J. F. RODGERS.

Machine for Cutting Threads on Bolts.

No. 51,355.

Patented Dec. 5, 1865.

Fig. 1.

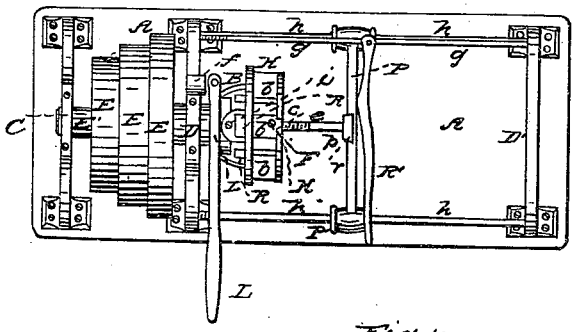


Fig. 6.

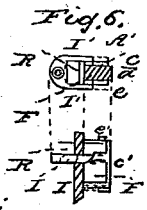


Fig. 4

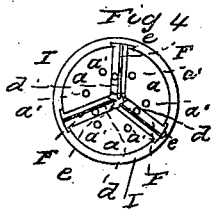


Fig. 5.

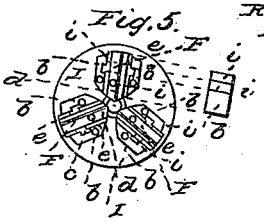


Fig. 2.

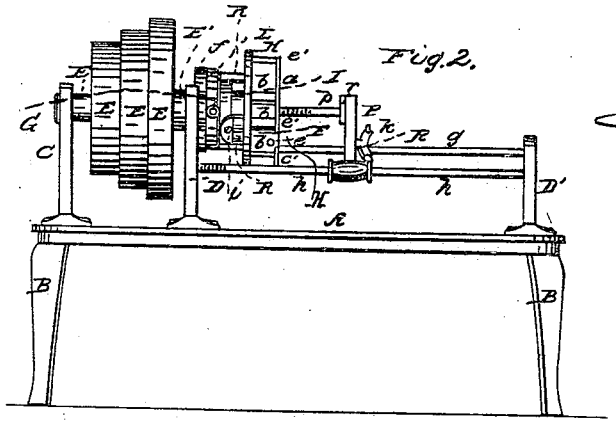
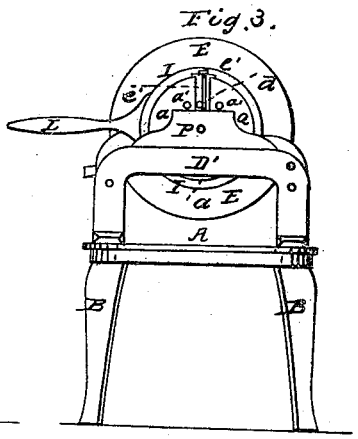


Fig. 3.



Witnesses:
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R. S. Goodman

Inventor:
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UNITED STATES PATENT OFFICE.

J. F. RODGERS, OF SOUTH BEND, INDIANA.

IMPROVEMENT IN MACHINES FOR CUTTING THREADS ON BOLTS.

Specification forming part of Letters Patent No. **51,355**, dated December 5, 1865.

To all whom it may concern:

Be it known that I, J. F. RODGERS, of South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Screw-Bolt Machines; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan view of the machine. Fig. 2 is a side elevation. Fig. 3 is an end view. Figs. 4, 5, and 6 represent detached sections.

Like letters of reference refer to like parts in the several views.

My improvement relates to constructing a screw-bolt machine that has a constant motion in one direction and does not need to be reversed or stopped to disengage the bolt from the machine, and in which different-sized bolts can be cut with the same dies, as hereinafter described.

A represents the platform of the machine, supported on standards or legs B. On the platform, at one end, are secured stands C and D, that support pulleys E on the shaft E′, the shaft having its bearings in the stands. On the end of this shaft that extends through the stand D is a chuck, H, that revolves with the shaft by the revolution of the pulleys. The chuck consists of a circular plate, I, on one side of which three slides, F, are arranged, placed equal distances apart on the inner face of the plate, as shown in Fig. 5, and are held in place between guides *b* on the sides, secured to the plate I.

The front side or corners of the slides are shouldered out, as at *c′*, to receive the edges of segmental plates *a*, placed on the other side of the slides and guides, as shown in Fig. 4, and secured by screws *a′* put through the plates into the guides *b*.

In the middle of the front part of the slides are slots, in which are placed dies *d*, that are secured there by screws *e*, the heads of which extend over onto the edge of the dies, so that when the screws are turned up close against the dies they are held in whatever position in which they are adjusted.

There are screws *e′* in the outer ends of the dies, by means of which the dies can be set farther in or out from the slides or center of the chuck, for the purpose of cutting different-sized bolts, the screws coming against the ends of the dies.

On each side of the slides, one side of the middle, are curved grooves, as shown at *c* in Fig. 6, that are inclined or curved upward toward the front and then straight across, as represented. Into these grooves fit clutches R, as shown at A′ in Fig. 6, which is a top view of the clutch that clasps onto the sides of the slide, fitting into the grooves, as represented, and the outer sides, I′, of the clutch fit and move in straight grooves *i* cut across the inner sides of the guides. These grooves are in a line with the inner end of the curved grooves in the slides, as noted by the red lines in Fig. 6, so that as the clutches are moved in the direction of the arrow, the grooves in the guides being straight, as the clutches move on the inclined part of the groove *c* of the slides the slides with the dies will be forced outward from the center.

Each of the clutches from the slides extend back through openings in the plate I, and are secured by screws to a sleeve, G, as seen at *i′* in Figs. 1 and 2. This sleeve is on the driving-shaft E′, and to it is connected a lever, L, that is forked at one end and extends along above and below the sleeve, the ends of which are pivoted to a piece, *f*, secured to the stand D, so that it is allowed to move longitudinally.

On the inner sides of the forked ends of the lever are projections that extend into the groove on the sleeve G, which, by moving the lever back and forth, moves the sleeve on the shaft that operates the clutches R, for as the lever is moved in the direction of the arrow in Fig. 1 the clutches are drawn back, which moves the slides outward from the center, as before described, whereby the bolts can be taken from the dies without stopping the machine or reversing the motion.

h h are ways extending between the stands D D′.

P is a cross-tree that is supported and slides on the ways, constructed as represented, in the middle of which, opposite the center of the chuck, is an adjustable die, *r*, recessed out to receive the head of a bolt and hold it, as the end is inserted into the chuck between the dies.

g is a rod on one side of the machine, above

the way, to which is connected a sliding lever, R′, designed to move the cross-tree P, as it comes against one side, up toward the chuck, so as to insert the bolt between the dies.

In the practical operation of this machine the head of a bolt, *p*, is placed in the die *r*, when, by moving the lever R′ with one hand against the cross-tree P and guiding with the other hand the end of the bolt into the center *o* of the chuck between the dies, the chuck continually revolving by means of the driving-pulley, the dies will cut the thread on the bolt in the desired manner, and when the dies commence to cut the thread the bolt will move of itself into the chuck, and when the screw or thread is cut the desired distance on the bolt by moving the lever L backward, the dies are moved outward from the bolt, so that it can be removed without stopping or reversing the motion of the pulleys; and by moving the lever forward the slides with the dies are adjusted into place for cutting the thread on another bolt, and the slides are held as firmly in that position by means of the clutches, as before described, as if they were rigid or permanently secured in one place.

The shaft E′, in which the bolts extend more or less, according to their length, is hollow, so that screws of any length can be cut, and screws without a head could be cut and passed out at other end of the shaft. By adjusting the same dies in the slides in or out from the center, as before stated, screws can be cut on different-sized bolts.

The pulleys E are various sizes, on which the driving-belt is adjusted according to the velocity required in cutting different-sized bolts.

The dies are beveled off, forming a cutting-edge inclining one side or eccentric to the center, so as to cut the thread with greater facility. The dies need no forging. A bar of steel the right length needs no labor, except to form the end and cut the thread.

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

1. The slides F and dies *d*, in combination with the guides *b*, clutches R, and plates *a*, operating substantially as and for the purpose set forth.

2. The clutches R, lever L, and sleeve G, operating in combination with the slides F and guides *b*, in the manner substantially as set forth.

3. The chuck H, when constructed and arranged as specified, in combination with the bridge-tree P and lever R′, as and for the purpose set forth.

J. F. RODGERS.

Witnesses:
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R. S. GORDMAN.