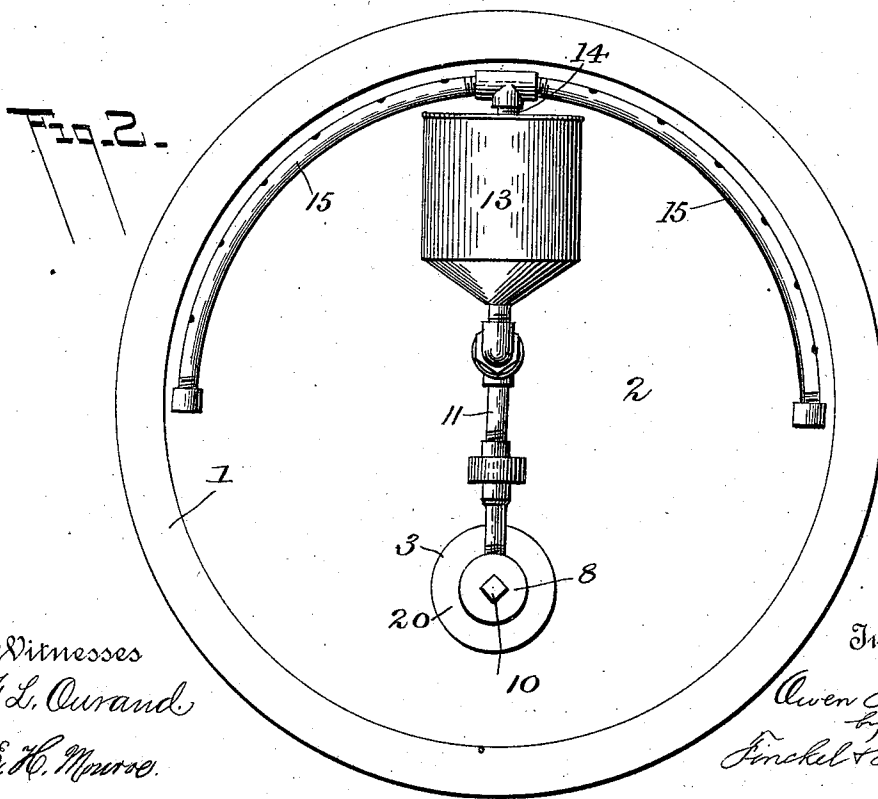
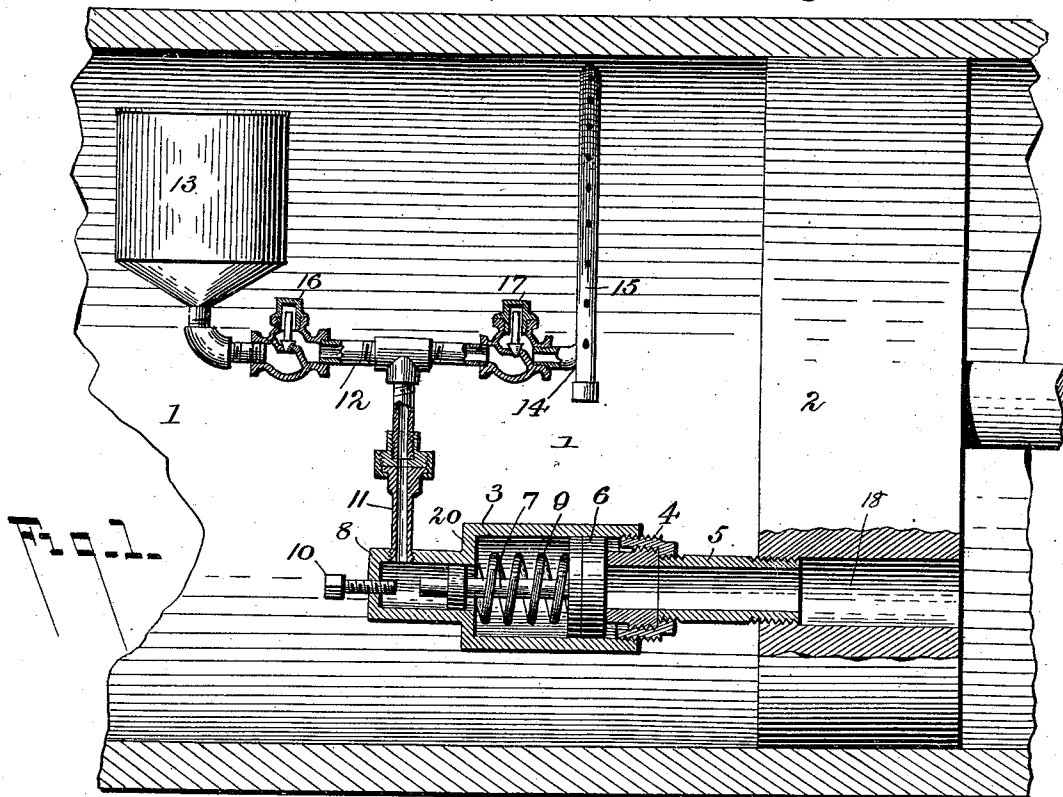


(No Model.)

O. T. SNYDER.
LUBRICATOR.

No. 504,178.

Patented Aug. 29, 1893.



Witnesses
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E. H. Murro.

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UNITED STATES PATENT OFFICE.

OWEN T. SNYDER, OF COLUMBUS, OHIO.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 504,178, dated August 29, 1893.

Application filed February 23, 1893. Serial No. 463,474. (No model.)

To all whom it may concern:

Be it known that I, OWEN T. SNYDER, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Lubricators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Heretofore it has generally been necessary to lubricate the cylinders of hydraulic elevators by hand, and this work has always been attended with a great deal of difficulty and loss of time. At least one attempt has been made to lubricate such cylinders automatically, but the mechanism proposed was expensive and complicated, and moreover it was not possible by the said mechanism to supply the lubricant in the proper quantity at the proper time and place: namely, when the hydraulic piston is beginning its stroke under the pressure of water.

With my device I propose to utilize the fluid pressure that propels the elevator piston for the purpose of pumping the lubricating material onto the inner surface of the cylinder, and to provide means for regulating the quantity of lubricant supplied to accord with the needs of the mechanism. In this way I avoid the trouble, inconvenience and loss of time heretofore incurred, and secure an automatic and perfect lubrication of the cylinder.

The improvements claimed are described in the following specification:

In the accompanying drawings Figure 1 is a vertical, longitudinal, sectional view. Fig. 2 is a view in end elevation looking into the cylinder.

1 designates the cylinder and 2 the piston of an ordinary hydraulic elevator.

3 designates the barrel of a small lubricant pump. In one end of the barrel, or cylinder 3, is screwed a short collar 4, through which passes a pipe 5, that is screwed into an opening or passage 18 in the piston 2, of the hydraulic cylinder. Within the chamber of the barrel 3, is fitted an oil tight piston 6, having a stem 7, on the end of which is a small nut, or shoulder that fits in a small tube 8, projecting centrally from the outer head of the

barrel 3. On the stem 7, is placed a coil spring 9, that tends to expand between the piston 6, and the shoulder 20, at the outer end of the barrel. The inner face of the piston abuts against the end of the short pipe 5, which projects through, and beyond the end of the collar 4 so that the leather packing of the piston shall not come into contact with and be squeezed against the said collar 4. In the end of the tube 8 is a set screw 10, which may be adjusted so that the stroke of the piston 6 may be limited to determine the quantity of lubricant discharged. Tapped into the tube 8, is a short vertical pipe 11, that is connected with a horizontal pipe 12. Arranged on the outer end of the pipe 12 is a cup or reservoir 13, for the lubricating material. The inner end of the horizontal pipe 12, leads into vertical pipe 14, to the upper end of which is attached a semi circular spraying pipe or tube 15, that is closed at its ends. The outer side of the tube 15, lies near the inner surface of the cylinder, and is made with a number of small holes, through which the oil is sprayed onto the inner upper surface of the cylinder. Check valves 16 and 17 that open inwardly, as shown, are located in the horizontal pipe 12, on either side of the place where vertical pipe 11 unites with it.

The operation of my improvements is as follows: When the water, or other fluid under pressure in the cylinder 1, acts on the piston 2 of the elevator cylinder 1, it also acts on the piston 6, in the barrel 3, of the oil pump, and forces said piston 6, outward and the oil upward through the holes in the curved spraying tube 15. The check valve 16, prevents the back-flow of oil into the reservoir during the action of the oil pump, while the check valve 17, permits the upward flow of oil to the spray holes. The check valve 17, prevents the back-flow of oil that has been pumped into the vertical pipe 14, and the check valve 16, permits oil to be drawn into the pump cylinder on its inward stroke under the expansive force of the spring 9.

It is obvious that the longer or shorter the stroke of the piston 6, the larger or smaller will be the quantity of oil supplied to the cylinder 1 through the spray pipe.

The strength of the spring 9 will be suffi-

cient to force the piston 6 inward against the pressure of the water in the cylinder while being discharged.

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

1. The combination of a cylinder, a fluid pressure piston having an opening or passage 18 communicating with the pressure side of the piston, a pump connected with said passage and moving with the piston constructed to be operated by compressed fluid passing through the said opening and having a discharge orifice or orifices arranged to feed the lubricant onto the interior side of the cylinder in advance of the piston and at or near the beginning of its outward stroke, substantially as described.

2. The combination of a cylinder, a fluid pressure piston having an opening or passage

18 communicating with the pressure side of the piston, a pump connected with said passage and moving with the piston constructed to be operated by compressed fluid passing through the said opening, a reservoir 13 for lubricant connected with the induction port of the pump, and a perforated spray pipe 15 connected with the eduction port of the pump and arranged to discharge the lubricant onto the interior side of the cylinder in advance of the piston and at or near the beginning of its outward stroke, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

OWEN T. SNYDER.

Witnesses:

E. C. BRIGGS,

GEO. M. FINCKEL.