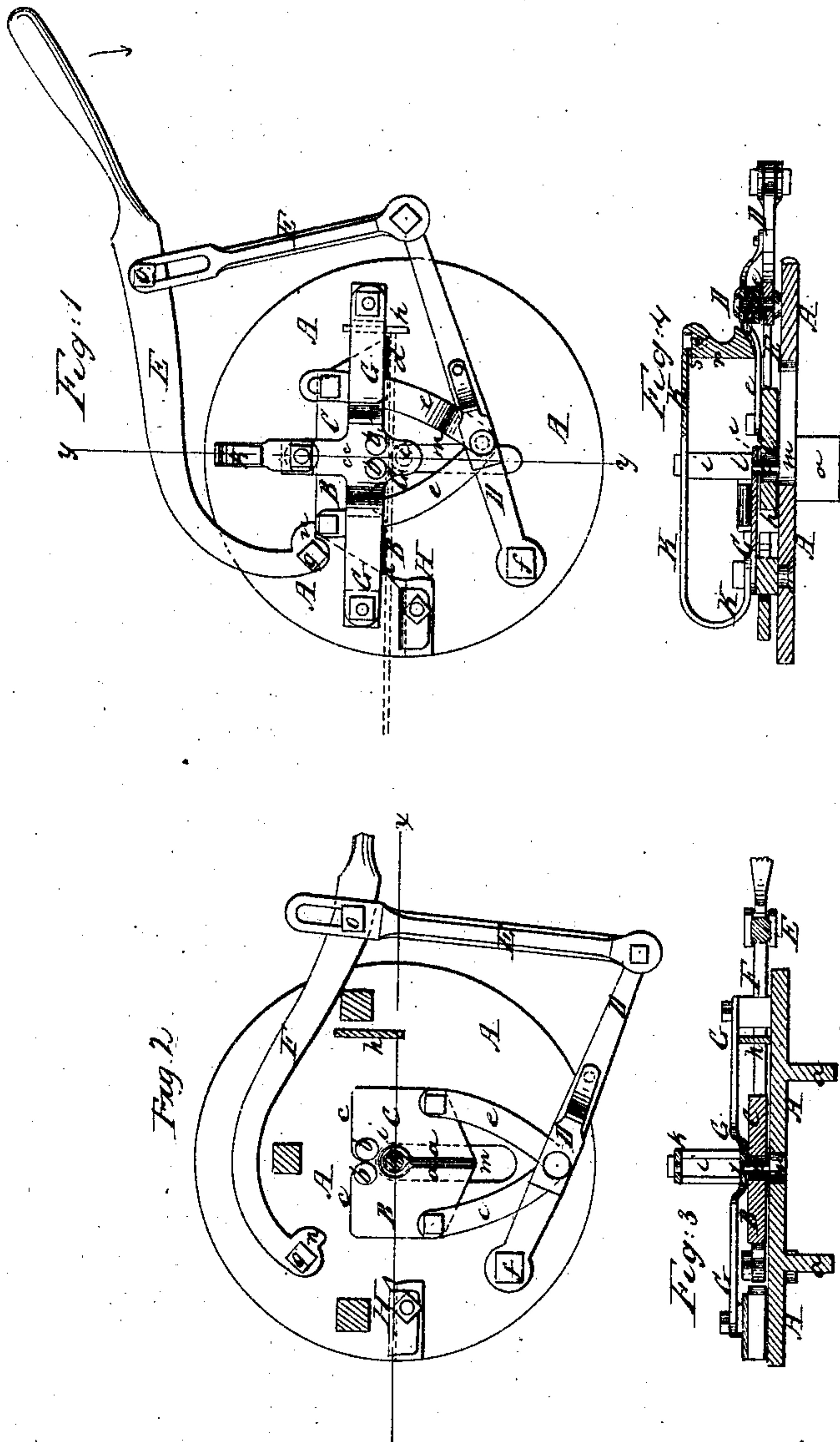


*N. Adams.*

*Making Keys for Bolts.*

*N<sup>o</sup> 69,740.*

*Patented Oct. 15, 1867.*



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# United States Patent Office.

NATHAN ADAMS, OF ALTOONA, PENNSYLVANIA.

Letters Patent No. 69,740, dated October 15, 1867.

## IMPROVED MACHINE FOR MAKING KEYS FOR BOLTS.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, NATHAN ADAMS, of Altoona, in the county of Blair, and State of Pennsylvania, have invented a new and improved Machine for Making Keys for Bolts; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan or top view of my invention.

Figure 2 is a similar view, partly in section.

Figure 3 is a vertical sectional view of the same, the plane of section being indicated by the line *x x*, fig. 1.

Figure 4 is a vertical sectional view of the same, taken on the line *y y*, fig. 1.

Similar letters of reference indicate like parts.

This invention relates to a machine for making split or spring-keys for securing bolts.

The invention consists in the use of dies and levers, whereby the bar from which the key is to be made is cut, bent into the required shape, and then dropped; the whole operation requiring but two moves of a lever. The whole machine being very small and compact, does not require much power to operate it.

A is a circular plate, made of metal or any other suitable material. To the under side of this plate are secured two lugs *a a*, whereby the machine may be secured in a common vise. To the upper surface of the plate A are pivoted the dies B and C, their pivoting points *b* being in one of the corners in each die, so that, by turning the dies on the same, either the edges *c* or *d* of the dies may touch each other. By means of arms *e e* the dies are secured to a bar, D, which is pivoted to the plate A at *f*, and is, by means of a slotted rod, E, connected with the main lever F, so as to turn on its pivot *f* as soon as the lever turns on its pivot *g*.

Before inserting the bar from which the key is to be made the machine is in the position shown in fig. 1; that is, the faces *c c* of the dies touching each other, the faces *d d* forming the straight line. The bar is then inserted, as indicated by red lines in fig. 1, being passed along the line *d d* until it strikes the gauge *h*, which is securely fastened to the plate A. A pin, *i*, is suspended from a spring, K, by which it is pressed down, until a shoulder, *l*, on it (figs. 3 and 4) comes in contact with a stationary bridge, G, which is securely fixed to the plate A. This pin is arranged exactly above a slot, *m*, in the plate A, and when the dies are closed, as in fig. 2, they fit around the pin, being provided with semicircular recesses for the purpose. The metal bar, when passed into the machine, as in fig. 1, lies between the edges *d d* of the dies and the pin *i*. The lever F is now moved in the direction of the arrow in fig. 1, and presses, by means of a cam, *n*, near its pivoting-point, against the outer corner of the die B. The slot in the connecting-rod E prevents the lever from acting on the same until the pin *o* strikes the lower end of the slot. By the pressure of the cam *n* the bar is pressed against a cutter, H, which is secured to plate A, and the length of bar necessary for one key is thus cut. The motion of the lever F is continued in the same direction, and thereby the dies B and C are folded together into the positions shown in fig. 2, bending, by this movement, the bar around the pin *i*, and pressing its ends together, as shown by red lines in fig. 2. The lever F is now moved back again into the position shown in fig. 1, and the pressure of the dies on the newly-formed key ceasing, the latter drops through the slot *m* in the plate A into a suitable receptacle. But in case it might still adhere to the pin *i*, it is necessary to raise the said pin, to disengage the key from it. This is done by means of a cam, *r*, which is pivoted to the extreme end of the spring K, (see fig. 4,) in such a manner that its lower end is below the upper surface of the bar D. By a shoulder, *s*, on *r*, the latter is prevented from being turned back as it comes in contact with the bar D, during the backward movement of the lever F, and so, as the lever F and bar D move in the direction opposite to that which is indicated by the arrow in fig. 1, the latter bar comes in contact with the curved lower surface of the cam S, and raises the same, as it cannot turn it back. Thereby the spring K, and consequently also the pin *i*, are raised, the latter sufficiently to be completely disengaged from the key. During the forward movement of the lever F the bar D passes under the cam *r* without raising the same, turning it forward until it has passed below far enough to enable the cam *r* to drop, by its own gravity, into the position shown in fig. 4, when it can be acted upon again during the backward stroke of the bar D.

Thus, it is seen, that to operate this machine, it is only necessary to move the lever back and forth, and to

feed the bar. The latter will then be cut and formed into the required shape, and dropped from the machine, without requiring any more attention from the operator.

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

1. The device for cutting the bar, consisting of the cam *n* on the lever *F*, die *B*, and cutter *H*, all made and operating substantially as herein shown and described.
2. The combination of the gauge *h* with the cutter *H*, die *B*, and cam *n* on lever *F*, substantially as set forth.
3. The spring *K*, provided with the pin *i* and cam *y*, in combination with the bar *D*, substantially as described, for the purpose specified.
4. The construction and arrangement of the slotted plate *A*, pivoted dies *B C*, arms *e e*, pivoted bar *D*, slotted rod *E*, lever *F*, having cam *n*, cutter *H*, stationary bridge *G*, gauge *h*, spring *K*, having cam *y* and pin *i*, all operating as described, for the purpose specified.

NATHAN ADAMS.

Witnesses:

PETER N. MARKS,

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