

(No Model.)

2 Sheets—Sheet 1.

F. MUTIMER.
BOLT THREADING MACHINE.

No. 480,204.

Patented Aug. 2, 1892.

Fig. 1.

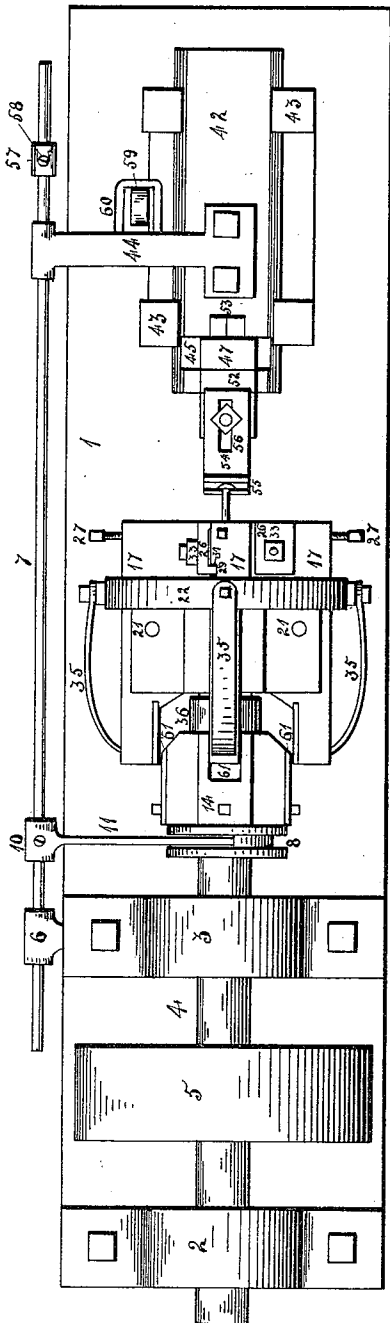
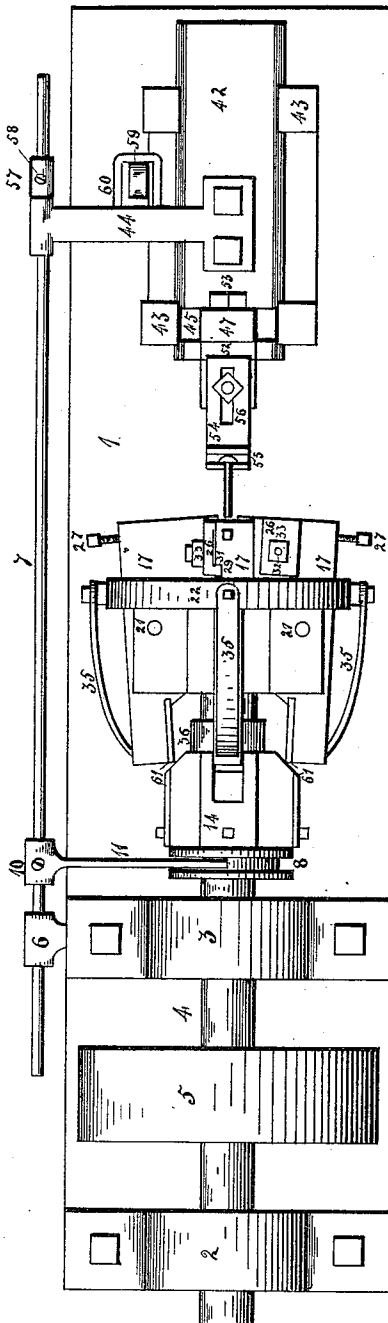


Fig. 2.



Witnesses:

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Inventor:
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Att'y.

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Fig. 4.

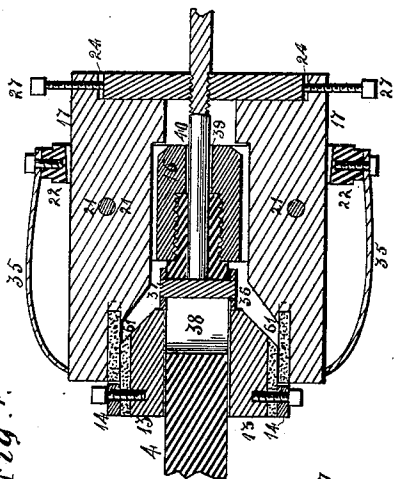


Fig. 3.

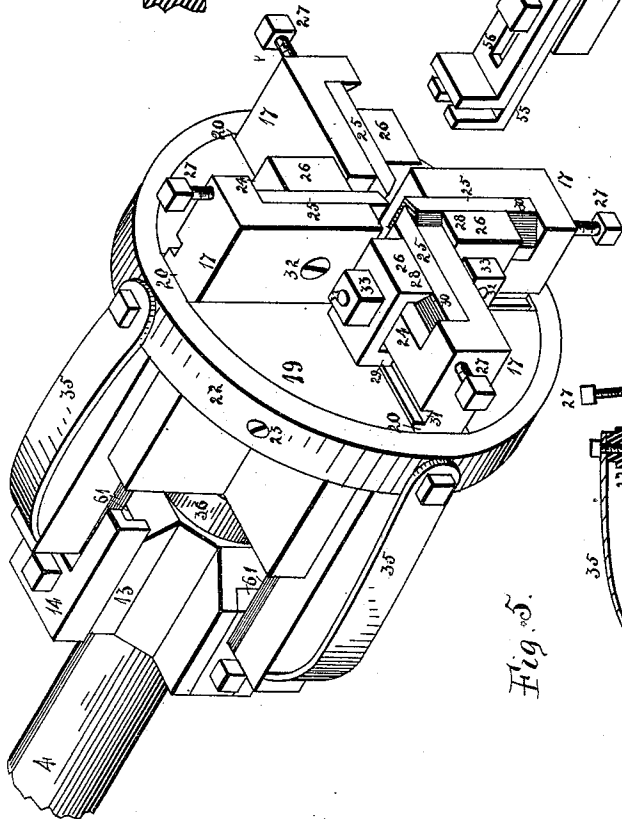
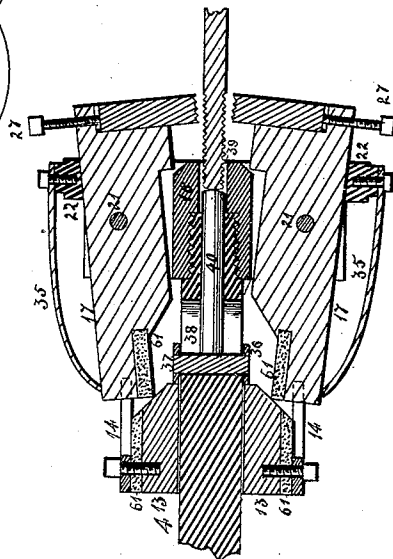


Fig. 5.



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UNITED STATES PATENT OFFICE.

FREDERICK MUTIMER, OF ROCKFORD, ILLINOIS, ASSIGNOR OF ONE-HALF TO
THE ROCKFORD BOLT WORKS, OF SAME PLACE.

BOLT-THREADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 480,204, dated August 2, 1892.

Application filed October 9, 1891. Serial No. 408,260. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK MUTIMER, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Bolt-Threading Machines, of which the following is a specification.

In the accompanying drawings, Figure 1 is a plan view of my bolt-threading machine, showing it in the operation of cutting a thread. Fig. 2 is also a plan of the same, representing the die-bearing jaws open to allow the removal of the bolt. Fig. 3 is an isometrical representation of the cutting-head of my machine; also, the carriage which carries the bolt as it is fed into the dies when the thread is being cut thereon. Fig. 4 is a longitudinal section through the head, showing the means by which the jaws are thrown open when the thread is cut a sufficient distance from the end of the bolt, allowing the bolt to be removed from the dies. Fig. 5 is also a longitudinal section through the head, showing the die-carrying jaws open to allow the removal of the threaded bolt therefrom.

In constructing my bolt-threading machine I employ the ordinary bed 1, supporting the moving parts at a suitable distance from the floor. On the rear end of this bed are the boxes 2 and 3, within which is journaled the shaft 4 and on which, between the two boxes, is secured the pulley 5. An extension 6 from the side of the boxes 3 supports a rod 7 at a height about equal to that of the main shaft, within which extension the rod is free to slide.

Loosely mounted on the forward end of shaft 4 is the collar 8, and the bar 11 is secured by a set-screw in its hub 10 to the rod 7. The forward end of this bar is forked to embrace and lie in the groove of the collar 8. This collar is in contact with the four-arm wedging-hub, the opposite arms 13 of which support a slotted plate 14, and this hub is loosely mounted on shaft 4. The forward end of shaft 4 for a little distance is of a less diameter than the remainder of its length, and this portion is threaded. On this thread of the main shaft I screw the head 16, in which head are pivoted the die-bearing jaws 17. This head at its forward end is provided with a flange-face 19. Four channels 20 are

cut through the flange and hub, and in these channels are supported the die-bearing jaws 17. These jaws are pivoted to the hub portion of the head of the pins 21 and extend through the flange 19. On the periphery of this flange 19 I secure a ring 22, which is held in position by the set-screw 23. In the forward face of each of these jaws that extend through the openings in the flange 19 I cut the recesses 24, leaving the end of the jaw intact. Into the recess thus formed in each jaw I set the die 25, held in position by the clamp 26, said die capable of a lengthwise adjustment by the set-screw 27 in the outer end of the jaw. The clamp-block 26 is of rectangular form and from one of its edges the wedge-shaped lip depends, its opposite edge turning down in the extension 29. One corner 30 of the sides of the dies is beveled to coincide with the slant of the wedged lip of the clamp, and in the side of each of the jaws 17 I cut the channel 31, into which the edge 29 of the clamp extends. Through each jaw and its clamp-block I make a hole, through which I pass the bolt 32, turning the nut 33 down upon the face of the clamp-block, thus holding the die 25 firmly in position. On the ring 22, over the rear end of each of the jaws 17, are springs 35, which, bearing on the jaws rearwardly of their pivots, tend to open the forward ends, throwing the dies apart. When a thread is being cut, it is necessary that the jaws remain fixed at the proper distance apart. This I accomplish by thrusting the wedging-hub between the rear ends of the jaws, holding them outward against the action of the flat springs 35.

Between the wedging-hub and the hub 16 of the head, mounted on the shaft, is a collar 36, through which and through the center of the main shaft a pin 37 extends. Where this pin passes through the main shaft, I provide a slotted hole 38, extending in its lengthwise direction to allow the collar a movement lengthwise with the shaft. From this slotted hole forward to the end of the main shaft I provide a hole 39 on the shaft's center, and in this hole I place a pin 40, of a certain length, the purpose of which will appear hereinafter.

At the forward end of bed 1 I provide a carriage 42, which is supported above the bed by

the ways 43, and is free to slide therein. The arm 44 is bolted to this carriage and extends to and supports the rod 7, parallel with the lengthwise direction of the bed 1. In the forward end of the carriage, in its upper face, I cut the transverse groove 45, and through the bed-plate of the carriage, near the center of this groove, is formed the slotted hole 46, providing a lateral adjustment of the post 47.

At a point about midway of the height of the post 47 I provide a slotted hole 50, and a threaded shank 51, extending from the bar 52, passes through this slot and is held in position by the nut 53, pressing against the rear face of the post 47. The plates 54 and 55 are bolted to the upper face of the bar 52, the plate 55 being slotted in its forward upturned end to receive and hold the square shoulder of the bolt-blank, while the plate 54 is provided with the slot 56 to allow an adjustment for the thickness of the head of the bolt, which lies between the two upturned ends of these plates. On the rod 7 I place a collar 57 forward of the supporting-arm 44, extending from the carriage, and this collar, being fixed to the rod by means of a set-screw 58, is placed at such a point in the length of the rod that when the carriage is moved from the head a sufficient distance to allow the bolt-blank to be placed in the slot 54 the arm 44 will have engaged the collar 57 and pulled the rod 7 forward a sufficient distance to throw the wedging-hub between the rear ends of the jaws 17, closing the dies 25 into position for cutting the thread. The bolt-blank having been set in the slot of the plate 55, the carriage is moved outward toward the dies by means of the pivoted lever 59, extending through the loop 60, and the head being rotated in the proper direction the bolt-blank may be started into the dies and the thread cut thereon. As the dies cut the thread on the blank, the carriage on which it is mounted is moved toward the head and that portion of the blank that has passed through the dies enters the hole 39. The pin 40, lying within the hole 39, is forced by the advancing bolt-blank against the transverse pin 37, and this in turn and the collar 36, to which it is affixed, are pushed backward. The collar 36 bears against the wedging-hub, and as this recedes from its position between the rear ends of the jaw 17 the latter are rocked on their pivotal pins 21 by the action of the springs 35, freeing the dies from the bolt upon which the thread has been cut and rendering it possible to withdraw the bolts from between them, which is done by moving the carriage backward. To accomplish this movement sufficiently to allow the removal of the bolts, the arm 44 engages the collar 57, and the rod 7 will be brought backward with the carriage, moving the grooved collar 8 against the wedging-hub, forcing it forward between the rear extensions of the jaws 17, and again throwing the jaws into proper position for thread-cutting. The faces of the wedging-hub and

the rear ends of the jaws 17, which come in contact with each other are formed by the hardened plates 61. The plates 14, supported by the arms 13 of the wedging-hub, being slotted, allow the jaws 17 to ascend the incline of the hub, and also form a connection between the jaws and the hub, so that they will revolve in unison.

I claim as my invention—

1. In a bolt-threading machine, the combination of a revolving head, jaws pivoted therein, dies affixed by clamps to the jaws, said clamps formed with two depending lips, a groove in each jaw for one of the lips, the other lip engaging the bevel-edge of the die, a bolt for holding the clamp in position, and means for opening and closing the dies.

2. In a bolt-threading machine, the combination of a revolving head, jaws pivoted therein, and a movable wedging-hub having radial ribs thereon, one or more of said ribs provided with a slotted plate for receiving the end of one of the pivoted jaws, forming a rotative connection between the hub and the revolving head.

3. In a bolt-threading machine, the combination of a revolving head, jaws pivoted therein, a movable wedging-hub having radial ribs thereon, one or more of said ribs provided with a slotted plate for receiving the end of one of the pivoted jaws, the plate having flanges for engaging the sides of its rib, and means for securing the plate to the rib.

4. In a bolt-threading machine, the combination of a hub having a sliding connection with the driving-shaft and having also a slotted face, jaws located in the slots, and a ring encircling the periphery of the face, forming stops for the jaws.

5. In a bolt-threading machine, the combination of a hub having a rotative connection with the driving-shaft, said hub having a slotted face, jaws located in the slots, a ring encircling the periphery of the face, and springs supported by the ring for operating the jaws.

6. In a bolt-threading machine, the combination of a supporting-frame, a revolving head, dies movably secured therein, ways on the frame, a carriage on the ways, a post on the carriage, having a vertically-elongated opening and capable of lateral adjustment, and a bar movably secured to the post, said bar supporting a bolt-holding device.

7. In a bolt-threading machine, the combination of a revolving head, jaws pivoted therein and having a recess in one face thereof, dies located in the recess and having a bevel-edge, and a clamp secured to the jaw overlying the die and having a lip with a bevel-face engaging the bevel-edge of the die, holding it in position.

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Witnesses:

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