

A. M. HARRINGTON & R. F. SCOTT.
BOLT CUTTING MACHINE.
APPLICATION FILED JULY 3, 1913.

1,090,299.

Patented Mar. 17, 1914.

2 SHEETS-SHEET 1.

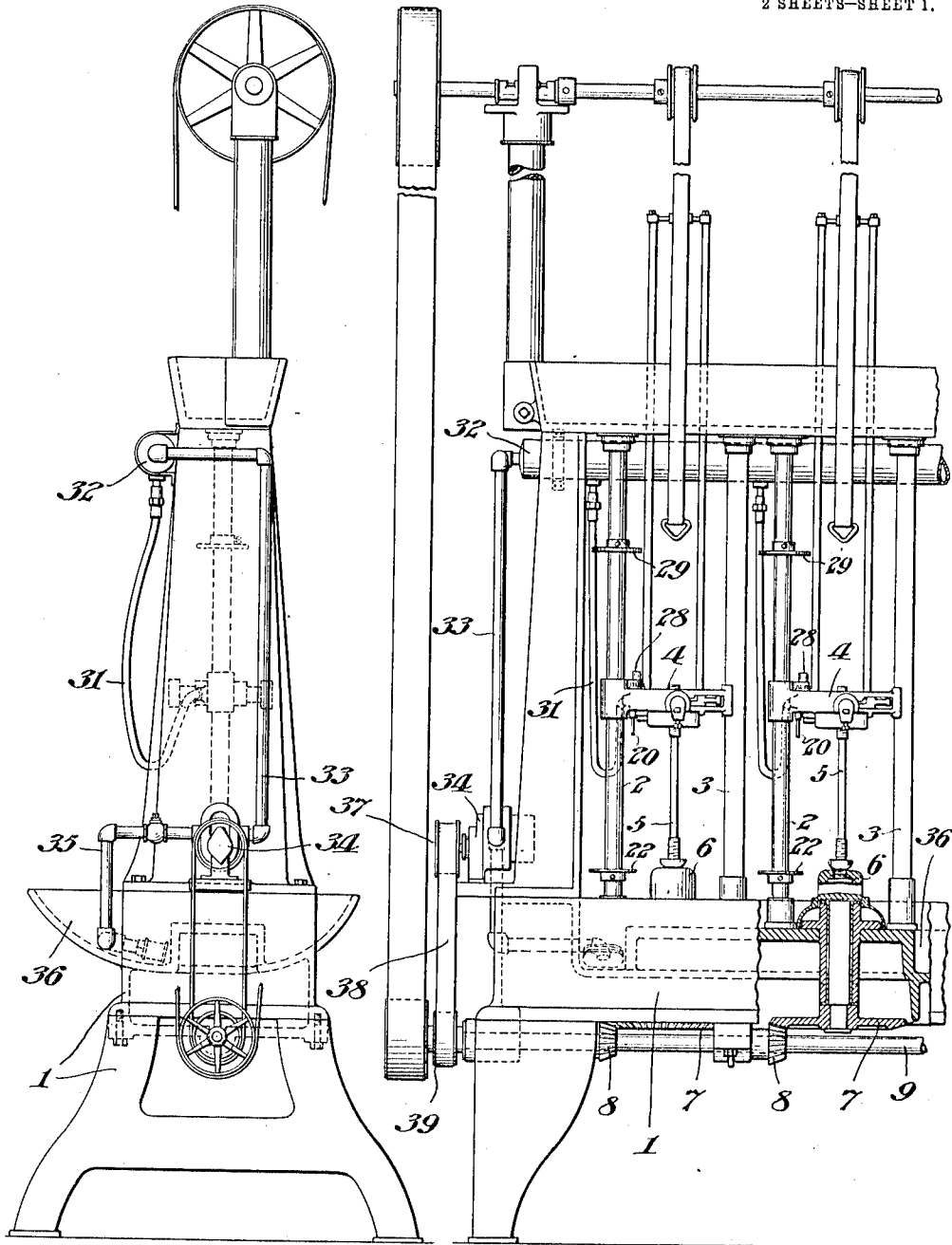


Fig. 1.

Fig. 2.

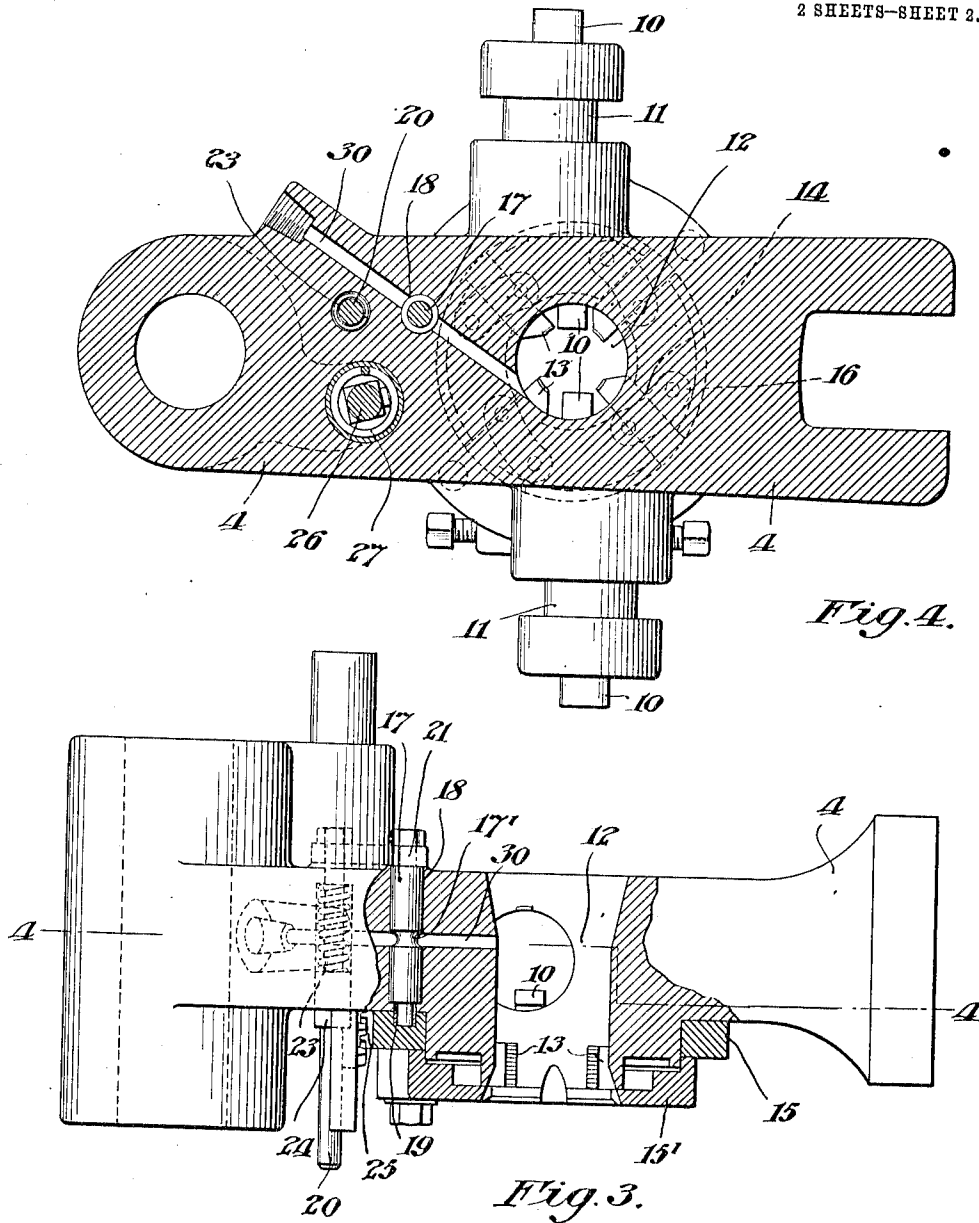
WITNESSES:
Geo. H. Runney
Joe. S. Denny

INVENTORS:
Robert F. Scott,
and Arthur M. Harrington,
BY
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UNITED STATES PATENT OFFICE.

ARTHUR M. HARRINGTON AND ROBERT F. SCOTT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO EDWIN HARRINGTON, SON & CO., INC., OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

BOLT-CUTTING MACHINE.

1,090,299.

Specification of Letters Patent. Patented Mar. 17, 1914.

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To all whom it may concern:

Be it known that we, ARTHUR M. HARRINGTON and ROBERT F. SCOTT, citizens of the United States, and residents of the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented certain Improvements in Bolt-Cutting Machines, of which the following is a specification.

This invention is designed to provide automatic means of simple character for supplying a lubricant when required to the cutting tools or thread chasers of bolt machines, particularly mechanism in which a movable head is provided with thread chasers having means for moving them into and out of their operative position, and locking mechanism comprising a reciprocating pin for holding the chasers in their operative position.

The improvements of our invention comprise an oil passage intersecting the way in which the locking pin reciprocates, the formation of the pin so that when it locks the chasers in their operative position the lubricant can flow to the top thereof and when the chasers are in their inoperative position the flow is cut off, means being provided for collecting and recirculating the lubricant.

In the accompanying drawings, Figure 1 is an end elevation of a bolt turning and threading machine provided with our improvements; Fig. 2 is a part sectional front elevation of the same; Fig. 3 is a part sectional front elevation of our improved cutter head; and Fig. 4 is a sectional view taken on the line 4—4 of Fig. 3.

The machine, in the form shown in the drawings, comprises the frame 1 provided with the guides 2 and 3 along which the cutter heads 4 are adapted to reciprocate in the operation of turning and threading bolts 5 which are engaged in and revolved by the stocks 6, the latter being revolved by beveled gears 7 fixed thereto and driven by beveled pinions 8 fixed on the revoluble shaft 9. The heads 4 are provided with the cutters 10 movable in the bearings 11 so as to act upon bolts revolved in the apertures 12 and with the cutters or chasers 13 movable in the ways 14 so as to thread the bolts, the chasers 13 being reciprocated by the connected rings 15 and 15', which are provided

with the cams 16 for engaging such chasers. In each head, the rings are locked to hold the chasers in their operative positions by the pin 17 movable longitudinally in the way 18 of the head so as to engage and disengage the socket 19 of the ring 15. The pin 17 is elevated by a pin 20, connected therewith by the yoke 21 and extending through the head so as to be engaged by contact with a stop 22 on the guide 2 as the limit of the downward movement and the threading operation is approached, the pins being depressed by a coiled spring 23 set in the head and engaging the collar 24 on the pin 20. When the locking mechanism disengages the ring 15, the latter is turned by a spiral gear segment 25 thereon which is engaged by a rack 26 elevated by a spring 27. The chasers are thereby withdrawn and thus held until the cap 28 of the rack strikes a stop 29 at the limit of the upward movement of the head, whereupon the ring 15 is turned by the rack and gear, the chasers are moved into their operative position, and the spring 23 acts with gravity to cause the pin 17 to reengage the socket 19 and lock the chasers in this position. This mechanism, of known character, is, by our improvements, provided with the passage 30 which extends through the head 4 to the aperture 12 at a place above the cutting tools, and intersects the way 18 in which the pin 17 reciprocates, the latter being provided with a channel or reduced portion 17' adapted to register with the passage 30, and when lowered, as in the operative position of the chasers, opens the passage.

A flexible tube or hose 31 connects the passage 30 of each head with a tank or reservoir 32 which is connected by a pipe 33 with a pump 34, the latter being connected by a pipe 35 with a receptacle 36 which is formed within or supported by the frame beneath the heads so as to collect lubricant dropping therefrom. A pulley 37 operates the pump and is operated by a belt 38 which connects it with the pulley 39 on the shaft 9.

It will be understood that when the heads are descending in the operation of cutting the bolts, lubricant flows from the tank 32 through the tubes 31, passages 30 and registering channels 17' to the respective apertures 12, being delivered above and to the cutters. But when the cutting operation is

completed and the chasers are unlocked by the withdrawal of the pin 17 from the ring 15, this pin acts as a valve, closes the passage 30 and cuts off the flow of lubricant to the cutters while they are out of action.

Having described our invention, we claim:

1. In a bolt cutting machine, a movable head having cutters, a passage for a cutter lubricant, a valve movable in said head for controlling said passage, and means whereby said valve is automatically operated to open said passage in the operative position of said cutters and to close said passage in the inoperative position of said cutters.
2. In a bolt cutting machine, mechanism comprising a reciprocating head, thread chasers movable in said head, a passage for supplying a lubricant to said chasers, means for reciprocating said chasers, a pin adapted to control said passage and lock said means in the operative position of said chasers, and means whereby said pin is automatically operated to release said means first named and close said passage.
3. In a bolt cutting machine, mechanism comprising guides, a head adapted to reciprocate along said guides, said head having a thread chaser, means for reciprocating said chaser, a passage for delivering a lubricant to said chaser, and locking mechanism comprising a pin intersecting said passage and adapted to engage said means, said pin simultaneously locking said means and opening said passage.
4. In a bolt cutting machine, a frame having guides, in combination with a head movable along said guides and provided with a thread cutter, means for reciprocating said cutter, a passage for delivering a lubricant to said cutter, mechanism comprising a pin having the function of a valve in controlling said passage so that the passage is open in the operative position of the cutter and closed in the inoperative position thereof, said pin locking said means when said passage is open, and mechanism for disengaging said pin from said means.

5. In a bolt cutting machine, a frame having guides, a cutter head having a passage, said head having a valve movable therein for controlling said passage, and means for automatically operating said valve mechanism.

6. In a bolt cutting machine, a frame having guides, in combination with a reciprocating cutter head having a passage and valve mechanism for controlling said passage, means for automatically operating said valve mechanism so that it is automatically opened and closed at the limits of movement of said head, a flexible tube connected with said passage, and means for supplying a lubricant to said tube.

7. In a bolt cutting machine, a frame having vertical guides, a head adapted to reciprocate along said guides, a receptacle supported by said frame beneath said head, a tank supported by said frame above said head, and a flexible tube connecting said receptacle with said head, said head having a cutter, a passage whereby a lubricant can be delivered from said tube to said cutter, a pin having a channel adapted to register with said passage, and means operated by the operation of said machine for reciprocating said pin whereby said passage is opened and closed.

8. In a bolt cutting machine, a frame having vertical guides, in combination with a head adapted to reciprocate along said guides, said head having a cutter, a passage adapted for delivering a lubricant to said cutter, a pin adapted for opening and closing said passage and means for automatically reciprocating said pin.

In testimony whereof we have hereunto set our names this 26th day of June, 1913, in the presence of the subscribing witnesses.

ARTHUR M. HARRINGTON.
ROBT. F. SCOTT.

Witnesses:

JOS. G. DENNY, Jr.,
GEO. A. CUNNEY.