

(No Model.)

M. B. WIBLE & H. D. PRESSEY.
LUBRICATOR.

No. 534,591.

Patented Feb. 19, 1895.

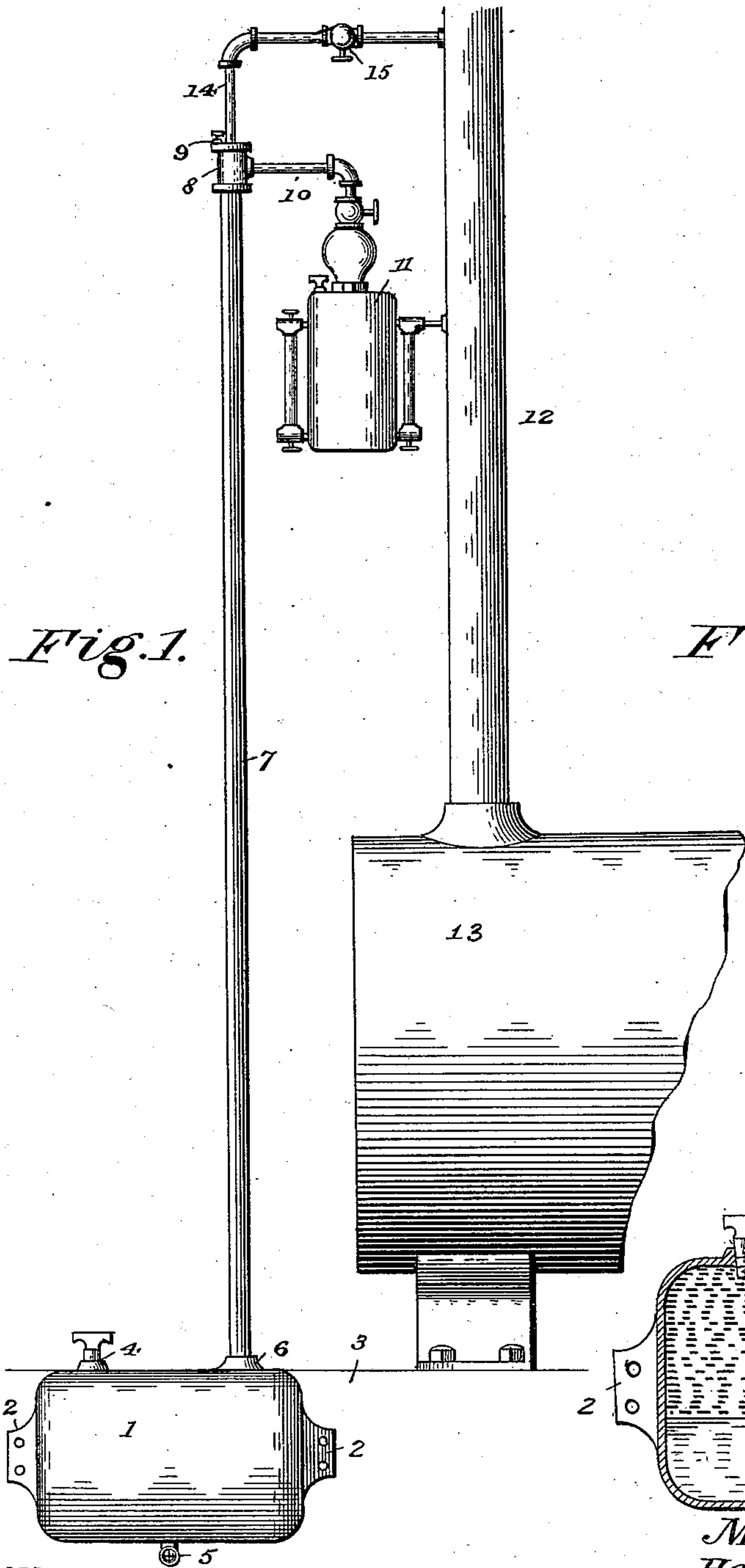


Fig. 1.

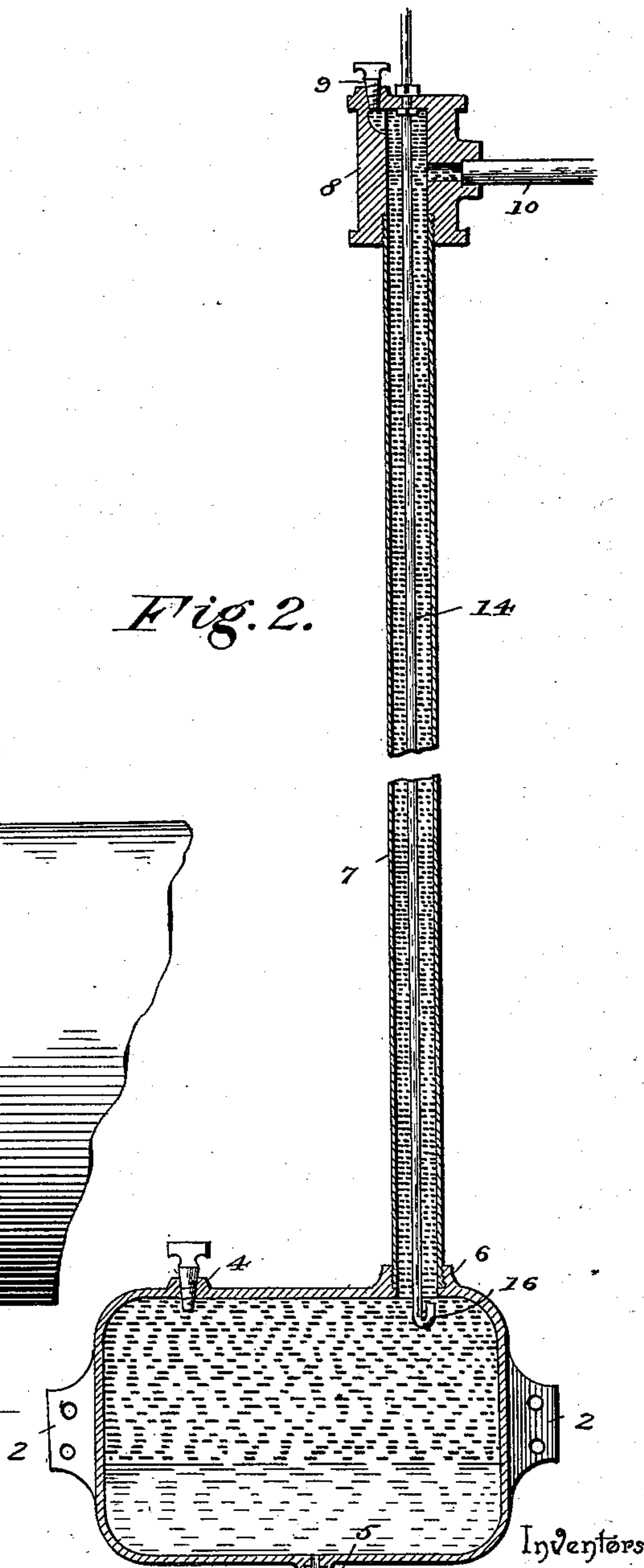


Fig. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

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LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 534,591, dated February 19, 1895.

Application filed October 28, 1893. Serial No. 489,413. (No model.)

To all whom it may concern:

Be it known that we, MILO BROWN WIBLE and HENRY DANIEL PRESSEY, citizens of the United States, residing at Arcata, in the county of Humboldt and State of California, have invented a new and useful Automatic Lubricator, of which the following is a specification.

This invention relates to lubricators; and it has for its object to provide certain improvements in lubricators of that character wherein the oil is displaced by a hydrostatic pressure or water column.

To this end the main and primary object of the invention is to effect certain improvements in automatically operating lubricators of the character noted, whereby the same will be rendered more efficient for use in lubricating the interior working parts of steam engines and similar machinery, and also to provide a lubricator in which overheating of the lubricator proper is avoided and the sight glasses are always kept clear, and also whereby the steam employed in connection with the lubricating device is caused to escape out of the break, should any occur.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

In the drawings, Figure 1 is a front elevation of a lubricating apparatus constructed in accordance with this invention, shown applied to the live steam pipe of an ordinary engine, one end of the cylinder of which is shown. Fig. 2 is an enlarged detail sectional view of a portion of the apparatus showing particularly the relative arrangement and construction of the steam and oil pipes.

Like numerals of reference indicate corresponding parts in both figures of the drawings.

Referring to the accompanying drawings, the numeral 1 designates a cylindrical or other suitable shaped oil supply tank, which is adapted to contain the oil to be fed to the lubricating device proper, as well as to receive the condensed steam or water which is employed for displacing the oil and feeding it to the parts to be lubricated. The oil-sup-

ply tank 1 may be provided at both ends thereof with suitable ears or lugs 2, which receive bolts or screws for clamping the same to the engine bed 3, or other convenient point of attachment, and said oil-supply tank 1 is further provided in the top thereof with the plugged filling opening 4, through which the oil is introduced when the tank 1 is being filled, and the latter is further provided in the bottom thereof with the valved waste-cock 5, by means of which the condensed steam or water may be drawn out of the tank when the same has been emptied of the oil by the feeding thereof to the lubricator proper. The main oil-supply tank 1 is also provided in the top thereof with an oil-discharge opening 6, into which is fitted the lower end of the oil-feed pipe 7.

The oil-feed pipe 7 extends a suitable distance above the tank 1, so as to be properly connected to the lubricator part of the apparatus, and it has connected to the upper end of the coupling head 8, which head is provided with a filling opening 9, which may be used instead of the opening 4, for the purpose of refilling the tank 1, with oil after the same has been emptied, and the said coupling head 8 has connected to one side thereof one end of the connecting pipe 10, which is coupled to and fits into the upper end of the ordinary sight-feed lubricator or secondary oil reservoir 11.

The sight-feed lubricator 11 may be used in connection with any machinery to be lubricated, but as illustrated in the present invention, the same is connected to the live steam pipe 12, which leads into an engine cylinder 13, and means are thus provided for introducing oil into the engine cylinder, whereby the interior working parts of the engine may be properly lubricated.

A steam supply pipe 14 is coupled to the engine steam pipe 12, at a suitable point above the lubricator 11, and is provided with a valve 15, which provides means for regulating the flow of steam through such pipe. The said pipe 14 projects through the coupling head 8, at the upper end of the oil feed-pipe 7, and extends inside of said oil feed-pipe 7, the entire length thereof, to a point inside of the top of the supply tank immedi-

ately below the connection of the pipe 7 there-
to, and said steam pipe 14, is provided at its
lower extremity with a curved upturned seal
bend 16, which is useful in providing means
5 whereby the condensed steam or water in the
lower portion of such pipe will not run en-
tirely out of the same when the oil-supply
tank 1 is being refilled, and also to provide
means for directing the escaping steam up
10 through the pipe 7, should any breakage oc-
cur in the apparatus, thereby permitting such
escaping steam to find vent through the break,
wherever it may be.

By reference to the drawings it will be no-
15 ticed that the up-turned seal bend 16 of the
pipe 14, together with the pipe 14, do not oc-
cupy a space greater than the diameter of the
pipe 7, so that the upper discharge end of the
bend 16 shall be located within the area of
20 the oil feed pipe so as to discharge directly
thereinto.

From the foregoing it is thought that the
construction, operation and advantages of the
herein described lubricating apparatus will
25 be readily apparent to those skilled in the
art. After the oil-supply tank 1 has been
filled with the liquid or oil, either through
the opening 4 or 9, steam is turned into the
pipe 14 through the valve 15, and condensing
30 before reaching the bottom of the tank 1, the
water of condensation accumulates in the
bottom of said tank and displaces the oil
therein, causing the same to rise up the pipe
7 and to be fed into the sight-feed lubricator
35 11, from which it is carried to the point of
use, which is illustrated to be an ordinary
engine cylinder.

By the employment of the tank 1 a large
supply of oil is always available for the lu-
40 bricating device, while at the same time it is
almost impossible for steam to get to the lu-
bricator, thereby providing means for always
keeping the sight glasses of the lubricator
clear, and in the event of a break in the lu-
45 bricator the disposition of the lower upturned
bend 16, of the pipe 14, directs the steam up
the pipe 7 and allows it to escape out at the
break, and at this point it may be well to again
observe that the bend 16 will provide a water
50 seal at that point, when the valve 15 is closed
and the tank 1 is being filled with oil, so that
all the water will not run out of the pipe 14.

When the apparatus is in operation it will
of course be understood that the oil is forced
55 through the lubricator 11 and into the pipe
12 in small regulated quantities, and there is
therefore necessarily an appreciable resist-
ance to the free flow of oil through such lubri-

cator. For this reason a similar resistance is
given to the passage of the steam out of the 60
pipe 14, so that the steam in such pipe will
have an opportunity to condense before reach-
ing the bend 16 and provide for the operation
of the apparatus. Now in the event of an
extreme break occurring in the lubricator 11, 65
there will be no further resistance to the free
flow of oil up through the oil pipe 7, and the
column of oil contained in such pipe will be
forced out through the break in the lubrica-
tor, and at the same time no further resist- 70
ance being offered to the steam in the pipe 7
the same passes out through the bend 16, and
follows the oil up through the pipe 7 and out
of the break. By thus directing the steam,
the oil that remains in the tank 1, will be 75
undisturbed. Otherwise such remaining oil
would also be blown out of the tank.

Changes in the form, proportion and the
minor details of construction may be re-
sorted to without departing from the spirit 80
or sacrificing any of the advantages of this
invention.

Having thus described our invention, what
we claim, and desire to secure by Letters Pat-
ent, is— 85

The combination in a condensation dis-
placement lubricator; of a suitably arranged
oil supply tank provided in its top with a
filling opening and an oil discharge opening,
an upright oil feed pipe fitted at its lower end 90
into the oil discharge opening of the oil supply
tank, a secondary oil reservoir, a pipe connec-
tion between the upper end of the secondary
oil reservoir and the upper end of said oil sup-
ply pipe, said oil supply pipe being closed at 95
its upper end, and a smaller valved steam
pipe arranged longitudinally inside of the
larger oil feed pipe and extending throughout
its entire length, said smaller steam pipe be-
ing provided at its lower end in the top part 100
of the oil supply tank with a short upturned
seal bend 16, the upper discharging end of
said bend being located within the area of the
oil feed pipe and disposed in a longitudinal
line therewith so as to discharge steam there- 105
into in a direct line with the length thereof
in the event of a breakage in the secondary
oil reservoir, substantially as set forth.

In testimony that we claim the foregoing as
our own we have hereto affixed our signatures 110
in the presence of two witnesses.

MILO BROWN WIBLE.

HENRY DANIEL PRESSEY.

Witnesses:

BARRY M. ADAMS,

ISAAC H. SEMBOWER.