(No Model.)

W. H. JOHNSON.

BOLT CUTTING MACHINE.

No. 367,404. Patented Aug. 2, 1887.

Fig. 2.

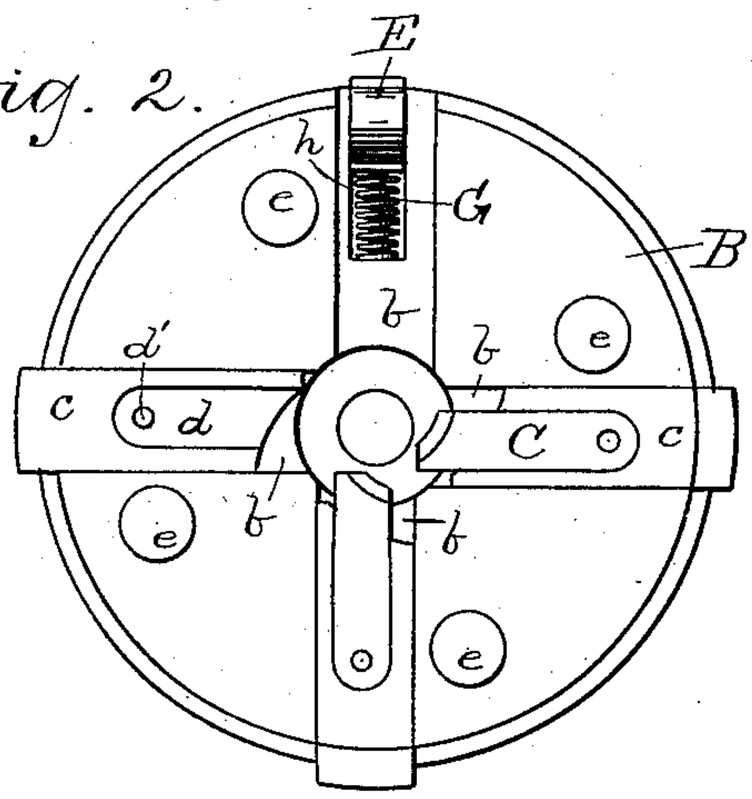


Fig. 1.

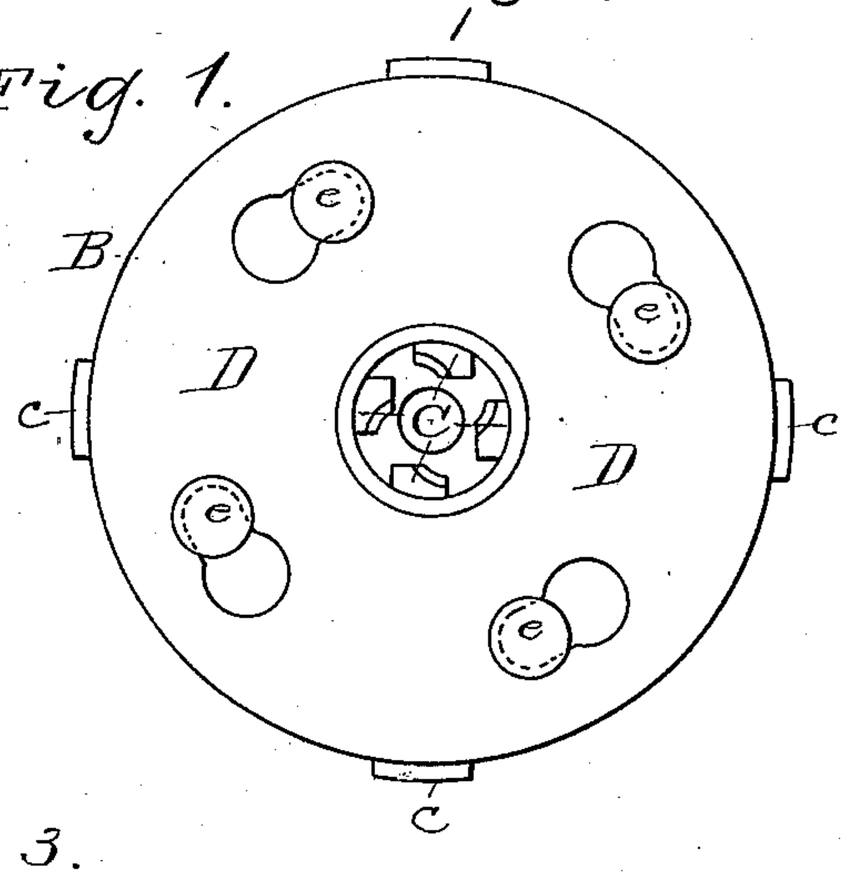


Fig. 3.

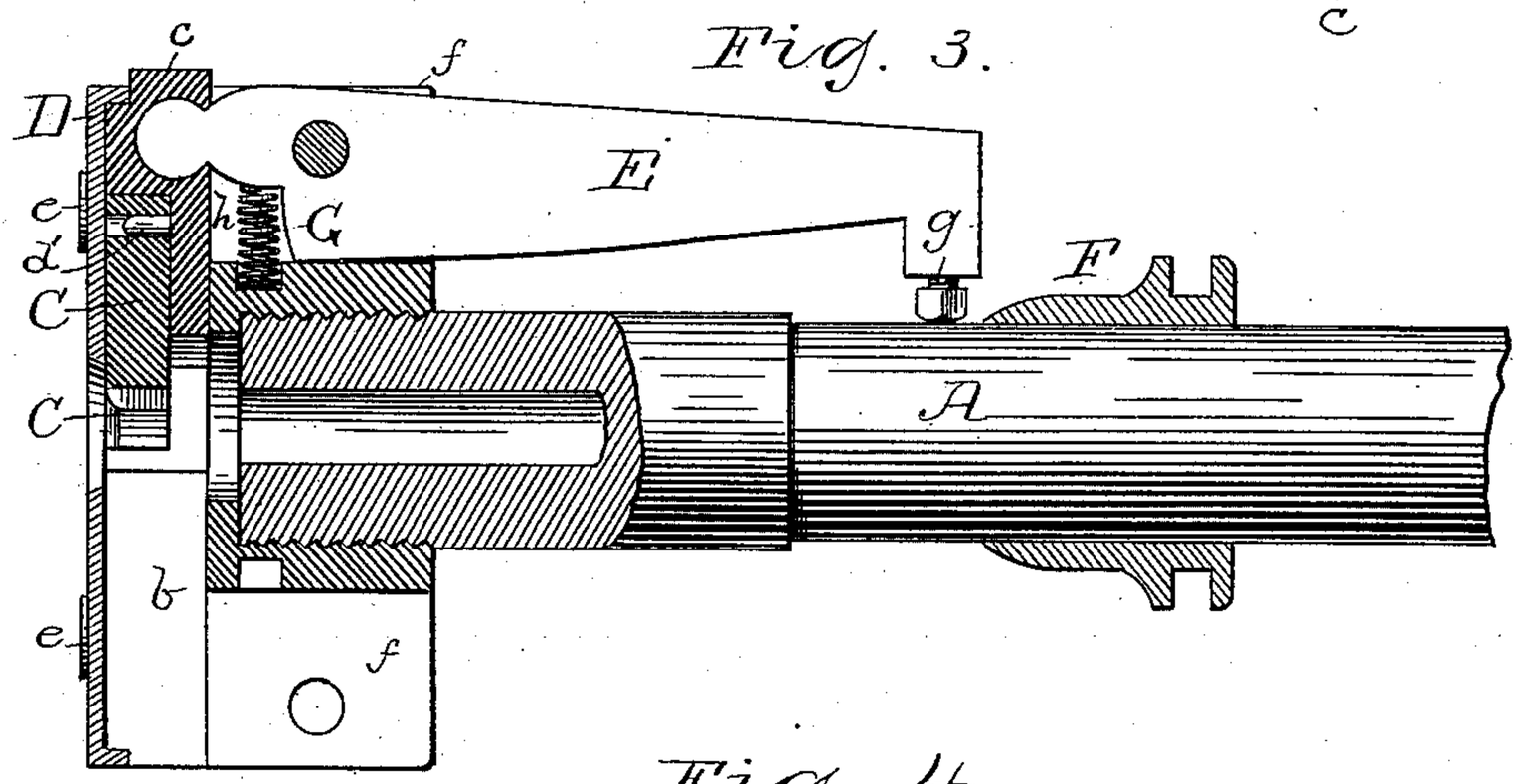
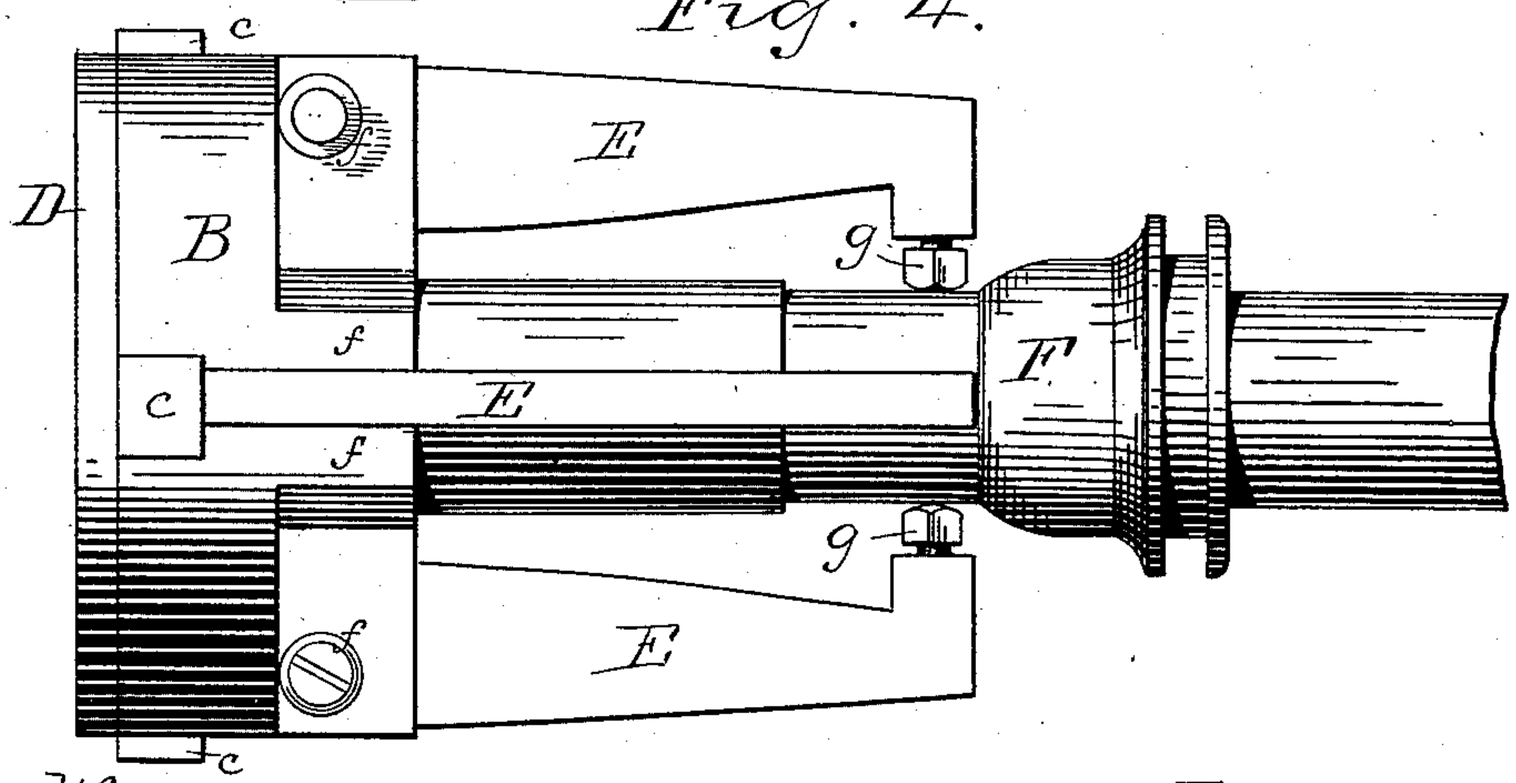


Fig. 4.



Witnesses;
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atty

UNITED STATES PATENT OFFICE.

WILLIAM H. JOHNSON, OF RACINE, WISCONSIN, ASSIGNOR OF ONE-HALF TO THE HURLBUT MANUFACTURING COMPANY, OF SAME PLACE.

BOLT-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 367,404, dated August 2, 1887.

Application filed January 15, 1886. Serial No. 188,629. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. JOHNSON, of Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Bolt-Cutting Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to new and useful improvements in bolt-cutting machines, by the use of which the dies can be easily disengaged and replaced as desired, and can easily be adjusted to cut threads on blank bolts of any diameter.

In the drawings, Figure 1 is a front elevation of my invention. Fig. 2 is a front view thereof with the face-plate removed and with some of the dies and a die-stock removed. Fig. 3 is a longitudinal vertical section, and Fig. 4 is a side elevation, thereof.

Referring to the drawings, A represents a mandrel having permanently secured to its end, as shown, a circular head, B, and being stepped to a less diameter a short distance to the rear of said head. The head B is provided with a central opening and has in its face four grooves, *b b*, radiating from said central opening. Placed and fitting snugly in these grooves *b b*, and capable of a radial reciprocation therein, are the die-stocks *c c*. These stocks *c* are provided at their inner ends, on the side facing outward, with longitudinal depressions *d*, the outer ends of which are preferably rounded and the other ends open to the central opening of the head B. Projecting from the bottom of these depressions are the pins *d'*. In these depressions *d*, I place the dies C C, which correspond in dimensions thereto, and are, moreover, provided with lateral openings registered with reference to said pins *d'*, so that when placed in the depressions the pins can pass through said holes.

In order to prevent the dies C C from working out of the stock *c* when the machine is in operation, I provide head B with a face-plate, D, having circumferential flanges, which, when the plate is in position, rest in an annular rabbet in the contiguous circumferential edges of said head B. This plate has a central opening, corresponding in diameter to the central hole in head B, to permit the feeding of the rough bolts to the dies. It is also provided with four holes elongated in a direction struck from the center of the plate. These holes are enlarged or of greater diameter at one end, so that when the plate D is placed against the head B the studs *e e*, projecting therefrom, may pass through them, and are of a less diameter at the other end, so that by turning said plate in a direction toward the larger end of the hole the flanges of the heads of said studs project over the edges of the narrower ends of said holes, thus preventing the withdrawal of said plate.

It is apparent that instead of the means for securing plate D to head B other means can be used—for instance, ordinary screws passing through the former into the latter.

Near the upper ends of the die-stocks *c*, I provide suitable bearings for the articulating head of levers E, which are placed, as shown, in grooves *h h*, leading longitudinally to the rear from grooves *b b*, and which are fulcrumed between lugs *f f*, made integral and projecting from head B. The levers E E pursue a longitudinal course to the rear until over the stepped portion of the mandrel, where they are turned inward toward the same. The extremities of these inward-turned ends of the levers E are tapped to receive set-screws *g g*, having rounded heads which abut against the mandrel.

Placed loosely, and having a longitudinal motion on the mandrel, is a cone, F. This cone is provided with a circumferential groove for the reception of the arms of a bifurcated shifter rod or lever, by means of which said cone is shifted longitudinally. When the cone F is shipped toward the head, it strikes against screws *g g*, which are forced outward by its inclined sides, thus oscillating levers E, so that the die-stock and dies are urged inward against the work or toward the center of head B. In order to return the levers E and contingent mechanism to their original position when the

cone is shipped away from head B, I cut away the under surface of the levers E between the fulcrum and head thereof, and set in recesses in the bottom of grooves *h* under said cut-away portion the coil expansion-spring G. When the cone is withdrawn from said head, the expansion of said spring G restores the said mechanisms to their normal position.

Any kind of spring can be substituted for spring G which will perform its function. I do not, therefore, confine myself to the form of spring G, as shown.

If it is desired to drive the dies farther in upon the work every time the cone is shipped, the screws *g* are manipulated to push the contiguous ends of the lever out. Thus, when the cone is shifted under said screws, the dies are brought nearer together or farther apart to accommodate the diameters of different-sized bolts.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a bolt-cutting machine, the combination, with head B, having grooves *b b*, studs *e e*, as described, projecting from its face, levers E, and dies C, of the plate D, having holes therein elongated in a direction struck from the center of the plate and having a central opening, as and for the purpose set forth.

2. In a bolt-cutting head, the combination of mandrel A, head B, dies C in radiating grooves in the face of said head, levers E, and set-screws *g g* in the ends of said levers.

In testimony that I claim the foregoing as my own I hereunto affix my signature in presence of two witnesses.

WILLIAM H. JOHNSON.

Witnesses:

CHARLES B. HURLBUT,

FRANK D. THOMASON.