(No Model.) 3 Sheets—Sheet 1.

# J. H. KRESSLER.

## RIVET HEADING MACHINE.

No. 307,056. Patented Oct. 21, 1884.

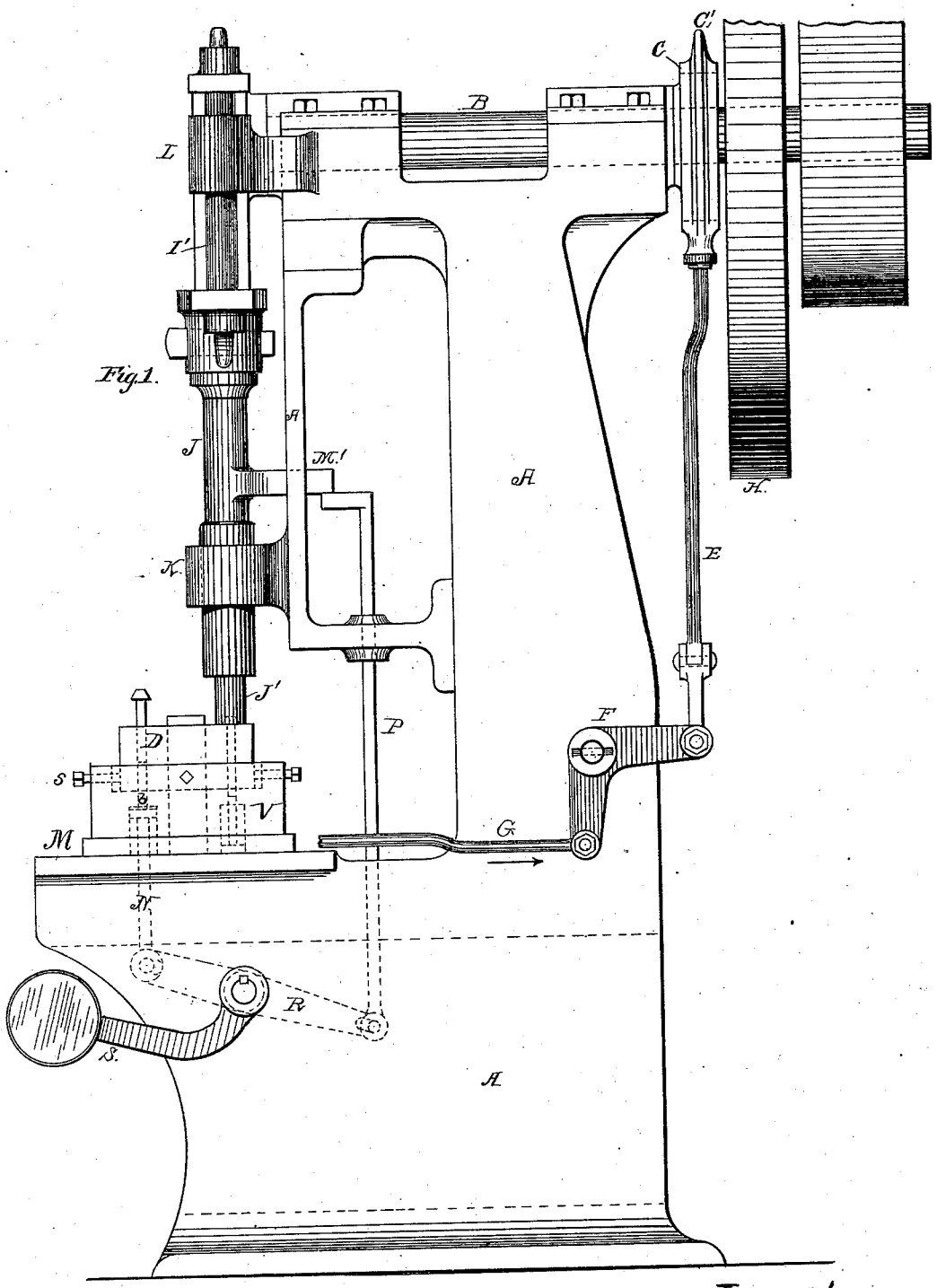



Fig. 1.

Witnesses:
Harry E. Wise.
Jacob F. Arnold

Inventor.
John H. Kressler

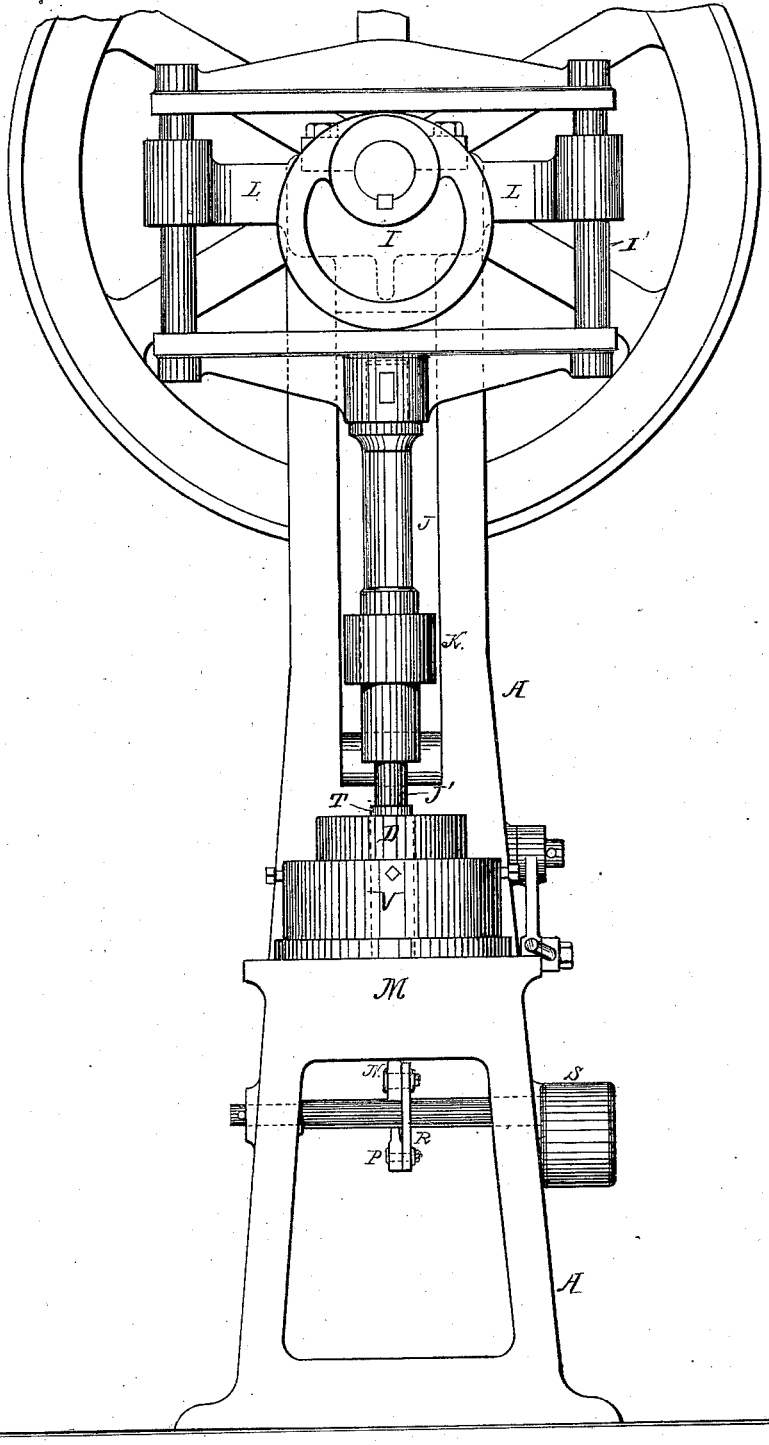
(No Model.) 3 Sheets—Sheet 2.

# J. H. KRESSLER.

## RIVET HEADING MACHINE.

No. 307,056. Patented Oct. 21, 1884.

Fig. 2.




Witnesses:
Harry E. Wise
Jacob F. Arnold

Inventor:
John H. Kressler

(No Model.) 3 Sheets—Sheet 3.

# J. H. KRESSLER.

## RIVET HEADING MACHINE.

No. 307,056. Patented Oct. 21, 1884.

Fig. 3.

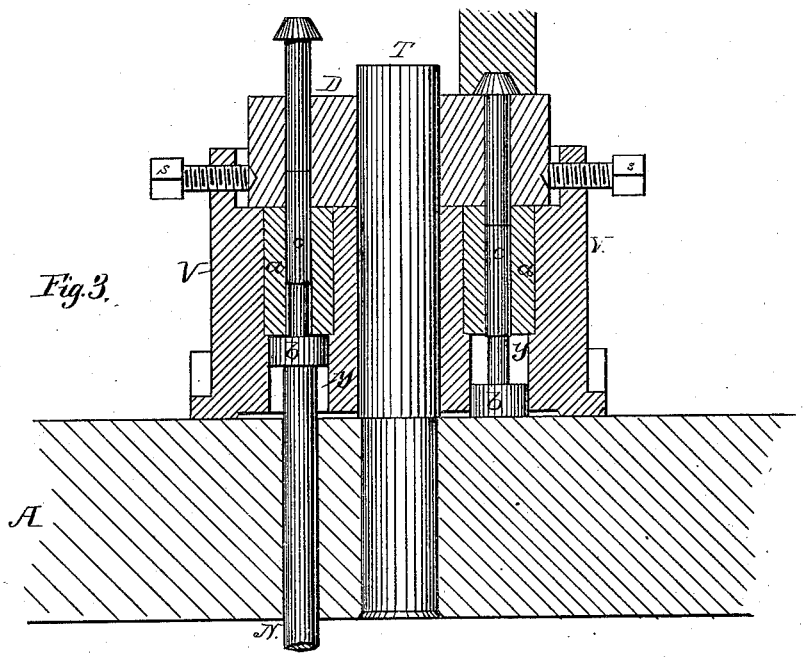
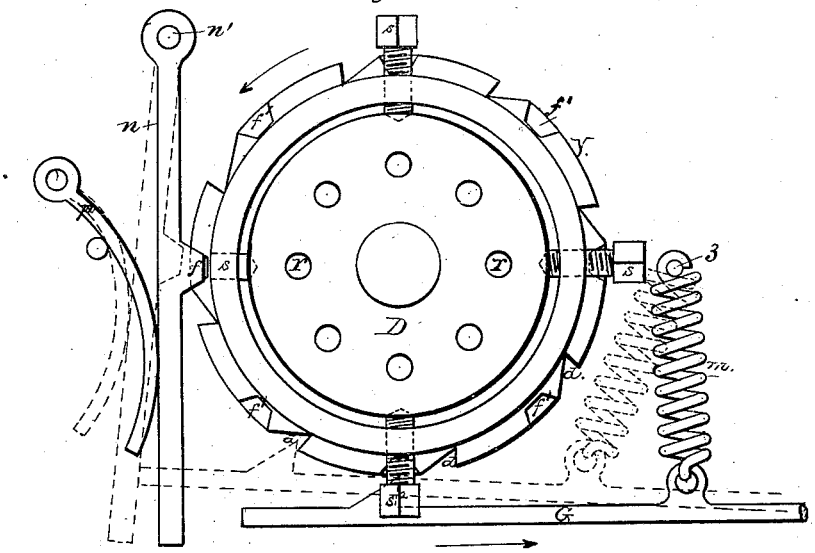



Fig. 4.




Witnesses:
Harry E. Wise
Jacob F. Arnold

Inventor.
J. H. Kressler

# UNITED STATES PATENT OFFICE.

JOHN H. KRESSLER, OF HARRISBURG, PENNSYLVANIA.

## RIVET-HEADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 307,056, dated October 21, 1884.

Application filed February 1, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN H. KRESSLER, of the city of Harrisburg, county of Dauphin, and State of Pennsylvania, have invented a new and useful Rivet-Heading Machine, and of which the following is a specification.

My invention relates to improvements in machines for heading rivets; and it consists in constructing the parts of the machine as fully set forth hereinafter, so as to reduce the expense of repairs, permit bolts of different lengths to be manufactured without altering the dies, and to generally facilitate the operations and increase the efficiency of the machine.

In the drawings, Figure 1 is a side elevation of my improved bolt-heading machine, the device for withdrawing the bolts being detached. Fig. 2 is a front elevation. Fig. 3 is an enlarged transverse section through the dies. Fig. 4 is an enlarged plan of the counter-die and its adjuncts.

The frame A is provided with bearings for the horizontal driving-shaft B, having a cam, I, at the forward end, which rotates within a frame, I, at the upper end of the heading-die plunger J, which slides in a guide, K, the side bars of the frame I′ sliding in guides L. The frame A supports a table, M, arranged horizontally below the die-shaft or plunger J, and upon a stationary rod or pin, T, extending upward from this table, rotates a die having recesses adapted to receive the blanks which are to be headed, the parts being so arranged that the recesses will be brought by the revolution of the die successively beneath the heading-die J′, connected detachably to the lower end of the plunger J.

The die for receiving the blanks may consist of a single block. I prefer, however, to make it in two main portions, the lower portion, V, constituting the holder of the die-block D, which is secured to the holder by set-screws *s*, and consists of a plain metal ring having recesses or sockets *r*, coinciding axially with recesses *y* formed in the holder V. The recesses *y* are enlarged slightly toward the upper ends to receive bushings *a*, in which slide filling-pins *c*, having heads *b* at the lower ends, which fit in the recesses *y*, and which are brought successively by the revolution of the holder above a discharging-bar, N, sliding in a bearing in the frame and reciprocated intermittently.

Different means may be employed for reciprocating the bar N. In the drawings the bar is shown as jointed to one end of a weighted lever, R, to the opposite end of which is connected a rod, P, and an arm, M′, extending from the shaft J, is arranged to strike the end of the rod P as the plunger descends, thereby tilting the lever, elevating the bar, and with it the filling-pin, which is above said bar. An intermittent motion may be imparted in any suitable manner to the lower die, it being necessary to bring each opening *r* below the heading-die J′, and then arrest the movement of the lower die until the header-die descends and rises, and to then turn the lower die until the next recess is below the header-die. The means for imparting this movement shown in the drawings are a cam, C, upon the shaft B, a rod, E, connected to a ring, C′, encircling said cam or eccentric, a bell-crank lever, F, vibrating on a pin projecting from the frame of the machine, and a rod, G, extending past the holder V, and provided with a projection, $s^2$, adapted to engage with teeth or notches formed upon said holder. A spring, *m*, secured to the rod G, and to a stud, 3, upon the frame of the machine, draws the rod toward the holder and insures the engaging of the projection $s^2$ with the notches *d* in the edge of the holder, so that when the rod G is carried in the direction of its arrow, Fig. 4, the holder V will be turned one step in the direction of its arrow, the parts being so adjusted that when the movement of the holder is arrested one of the recesses *r* will be directly below the header-die J′.

A suitable locking device is provided for holding the lower die in its position after the rod G ceases its backward movement. Thus, a rod, *n*, pivoted to a pin, *n′*, upon the frame is provided with a projection, *f*, adapted to recesses *f′* in the periphery of the holder, and is carried toward the latter by a spring, *p*, and is arranged to be struck by the end of the rod G upon the forward movement of the latter, so that the projection *f* will be carried out of the recess *f′* as the projection $s^2$ upon the rod G enters a notch, *d*, the rod *n* being held away from

the holder until the latter begins its rotation and the projection *f* entering the next notch *f'* as the rod G completes its rearward movement.

The die is not only locked by means of the device described, but the coincidence of the recess *r* and plunger-die is insured. As the forward end or edge of the projection *s*² is beveled the rod G will slide to its forward position without the said projection engaging with the teeth of the holder.

The blanks to be headed are placed in the recesses *r*, and are successively brought beneath the header-die, the descent of which upsets the end of the blank, and as each headed blank is brought over the bar N the latter ascends, lifts the filling-pin *c*, and with it the blank to such an extent that it may be seized and removed, either by hand or by the gripping device hereinafter described.

Inasmuch as only a sufficient portion of the blank to form the head must project above the top of the die D, it is necessary to vary the depth of the recesses *r* according to the length of the blanks to be headed. This has ordinarily been done by providing dies of different depths or thicknesses, necessitating a new die-block for each different size of bolt. This has resulted in a considerable expense, as the die-blocks wear away rapidly and are expensive to make and replace. I avoid this expense by the use of the filling-pins *c*, which may be of any length according to the length of the blank to be headed. It is, therefore, only necessary, in order to head blanks of a greater length, to substitute shorter pins for those previously employed, or to put in longer pins when the blanks to be headed are shorter than before. When the lower die consists of a solid block rotated without being supported in a holder, the filling-pins may be supported in the lower ends of the recesses in the block, and when the holder is used the said pins may slide in the openings in the holder without the use of bushings. I prefer to employ the latter, however, as I am thus enabled to employ pins of different thicknesses to correspond to bolts of different diameters by simply changing the bushings, thus avoiding the necessity of employing a different holder for each different diameter of blank. By using a detachable die-block, D, I also avoid the necessity of changing the holder with any change in the thickness of the blank, it being necessary only to replace the die-block. There is also another advantage from the use of the detachable die-block, which results from the fact that said block may be inverted whenever the edges of the openings *r* upon one face become worn, thus enabling me to use the block for a greater length of time than would otherwise be possible.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

1. The combination of the holder having recesses and detachable bushings, and provided with filling-pins, and a die-block secured detachably to said holder, and having openings corresponding to those in the bushings, substantially as set forth.

2. The combination of the holder and devices for revolving it intermittently, said holder being provided with recesses having bushings at their upper portions, filling-pins extending into said bushings, detachable die-block secured to said holder, and a reciprocating heading-die and reciprocating discharging-bar, substantially as specified.

3. The combination of a frame supporting a sliding plunger carrying a heading-die, a holder provided with recesses having bushings at their upper ends, a reversible recessed die-block supported in said holder and turning on a vertical pivot, and detachable headed filling-pins, a discharge-bar reciprocating in bearings in the frame, and appliances, substantially as described, for imparting a step-by-step motion to the guide-block, as set forth.

JOHN H. KRESSLER.

Witnesses:
I. M. WIESTLING,
D. C. MAURER.