

934,953.

Patented Sept. 21, 1909.

Fig. 1.

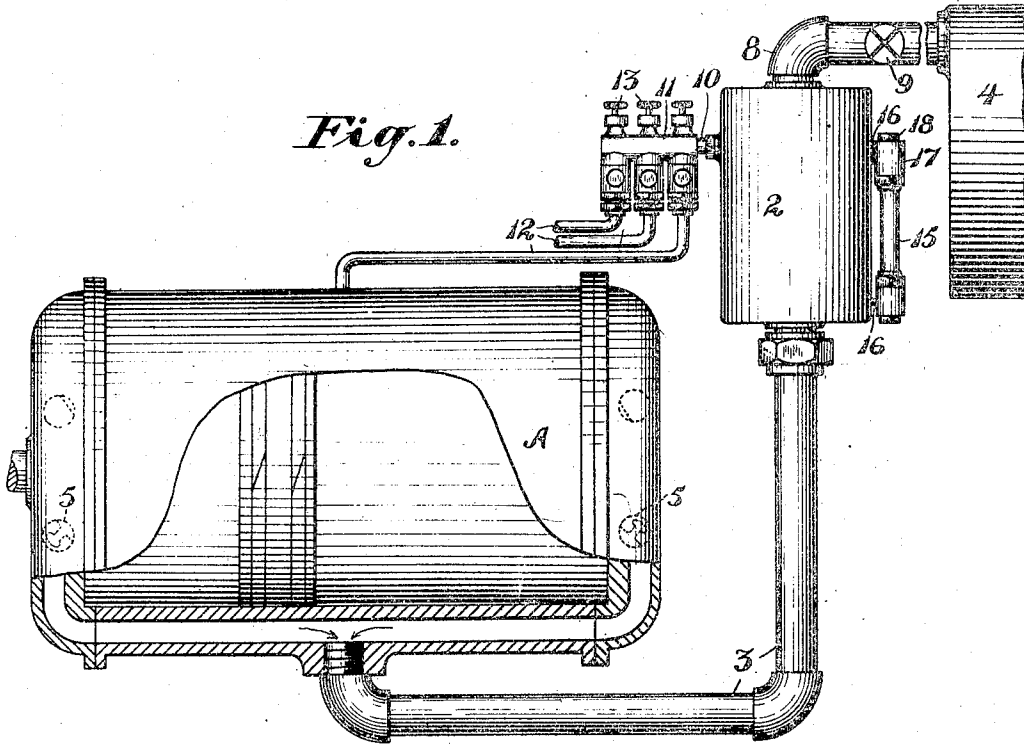
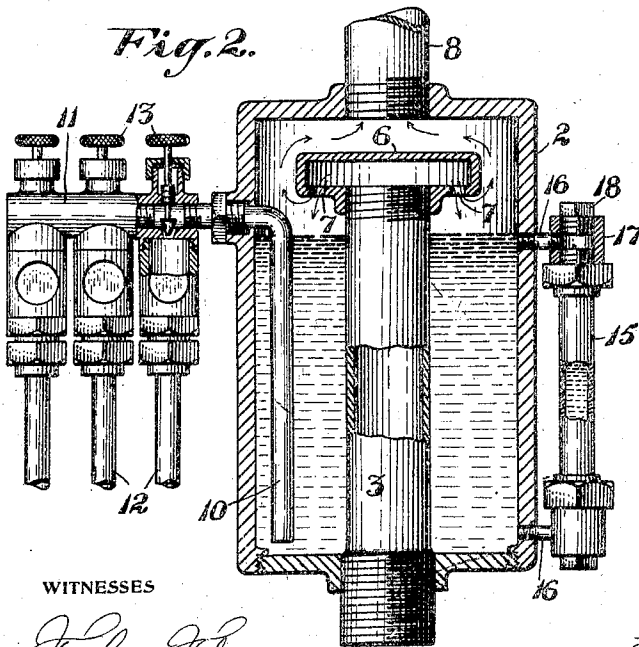


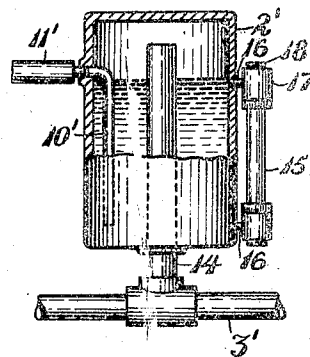
Fig. 2.



WITNESSES

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Fig. 3.



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LUBRICATOR.

934,953.

Specification of Letters Patent. Patented Sept. 21, 1909.

Application filed September 9, 1908. Serial No. 452,262.

To all whom it may concern:

Be it known that I, GEORGE E. WITT, citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Lubricators, of which the following is a specification.

My invention relates to lubricating devices.

10 The object of the invention is to provide a simple, practical, automatic self-feeding lubricator for lubricating bearings and other moving parts, in which the lubricating fluid is forced to flow through the medium of
15 compressed air, and which lubricator will only feed oil when the machine is running; also saving all oil discharged from the compressor cylinder.

20 Lubricators and oilers are generally so constructed and operated that they will continue to feed oil, and consequently waste it, after the immediate need for the oil has ceased, as when the machinery is lying idle.

25 The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

30 Figure 1 shows the application of my lubricator to a cylinder of a compressor. Fig. 2 is a central vertical section of my lubricator. Fig. 3 shows a modification.

35 The invention here shown is applied in conjunction with an air compressor A; the oiling device so arranged that it will not only keep the cylinder properly lubricated, but will lubricate all the other bearing parts of the machinery, and whenever the compressor stops, the flow of oil to the various
40 parts of the machine will cease; also any oil blown out of the compressor cylinder will be collected and saved, as will be shortly described.

45 The oiling device consists of a tank or reservoir 2 disposed in the air outlet 3, between the compressor and the receiver 4. The pipe 3 which in ordinary compressors opens into both ends of the cylinder, and in which are disposed the outlet valves 5, leads
50 up into the reservoir 2, and discharges thereinto near the top thereof.

55 In the preferred form of construction, shown in Figs. 1 and 2, the end of the pipe 3, within the reservoir, has a cap 6 which is closed except for the discharge openings 7 on its under side through which the air and

oil carried with it from the compressor cylinder is discharged downwardly into the reservoir and the body of contained oil. By this arrangement, considerable oil carried over
60 from the compressor is saved which otherwise ordinarily goes to waste. The air escaping into the reservoir above the body of oil passes thence outward through the continuation 8 of the discharge pipe to the receiver 4; a check valve 9 preventing back
65 flow and leakage from the receiver. As a consequence of this construction, the body of oil in the reservoir 2 is subjected, while the compressor is running, to a constant air pressure. This air pressure is taken advantage
70 of to feed the oil automatically to the various parts of the machine, or machinery, needing lubrication. As here shown, the oil discharge pipe 10 has an open end disposed
75 in the body of oil in the reservoir 2, near the bottom of the latter; this pipe extending upward above the oil level, and passing thence out of the reservoir through a suitably packed joint, and delivering oil into a
80 distributor 11. From this distributor extend any desired number of oil feed pipes 12; the flow of oil to each pipe 12 being suitably controlled by an appropriate means, as the needle valves 13. One of these pipes
85 12 may lead to the center of the air compressor cylinder, as here shown, for the purpose of oiling the interior of the latter, and the other oil pipes, of which there may be any number, may lead off to various journals
90 and other wearing parts of the machine, or machinery, needing lubrication.

As long as the compressor runs, the air pressure in the reservoir 2 will force the oil out of the latter, and up through the pipe
95 10 through the various channels to the parts to be lubricated. The moment the compressor stops, the oiling will stop, because the closing of the check valve 9 will shut off communication between the oiling devices
100 and the receiver, and the air pressure in the compressor falls. The moment the compressor is started up, the oiling operation is resumed automatically. This is of great advantage because frequently with manually
105 or mechanically controlled oilers damage to the bearings or other parts of the machinery occurs by a failure to turn on the oil when the machinery is started up; or loss of oil occurs during the hours of idleness of a
110 machine by failure, frequently due to the forgetfulness of the operator to turn off the

oil. By my arrangement, the turning on and off of the oil is automatically done by the starting and stopping of the compressor. Furthermore by interposing the oil reservoir in the air discharge pipe in the manner shown, and having a perforated cap as 6, whatever oil is carried over from the compressor is intercepted and collected in the reservoir 2, and prevented from passing on into the receiver.

In Fig. 3 I have shown a modification of the invention, in which practically the same means for automatically starting and stopping the oiling operations are employed, but without the advantage of collecting the oil passing out from the compressor through the air discharge pipe. In this case I connect a pipe 14 with the air discharge pipe 3', and lead this pipe up into the top of the oil reservoir 2' so that a constant pressure in the body of oil in the reservoir 2' is maintained while the compressor is running. The oil for lubricating purposes is forced out of the reservoir 2' through the upwardly extending pipe 10' and into the distributor 11', thence to be distributed as before. In this case as in the first one, the flow of the oil is dependent on the running of the compressor; when the compressor starts, the oil will start up, and when the compressor stops the oiling will automatically stop.

Any suitable means may be employed to fill the oil reservoir. As here shown a gage glass 15 is suitably supported on the outside of the reservoir, with its upper and lower ends opening into the reservoir, through suitable ports 16. Oil is fed in at the top of the union 17 at the lower end of which the upper end of the gage-glass is secured; the filling opening being normally closed by a screw-plug 18.

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

1. The combination with an air com-

pressor and a discharge pipe thereof, of a receiver with which the discharge pipe is connected, a check valve between the receiver and compressor, an oil reservoir interposed in the discharge pipe between the check valve and the compressor, said discharge pipe opening into the reservoir whereby the oil contained therein is subject to the pressure of the air, and feed pipe connections between the reservoir and the part to be lubricated.

2. The combination with an air compressor, and a discharge pipe thereof, of an oil reservoir into which said discharge pipe enters, supply connections between the reservoir and the part to be lubricated, and a valved air outlet from the reservoir, said air discharge pipe delivering compressed air into the reservoir above the level of the oil so as to exert a pressure on the oil when the compressor is running, said pressure being relieved when the compressor stops whereby the feed of oil is controlled by the operation of the compressor.

3. The combination with an air compressor and the discharge pipe thereof, of an oil reservoir into which said air discharge pipe discharges, said air discharge being above the level of the oil in the reservoir, said oil reservoir having a valved air outlet, said air discharge pipe having its end within the reservoir provided with a cover cap with underneath openings for the arresting within the oil reservoir of any oil passing through said air discharge pipe, and an oil discharge pipe from the reservoir extending down into the body of oil, with its delivery end above the level of the oil in the reservoir.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GEORGE E. WITT.

Witnesses:

CHARLES A. PENFIELD,
JAMES MASON.