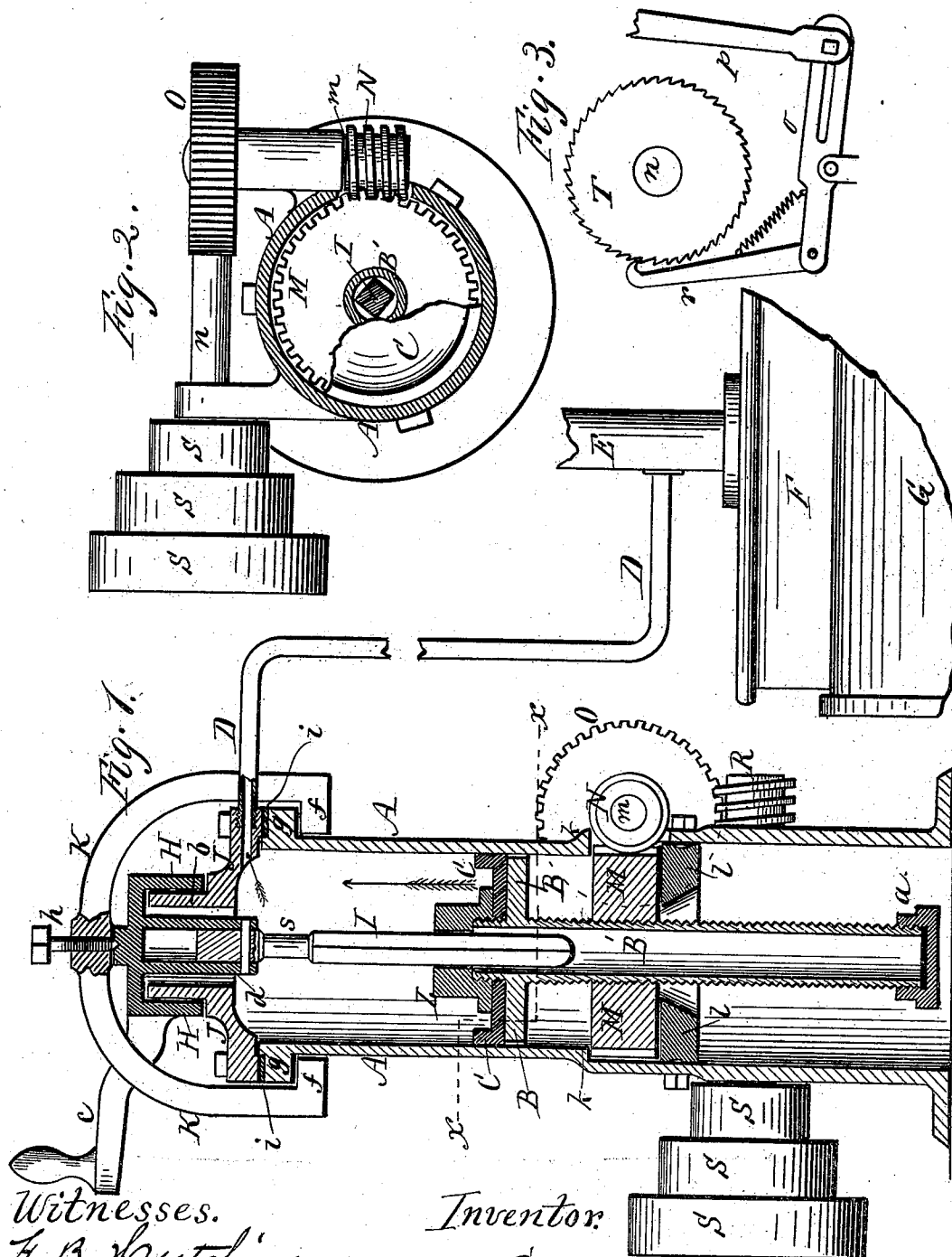


(No Model.)

D. STONE.
LUBRICATOR.

No. 503,013.

Patented Aug. 8, 1893.



Witnesses.
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Austin Smith

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UNITED STATES PATENT OFFICE.

DRAPER STONE, OF ROCHESTER, NEW YORK.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 503,013, dated August 8, 1893.

Application filed July 19, 1892. Serial No. 440,493. (No model.)

To all whom it may concern:

Be it known that I, DRAPER STONE, of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Oilers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying this specification.

My improvement relates to devices for oiling the cylinders of steam engines by a forced feed, and consists in the combination of certain parts hereinafter claimed, by which a piston is gradually forced upward in a cylinder by the action of the engine itself, said piston forcing the oil out through a side pipe and into the steam pipe which supplies the steam cylinder, or into the cylinder itself.

In the drawings—Figure 1 is a central, vertical section of the device. Fig. 2 is a horizontal, cross section in line xx of Fig. 1. Fig. 3 is an elevation showing a modification in the devices for running the oiler.

A indicates the cylinder and B the piston. The latter is provided with a hollow screw threaded tube B' , which extends both above and below the piston head, and is provided at the bottom with a screw cap a , that makes it oil tight.

C is a cup-packing resting on top of the piston and in contact with the sides of the cylinder. The oil is held in the cylinder above the piston, and as the latter is raised the oil is forced out through a lateral pipe D, which connects at its opposite end with the steam pipe E that opens into the steam chest F above the engine cylinder G.

H is a cap resting loosely on a bearing b at the top of the device, and provided with a cranked handle c , by which it is turned.

I is a rod attached to a central hub d of the cap and turning with it. The rod I is square in cross section and is of such length as to project down into the top of the hollow screw threaded tube B' when the piston is at its lowest position. The cap H is held down by a yoke K, fitted over the cylinder, being provided with lugs $f f$ which hook under a shoulder g , and at the top with a set screw h that bears on top of the cap. The cap H bears on top of a cover J, and holds the latter firmly on

top of the cylinder. Packing i is interposed between the cover and top of the cylinder to make a tight joint. To fill the cylinder with the oil the cover and cap are both removed, leaving the whole top of the cylinder open.

L is a nut screwed down on the upper projecting end of the screw threaded tube B' and clamping the packing C. This nut has a square hole through which passes the square rod I.

M is a worm wheel inside the cylinder, having a threaded hole through which passes the screw threaded tube B' . The worm wheel rests under a shoulder k of the cylinder and on top of a fixed ring l , by which means it is kept in place but it is free to turn. N is a worm pinion attached to a shaft m and engaging with the gear M. On the opposite end of shaft m is another worm gear O, which engages with another pinion R on a shaft n . On the opposite end of shaft n is a set of cone pulleys S S S, on which runs a band extending from a pulley on the engine. By this means whenever the engine is in motion corresponding motion is imparted to the set of gearing and the piston is gradually forced up in the cylinder, carrying with it the body of oil that lies on top of the piston and forcing the same out through the lateral pipe D and into the steam pipe that leads to the engine cylinder. This motion of the piston is produced by reason of the screw threaded tube B' being held against rotation by the fixed rod I passing through it, while the gear M receives rotary motion and screws the screw threaded tube B' upward. By a proper arrangement of gearing a very slow motion may be imparted to the screw threaded tube and piston, and it has been found in practice that a single charge of the cylinder will last several days. The power thus given to the piston is sufficient to balance the back pressure of steam through the pipe so that the oil will feed by its own gravity. It is found of especial value in feeding plumbago oils, which are very heavy and not easily fed to the engine by ordinary oiling devices. One great advantage is that, so long as the engine is running, the oil is constantly fed forward, and when the engine stops the oil ceases to feed.

Other kinds of gearing may be used to impart motion to the worm gears. Fig. 3 shows

a ratchet wheel T used in place of the cone pulleys S S S, said ratchet being operated by levers *o p* and a pawl *r* in a well known way.

5 Near the top of the rod I is a cylindrical section *s* of less diameter than the body of the rod, as shown in Fig. 1. When the piston arrives at the top, the opening in the nut L passes over this contracted section and the nut turns free thereon, thus arresting the upward motion of the piston and stopping the feeding of the oil.

To run the piston back to the bottom of the cylinder to allow a new supply of oil, the yoke K is removed and the cap H is rotated continuously causing the screw threaded tube to run down through the gear M till the piston strikes a stop at the bottom.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an oiler, the combination of the cylinder, the piston resting therein, the screw threaded tube attached to the piston, the worm wheel through which the tube passes, a nut 25 attached to the piston provided with a square opening, and a fixed rod passing through the nut and into the tube, as and for the purpose specified.

2. In an oiler, the combination of the cylinder, the piston resting therein, the screw threaded tube attached to the piston, the worm

wheel through which the tube passes, a nut attached to the piston provided with a square opening, and a fixed rod passing through the nut and into the tube, said rod being provided 35 near its top with a section of smaller diameter than the body of the rod, as and for the purpose specified.

3. In an oiler, the combination of the cylinder, the piston resting therein, the screw threaded tube attached to the piston, the worm wheel through which the tube passes, a nut attached to the piston provided with a square opening, a fixed rod passing through the nut and into the tube, and a cap capable of rotary 45 motion, to which cap the rod is attached, as and for the purpose specified.

4. In an oiler, the combination of the cylinder A, the piston B, the screw threaded tube B', the nut L, the fixed rod I passing through 50 the nut and into the tube, the cap H to which the rod is attached, and the gearing consisting of the worm wheel M, pinion N, worm wheel O, and pinion R, as shown and described and for the purpose specified. 55

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

DRAPER STONE.

Witnesses:

R. F. OSGOOD,

CHAS. A. WIDENER.