nut to be transferred from the position occupied by the nut J<sup>2</sup> into the position of the nut J'. A second movement of the treadle causes the nut J' to be transferred into the position of the nut J, and so on. The spindle A, being in motion, is, by means of the treadle Q, rod O, and arm R, raised sufficiently to enable the attendant to insert the tap F in the socket B, as shown in Fig. 2, in which position the sleeve D has been slipped downward upon the socket B sufficiently to enable the point or hook c<sup>2</sup> of the catch C to engage in the groove f in the tap. The attendant then removes his foot from the treadle Q, whereupon the spindle and tap drop downward, the tap entering the nut J and forming the thread therein in the usual manner. When this nut J has been tapped, the operator, by means of the treadle Q, lifts the spindle and tap, the nut J being upon the shank f' of the tap. When the point of the tap has been raised a short distance, and before the spindle and tap have been raised to their upward limit, the collar P presses against the lower arm, n<sup>2</sup>, of the bell-crank lever N, and transmits motion to the rod M, lever L, and the plunger K, the plunger K thus operating to push another nut, J', into position for tapping. The attendant then removes his foot from the treadle Q, whereupon the spindle and tap drop again and tap a second nut, J'. As soon as the tap begins to cut the nut, the pressure exerted by the collar P upon the lower arm of the bell-crank lever N being relieved, the spring S' forces the plunger K back to its original position, in which position it is ready for bringing the next nut into place beneath the tap. As the plunger K is withdrawn from the lower end of the tube I the blanks in the tube I drop downward, the lowest one coming into position for being forced toward the tap. The operation is repeated until the shank f' has been strung with the tapped nuts, as indicated by the broken lines in Fig. 1. When the nuts have been thus strung upon the tap upward as far thereon as is practicable, and so as to come in contact

with the lower end of the sleeve D, the dropping of the spindle causes the sleeve D to slip upward upon the socket B. This upward movement of the sleeve forces the upper end of the catch C inward into the socket and the lower end of the catch outward sufficiently to detach the lower end of the catch from the groove f in the tap. The tap is thus automatically detached from the socket B. The attendant now removes the tap with the tapped nuts thereon, and, having removed the nuts from the tap, the tap is inserted again in the socket B and the operation is repeated. It is thus seen that the operation is accomplished without arresting the rotation of the spindle.

I claim—

1. The spindle A and the socket B, the vertical pawl C, pivoted in the socket B, and having hooked end c<sup>2</sup>, the spring c', connected with said pawl, the sleeve D, and the tap F, having groove f, all constructed and operating as described, whereby the upward movement of the sleeve, acting on the projecting edge of pawl C, will disengage the pawl from the tap, while the downward movement of the sleeve permits the engagement of the pawl on the tap, all as set forth and described.

2. The combination of the treadle Q, the rod O, the arm R, the spindle A, the socket B, the catch C, the sleeve D, and the tap F, substantially as described.

3. The combination of the treadle Q, the rods O M, the collars P P', the spring S, the levers N L, and the plunger K, as and for the purpose described.

4. The combination of the treadle Q, the rods O M, the collars P P' s', the springs S S', the levers N L, and the plunger K, substantially as described.

5. The combination of the treadle Q, the rods O M, the collars P P' s', the springs S S', the levers N L, the plunger K, the tube I, the arm R, the spindle A, the socket B, the catch C, the sleeve D, and the tap F, substantially as described.

LA ROY BARTLETT.

Witnesses:

C. D. MOODY,  
SAML. S. BOYD.