No. 648,386. Patented May 1, 1900.

A. BYINGTON.

AUTOMATIC OILER FOR ENGINES.

(Application filed Nov. 28, 1899.)

(No Model.)

Fig. 1.

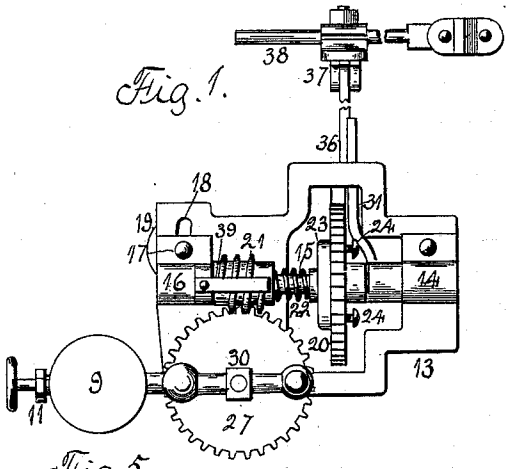


Fig. 2.

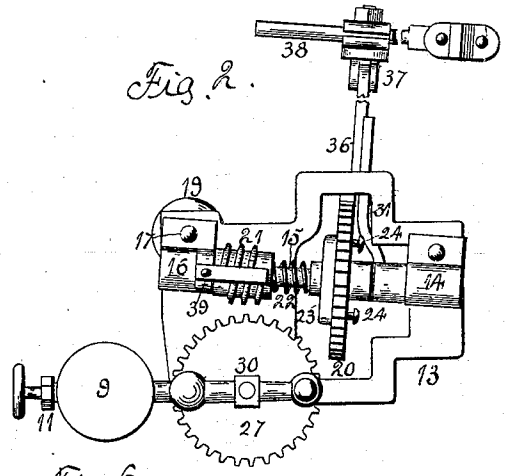


Fig. 5.

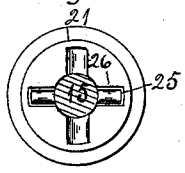


Fig. 3.

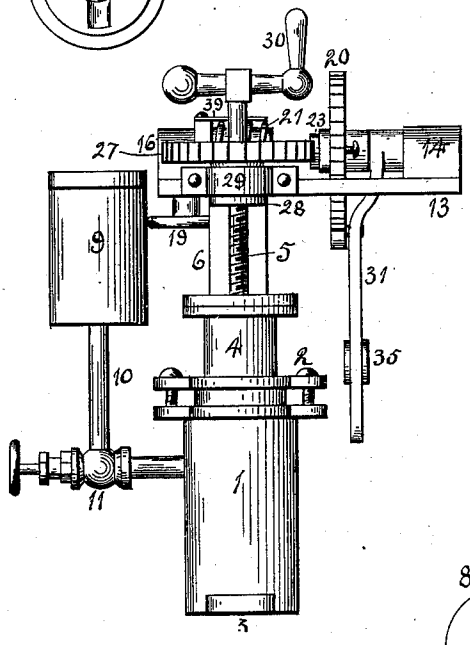


Fig. 6.

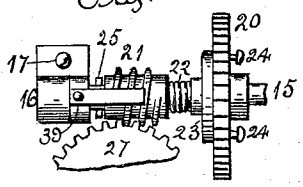


Fig. 4.

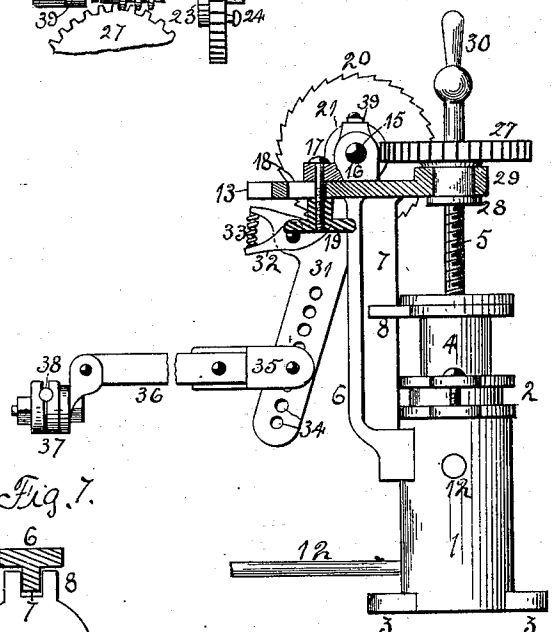
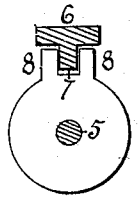


Fig. 7.



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UNITED STATES PATENT OFFICE.

ALBERT BYINGTON, OF ROCHELLE, ILLINOIS.

AUTOMATIC OILER FOR ENGINES.

SPECIFICATION forming part of Letters Patent No. 648,386, dated May 1, 1900.

Application filed November 28, 1899. Serial No. 738,611. (No model.)

To all whom it may concern:

Be it known that I, ALBERT BYINGTON, a citizen of the United States, residing at Rochelle, in the county of Ogle and State of Illinois, have invented certain new and useful Improvements in Automatic Oilers, of which the following is a specification.

The object of this invention is to construct an automatic oil-feed for steam-engines.

In the accompanying drawings, Figure 1 is a plan view of the oil-feed in which the parts are in working position. Fig. 2 is a similar view in which the parts are out of gear. Fig. 3 is a face elevation. Fig. 4 is a side elevation. Fig. 5 is a face view of the worm, showing its connection with the pin. Fig. 6 is a plan view showing the worm disengaged from the pin. Fig. 7 is a transverse section showing the connection between the piston and frame.

A cylinder 1 has a stuffing-box 2 at its upper end and its bottom provided with feet 3, by which it is secured to a support. A piston 4 is located in the cylinder and is moved vertically by a rotating screw 5, having a screw-thread connection therewith. From the cylinder rises an arm 6, having a rib 7. From the upper end of the piston extend lugs 8, which engage the rib 7 and hold it against rotation, but permitting it to move vertically thereon. An oil-supply tank 9 has a connection with the cylinder by the pipe 10, and a valve 11 regulates the flow of oil to the cylinder. A pipe 12 connects the cylinder with the engine. The upper end of the arm 6 supports a plate 13, to the upper face of which is pivoted a box 14, supporting one end of a shaft 15. The other end of this shaft is supported in a box 16, having a movable connection with the base by the bolt 17 moving in the slot 18, and a wheel 19 serves to clamp the box to the plate. To this shaft is secured a saw-toothed wheel 20, and a worm 21 is loosely supported thereon. A coiled spring 22 is placed on the shaft between the saw-toothed wheel and the worm 21. An adjustable collar 23 surrounds the shaft between the spring and saw-toothed wheel and is adjustable in the lengthwise direction of the shaft by means of the screws 24, by means of which the tension of the spring is adjusted. A pin 25 is passed through the shaft 15, and the end of the worm next this pin has a series of recesses 26 to receive the pin, thereby forming a clutch connection between the shaft and worm.

A worm-wheel 27 is secured to the upper end of the screw 5, and the under face of this worm-wheel has a collar 28, which is held against lengthwise movement by the bearing 29, but is permitted a rotary movement. To the upper end of the screw-shaft is secured a hand-lever 30. A bar 31 is pivotally supported by the shaft between the saw-toothed wheel and box 14, to which is pivoted a dog 32, adapted to engage the teeth of the saw-toothed wheel, and a spring 33 holds it in engagement with the teeth. The lower end of this bar is provided with a series of holes 34 and supports a yoke 35, to which is connected a bar 36, and to the free end of this bar is pivoted a yoke 37. This yoke supports a rod 38 in a manner to permit an adjustment of the rod in its lengthwise direction. This rod has a connection with the valve-rod of the engine, by means of which the bar is oscillated and an intermittent rotary movement imparted to the saw-toothed wheel through the dog connection.

A flat spring 39 is secured to the bar 16 and rests upon the worm 21, which prevents backward movement of the worm. With the piston down to its fullest extent the worm 21 is disengaged from its connection with the wheel 72 by loosening the hand-wheel 19 and swinging the box 16 and shaft 15, the pivot of the box 14 acting as the center of motion. By the hand-lever 30 the screw 5 is rotated to the left hand, which will raise the piston and draw oil from the tank 9 into the cylinder 1, the valve being previously opened, and when the cylinder is full the valve is closed and the worm moved into engagement with the wheel, and an intermittent rotary movement will be imparted to the screw 5 to the right hand, which will move the piston down and force the oil through the pipe to the engine. Should the piston strike the bottom of the cylinder or in any manner be prevented from descending, thereby holding the wheel 27 stationary while the shaft 15 is rotating, the effect will be to move the worm bodily toward the saw-toothed wheel 20 against the action of the spring by the worm running back on the wheel 27. This movement of the worm will disen-

gage it from the pin 25, thereby breaking the connection between the worm and shaft 15 and preventing breakage of the parts.

I claim as my invention—

1. In an automatic oiler, a cylinder, a piston therefor held against rotation, a rotating worm-wheel having a screw connection with the piston, a shaft, a worm mounted on the shaft, a clutch connection between the worm and the shaft actuated by resistance to the downward movement of the piston.

2. In an automatic oiler, a cylinder, a piston therefor held against rotation, a rotating worm-wheel having a screw connection with the piston, a shaft, a worm mounted on the shaft, a clutch connection between the worm and shaft actuated by resistance in the downward movement of the piston and an engagement between the worm and worm-wheel.

3. In an automatic oiler, a cylinder, a piston therefor held against rotation, a rotating worm-wheel having a screw connection with the piston, a shaft, a worm mounted on the shaft, a clutch connection between the worm and the shaft actuated by resistance to the downward movement of the piston, an engagement between the worm and worm-wheel, and a spring holding the worm in engagement with the clutch.

ALBERT BYINGTON.

Witnesses:
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