# I. JOHNSON & M. BYE.

## Machines for Drilling and Reaming Pistol Barrels.

No. 148,960. Patented March 24, 1874.

Fig. 1.

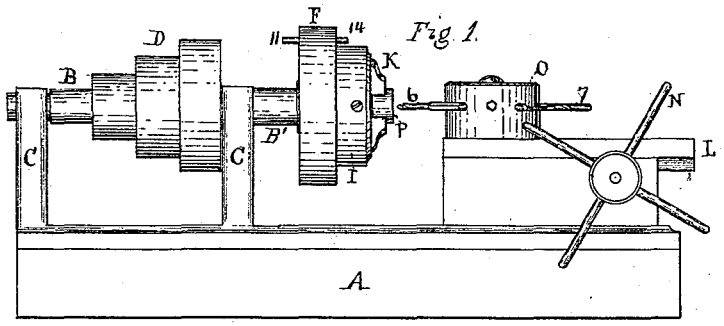



Fig. 2.

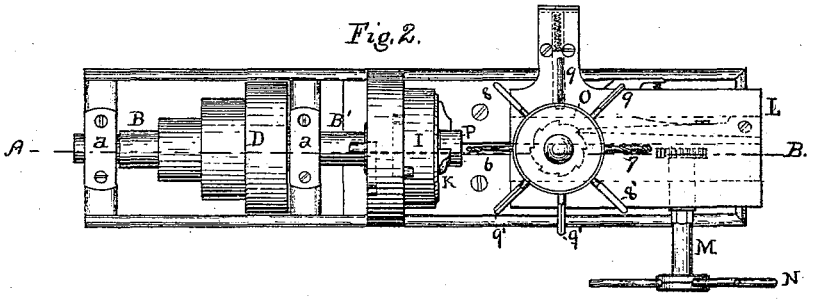



Fig. 3.

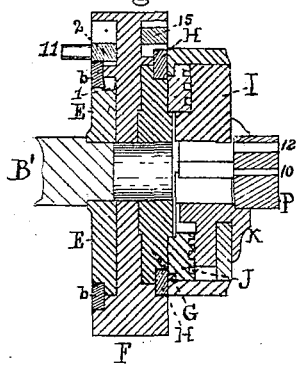



Fig 4

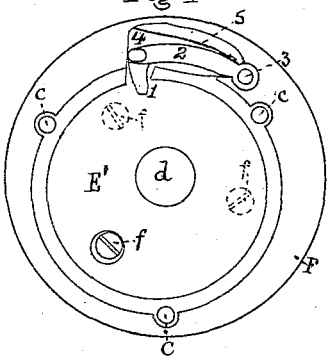
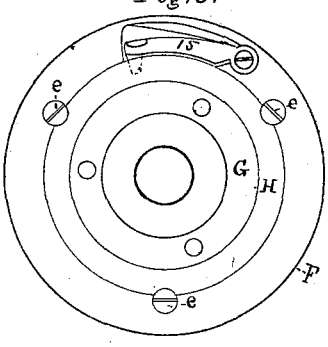



Fig. 5.




Witnesses

Thos. G. Dodge

C. C. Moore

Inventors

Ivar Johnson.

Martin Bye

# UNITED STATES PATENT OFFICE.

IVER JOHNSON AND MARTIN BYE, OF WORCESTER, MASSACHUSETTS.

## IMPROVEMENT IN MACHINES FOR DRILLING AND REAMING PISTOL-BARRELS.

Specification forming part of Letters Patent No. **148,960**, dated March 24, 1874; application filed March 7, 1874.

*To all whom it may concern:*

Be it known that we, IVER JOHNSON and MARTIN BYE, both of the city and county of Worcester and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Machines for Drilling and Reaming Pistol-Barrels; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 represents a side view of our machine for drilling and reaming pistol-barrels. Fig. 2 represents a top or plan view. Fig. 3 represents a vertical central section of a portion of the machine on line A B, Fig. 2; and Figs. 4 and 5 represent opposite views of detached parts of the machine, which will be more fully described hereafter.

To enable those skilled in the art to which our invention belongs to make and use the same, we will proceed to describe it more in detail.

In the drawings, the part marked A represents the bed of the machine, which is to be supported upon suitable legs; or it may be placed upon a bench, as preferred. B is a shaft, fitted to turn in suitable bearings *a a* in the bearing-pieces C C, and provided with a series of pulleys, D, similar to a common lathe. Upon the front end B′ of this shaft is fastened an eccentric plate, E, upon the back of which one corner is turned out to receive the inner edge of the holding-ring *b*, which fits partly into said eccentric plate and partly into a corresponding corner turned out of the adjusting-pulley F, as fully shown in Fig. 3. Holding-ring *b* is held in place, and at the same time secured to the adjusting-pulley F, by means of three screws, which enter the holes *c c*, (shown in Fig. 4,) half of the depth for the head of the screw being cut out of holding-ring *b*, and half out of the edge of the adjusting-pulley F. The outer face of the eccentric plate E, which fits the space E′ in the adjusting-pulley F, is provided with a series of notches or holes to receive the stop-point 1 of the arms 2, which is pivoted at 3 in a recess cut in the back side of the adjusting-pulley F. The pivoted arm 2 works in a recess, 4, cut in the side of the adjusting-pulley F, and is held down, as shown in Fig. 4, by a plate-spring, 5, one end of the spring being fastened to the arm, while the other end bears against the slot or recess 4. The space E′, cut or formed in the side of adjusting-pulley F, is of the same eccentricity as the eccentric plate E, whereby, when the adjustable pulley F is placed in position upon the eccentric plate E, and turned to the position shown in Fig. 3, the central hole *d* will be on a line with the end B′ of the shaft B, so that when the latter is revolved the adjustable pulley F will be revolved around its center, and one of the notches in the face of eccentric plate E is cut so as to receive the stop-point 1 of arm 2, for holding the parts together in this position, and then, by means of the other notches cut in the face of eccentric plate E, the adjusting-pulley F can be turned and set so as to revolve about a center, more or less eccentric to or out of line with its true center. The front side of adjustable pulley F is turned out to receive the chuck scroll-plate G, and which is held in place by holding-ring H by means of screws *e*, the heads of which screws are set partly into ring H and partly into the front side of adjustable pulley F. The chuck scroll-plate G, together with the chuck I, which is fastened to it, can be turned independently of adjustable pulley F. The chuck scroll-plate G is secured to the scroll-piece J of the chuck by means of the screws *f*, as indicated in full and dotted lines, Fig. 4. To insert these screws *f* a hole is bored through the side of adjustable pulley F, as indicated in Fig. 4, and after one screw, *f*, has been inserted and screwed through scroll-plate G into the chuck, both of said pieces are turned until another screw-hole in the scroll-plate G comes opposite the hole in the side of the adjustable pulley F, when another screw is inserted, and so on until the necessary number of screws have been inserted to securely hold the chuck to the scroll-plate G—three being used in this instance. The chuck I is provided with clamping-jaws K for holding the pistol-barrels, and, as the chuck is constructed and operated in the usual mode now generally practiced, no further description of the chuck is necessary. L is a sliding table, provided with a rack upon its under side, into which a gear on the end of shaft M meshes, whereby said table can be

run back and forth as occasion may require. Upon the front end of this table is mounted a rotating table, O, having a ratchet-wheel attached to its lower end, as indicated by dotted lines, Fig. 2. Table O is provided with two stationary drills, 6 and 7, and two sets of reamers, 8 9 9, 8′ 9′ 9′, the reamers 8 8′ being half-round, and the reamers 9 9′ having five angles, or what are called by the trade "five-square."

The operation of drilling and reaming pistol-barrels is as follows: A blank pistol-barrel, P, being placed in the chuck, a rapid motion being communicated to the shaft B, in the usual manner, the operator takes hold of one of the arms N and turns shaft M, thereby running tables L and O forward, causing drill 6 to enter and drill the central hole 10 in the barrel P, after which motion of shaft M is reversed, and as it is drawn back the ratchet-wheel of table O is acted upon by a stationary spring-pawl, (shown in dotted lines, Fig. 2,) and as table L is drawn farther back, table O is turned by means of said pawl and ratchet-wheel, so as to bring reamer 8 into position on a line with the hole 10 in the barrel, after which said reamer is run in and withdrawn the same as drill 6 was, and the operation continues until both reamers 9 have been run in, and the central hole in the barrel is completed. The operator now raises arm 2 by means of the projection 11, and withdraws point 1 from its notch in the eccentric plate E, after which adjustable pulley F is turned so as to bring the chucks and blank pistol-barrel out of center sufficiently to have the blank barrel stand in such a position that the holes for the barrels of the pistol can be drilled and reamed the same as the central hole 10 was drilled and reamed, only drill 7 is used instead of drill 6. After one barrel-hole, 12, has been drilled and reamed, by means of drill 7 and reamer 8′ 9′ 9′, the operator, by means of projection 14, raises arm 15 and withdraws its stop from the scroll-plate G, when chuck I can be turned sufficiently to bring the blank barrel in position to drill the next barrel-hole, and the operation is continued until all the barrel-holes are drilled and reamed—there being as many notches in the scroll-plate G as there are barrel-holes to be drilled.

Arm 15 is pivoted, and held down by a spring, to cause its stop-point to enter the notches in the scroll-plate G, in a slot cut or formed in the front side of adjustable pulleys F, in the same manner as arm 2 is on the back side of said pulley.

A proper spring-catch is employed to hold table O in position while the drills and reamer are in operation, but which stop is withdrawn to allow the table O to be rotated to bring the next drill or reamer into operation, as the case may be, when table L is withdrawn.

From the foregoing description, it will be seen that after the blank pistol-barrel P has been placed in the jaws K of the chuck I, it does not have to be removed therefrom until the central hole and all the barrels have been drilled and reamed, thus rendering the work very perfect and uniform, while at the same time saving a great amount of time in adjusting the blank barrel, and chuck-jaws and chuck, as the operation was practiced previous to our said invention.

Having described our improvements in machines for drilling and reaming pistol-barrels, what we claim therein as new and of our invention, and desire to secure by Letters Patent, is—

1. The combination, with the notched eccentric plate E on the end B′ of the shaft B, of adjustable pulleys F, notched scroll-plate G, and suitable pawls or stops, substantially as and for the purposes set forth.

2. The combination, with the notched eccentric plate E, chuck I, and scroll-plate G, of adjustable pulley F, provided with stop-arms 2 and 15, and holding-rings *b* and H, said parts being constructed and combined together for operation substantially as and for the purposes set forth.

3. The combination, with the eccentric plate E, adjustable pulley F, scroll-plate G, and chuck I, of the table L and rotating table O, provided with a series of drills and reamers, substantially as and for the purposes set forth.

IVER JOHNSON.
MARTIN BYE.

Witnesses:
THOS. H. DODGE,
E. E. MOORE.