

(No Model.)

J. GROSS.
DEVICE FOR COLLECTING DRIP OIL.

No. 442,972.

Patented Dec. 16, 1890.

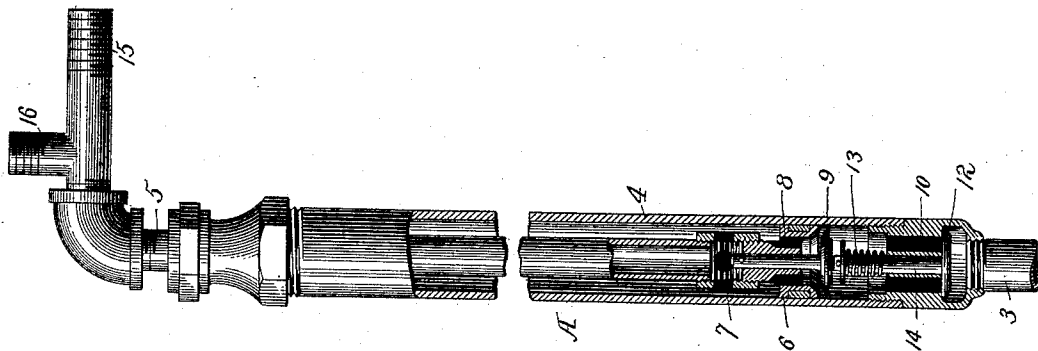


Fig. 2

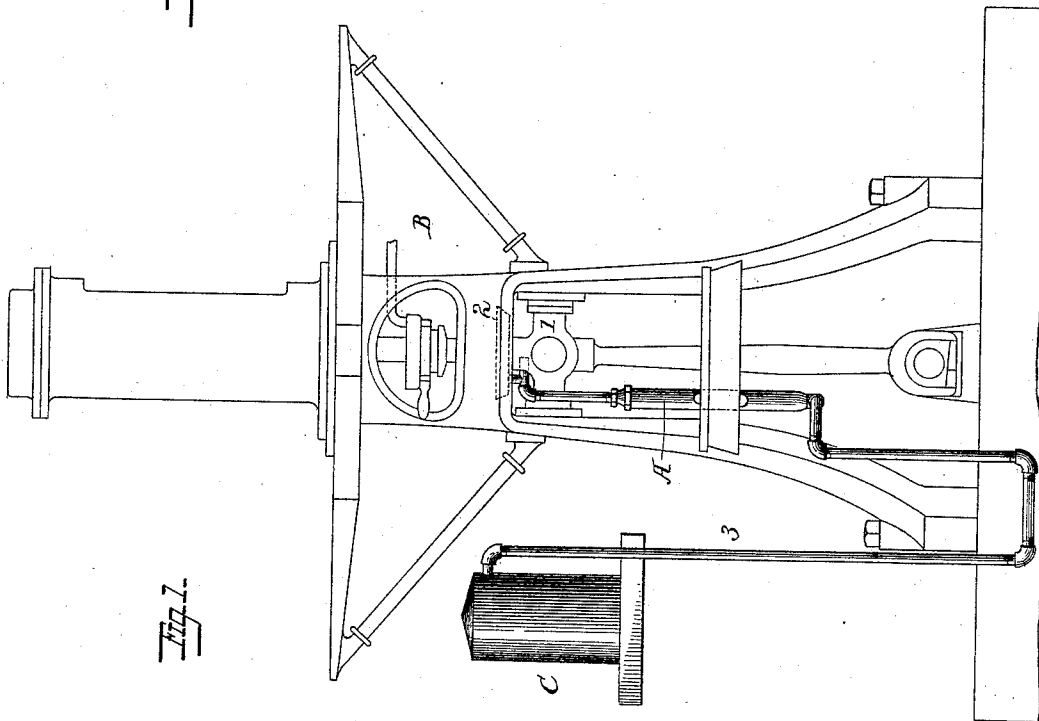


Fig. 1

WITNESSES

Jos. G. Hinkel
Georgia P. Kramer

INVENTOR

Jacob Gross
By *Asst. Freeman*
Attorneys.

UNITED STATES PATENT OFFICE.

JACOB GROSS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF
TO GEORGE J. MILLER, OF SAME PLACE.

DEVICE FOR COLLECTING DRIP OIL.

SPECIFICATION forming part of Letters Patent No. 442,972, dated December 16, 1890.

Application filed June 23, 1890. Serial No. 356,328. (No model.)

To all whom it may concern:

Be it known that I, JACOB GROSS, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Devices for Collecting Drip Oil, of which the following is a specification.

My invention relates to means for preserving the waste or drip oil from various classes of machines, more especially ice-making machines; and my invention consists of a pump constructed to receive said drip oil and to force it into an elevated reservoir, substantially as set forth hereinafter, and as illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of a part of an ice-making machine provided with my improvement. Fig. 2 is an enlarged view of the pump in part section.

For the purpose of illustrating my invention I have shown it connected with an ice-machine B, the construction of which need not be set forth in detail, which machine has a reciprocating cross-head 1 and one or more trays or receptacles of any suitable character so arranged as to receive the drip or waste oil from those portions of the machine which have to be lubricated. As is well known, a large quantity of oil must be used in machines of this character, and there is usually a large percentage of waste, which it is the object of my invention to avoid.

A is a pump of any suitable character connected to be operated by a moving portion of the machine, and C is an elevated reservoir, into which the oil is pumped through a pipe 3, and from which the oil may be conveyed by other pipes, if required, to different portions of the machine. The pump consists of the outer casing or cylinder 4, the piston 6, the reciprocating piston-rod 5, and suitable valves. As shown, the piston-rod 5 is a tube having a branch or branches communicating with the receptacle or receptacles 2, so that the drip oil received into the latter passes downward through the tubular rod 5 into the cylinder 4 and through lateral orifices 7, and in the piston 6 are other orifices 8, that permit the oil to flow downward through the piston, except when a check-valve 9, car-

ried by the piston and opening downward, is upon its seat. At the lower end of the cylinder is a port or ports 10, closed by a valve 12, opening downward, and lifted by a spring 13, so as to be normally closed, the stem 14 of the valve being of such length as to make contact with the piston 6 or its valve as the piston reaches its lowest position. The oil flows into the cylinder 4, and when the piston rises the valve 9 opens and the oil flows downward into the space above the valve 12, which is held by the spring to its seat and retains the oil in the cylinder. When the piston descends, the valve 9 closes, and as soon as the said valve makes contact with the stem 14 the valve 12 is forced downward, and the body of oil below the piston is forced through the ports 10 and pipe 3 into the reservoir C. As soon as the piston begins to rise the valve 12 is closed by its spring, thereby sealing the ports 10, so that the oil cannot flow back through the pipe to the cylinder. If the body of oil that accumulates in the cylinder during the upstroke of the piston should be sufficient to cover the stem 14, rising above the latter, then in that case the contact of the piston with the oil will force down the valve 12. The end of the tubular piston-rod 5 is connected to the cross-head by a branch 15, while the branch 16 communicates with the receptacle 2, and the latter is arranged to receive the drip from another receptacle above, whereby the oil is conveyed to the cylinder 4 through the piston-rod, which is carried upward and downward with the moving cross-head.

It will be evident that the pump may be arranged in different positions to receive and direct the oil to the elevated reservoir, from which it may be conveyed to any suitable point in quantities as desired.

I am aware of the use of pumps driven by operating parts of machines for the purpose of pumping the oil through the pipes directly to the parts to be lubricated; but this arrangement is open to the objection that the oil must be pumped to said parts whether the lubrication is required or not whereas in the construction which I have devised the oil from all parts of the machine is accumulated in one reservoir, from which it may be con-

veyed to different parts in any suitable manner and quantities, as required.

Without limiting myself to the precise construction and arrangement of parts, I claim—

5 1. The combination, with a machine, of an oil-pump having a tubular piston-rod connected with a moving part of the machine and communicating with a receptacle upon said moving part for receiving the drip oil,
10 and an elevated reservoir communicating with the pump, substantially as set forth.

2. The combination, with a machine, of a receptacle upon a moving part of the machine for the drip oil, a pump having a tubular piston-rod communicating with said receptacle and connected with said moving part, and
15 provided with a perforated piston and valve and communicating with an elevated reservoir through an opening closed by a self-closing valve, substantially as set forth.
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3. The combination, with a machine having a drip-oil receptacle upon a moving part thereof, of a pump consisting of a cylinder 4, communicating at one end with an elevated reservoir through an opening 10, a spring- 25 actuated valve 12, closing said opening, a hollow piston-rod connected to a reciprocating portion of the machine and communicating with the receptacle and connected to the piston 6, having ports 8, and a downwardly-opening valve 9, substantially as described. 30

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JACOB GROSS.

Witnesses:

JACOB R. DE DIER,
JACOB GOTINGER.