No. 638,626. Patented Dec. 5, 1899.

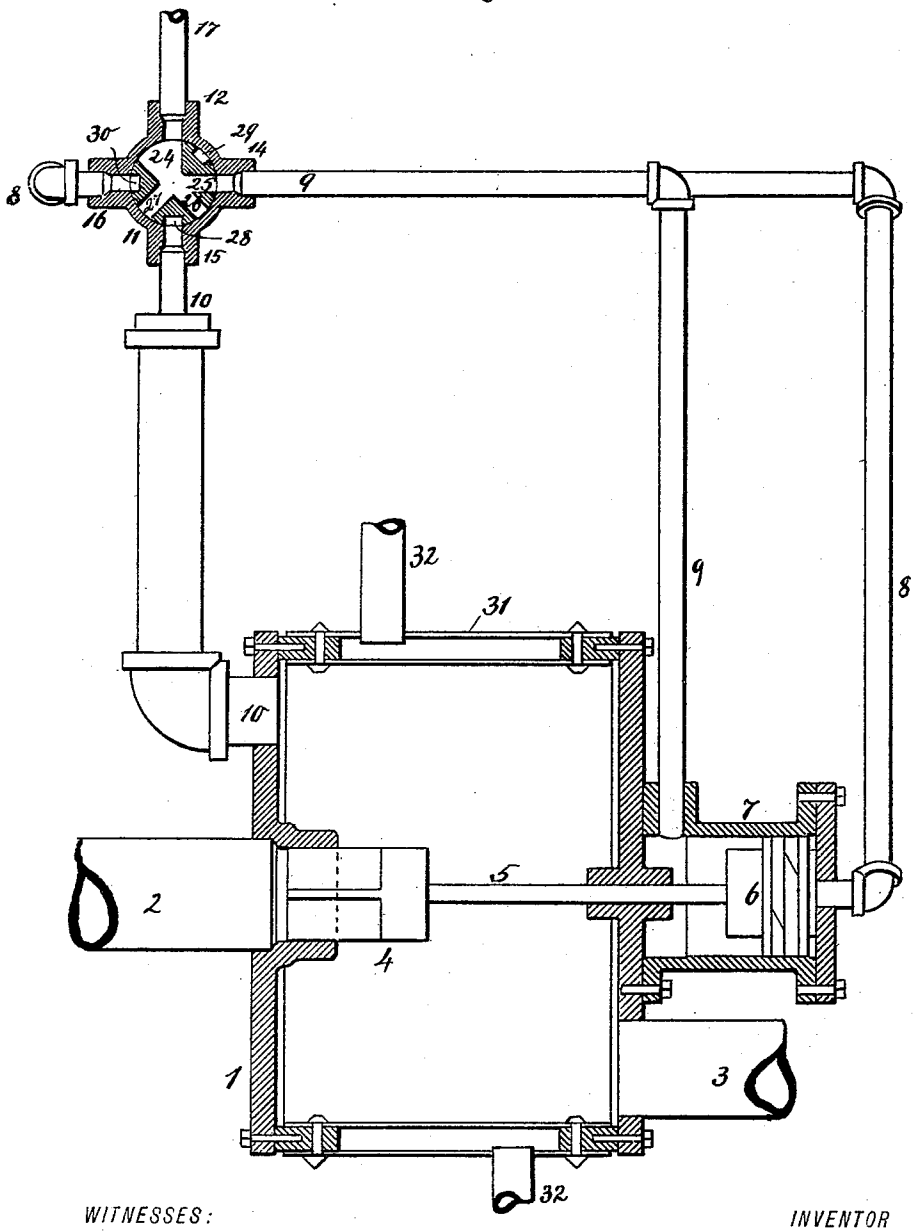
C. L. CUMMINGS.

LIFT FOR ASPHALT, &c.

(Application filed Jan. 12, 1899.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.



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Fig. 2.

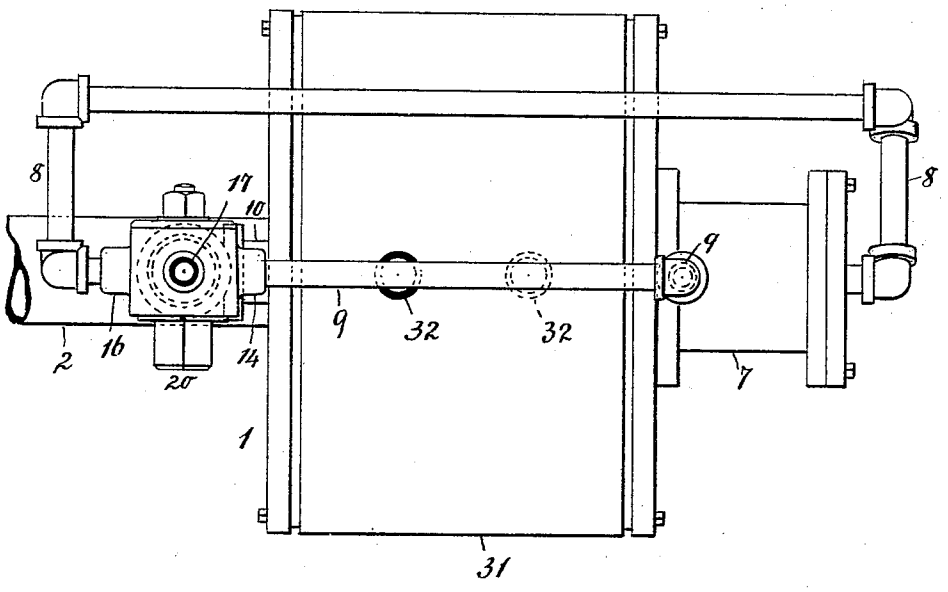
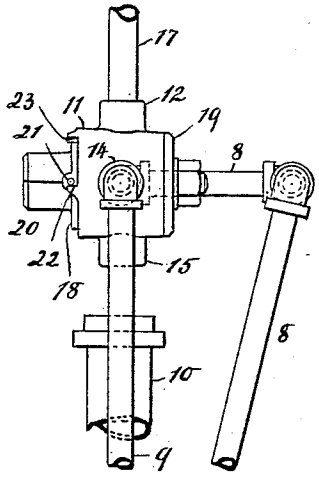


Fig. 3.



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Fig. 4.

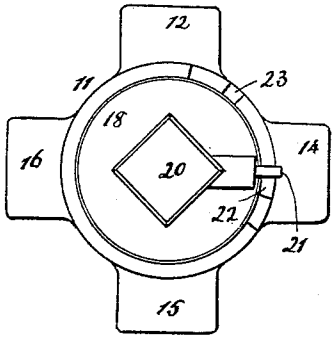


Fig. 5.

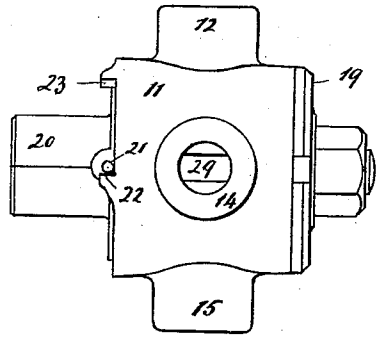


Fig. 6.

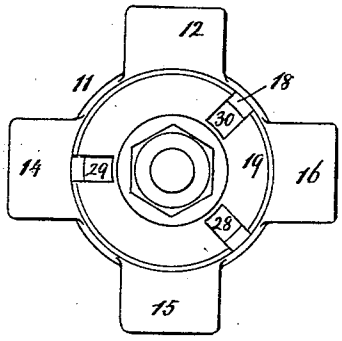


Fig. 7.

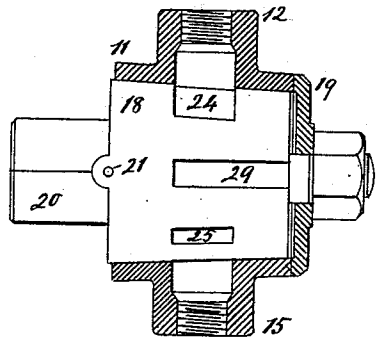
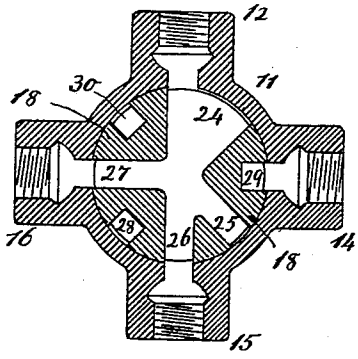


Fig. 8.



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UNITED STATES PATENT OFFICE.

CHARLES L. CUMMINGS, OF NEW YORK, N. Y.

LIFT FOR ASPHALT, &c.

SPECIFICATION forming part of Letters Patent No. 638,626, dated December 5, 1899.

Application filed January 12, 1899. Serial No. 701,984. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. CUMMINGS, a citizen of the United States, residing at New York city, borough of Manhattan, in the county and State of New York, have invented new and useful Improvements in Lifts for Asphalt and other Material, of which the following is a specification.

This device can serve as a lift or pump for liquid asphalt, pitch, or other liquids or materials; and the invention resides in the features of construction set forth in the following specification and claims and illustrated in the annexed drawings, in which—

Figure 1 is a side elevation of the apparatus, partly in section. Fig. 2 is a plan view of Fig. 1. Fig. 3 is an end view of Fig. 1. Fig. 4 is a side elevation of a valve. Fig. 5 is a view into one of the nipples or ports of a valve-casing. Fig. 6 shows the opposite side of the valve from that exposed in Fig. 4. Fig. 7 shows a valve-plug with the casing sectioned or partly cut away. Fig. 8 shows the valve-plug in different position from that shown in Fig. 1.

A suitable receptacle or cylinder 1, Fig. 1, has an inlet 2 and outlet 3. A plug or wing valve 4 is shown at the inlet to alternately open and close the latter. The valve 4 is shown inside the receptacle and has a rod 5, with piston 6 in cylinder 7, having conduits 8 and 9. If pressure is caused in conduit 8 and exhaust in conduit 9, the piston 6 is actuated to close valve 4. Conversely, pressure at 9 and exhaust at 8 will cause the valve to open.

The receptacle 1 is shown with a conduit or opening 10. Supposing the inlet 2 to communicate with a reservoir or supply (not shown)—as, for example, an asphalt-melting kettle—and the valve 4 to be open, the air in receptacle 1 being allowed to pass off through conduit 10, the inlet 2 will then fill or charge the receptacle. On now closing the inlet or valve 4 and causing pressure to enter the receptacle through conduit 10 the contents of the receptacle will be caused to pass through outlet 3 to be led to any suitable point for use.

A valve seat or casing 11 is shown with four ports 12, 14, 15, and 16. A pressure tube or supply 17 communicates with port or pressure inlet 12. The valve-plug 18 is held in the seat or case 11 by a disk or washer 19, suitably screwed or secured in place, and has a stem 20 for the engagement of a key or handle. The valve can be set to two positions, as shown by Figs. 1 and 8, a stop 21, striking one or another of shoulders 22 and 23, limiting the play of plug 18. This plug has four channels 24, 25, 26, and 27. The channel 24 is of such size or shape that the channels are always in communication with the pressure-supply 17 or 12, no matter how the valve is set. In addition to the channels 24 to 27 the valve-plug 18 has three vents 28, 29, and 30, which have some resemblance to keyways, extending from an edge part way along the face or circumference of plug 18, as shown by vent 29 in Fig. 7.

When the valve is set, as seen in Fig. 1, pressure enters conduit 9 from port 14 and channel 25, while conduit 8 exhausts through port 16 and vent 30 and conduit 10 exhausts through vent 28. The inlet 2 is now open and the tank or receptacle 1 fills or charges. On shifting the valve to the position shown in Fig. 8 the conduit 9 will exhaust through vent 29 and conduit 8 receives pressure from channel 27, while conduit 10 receives pressure from channel 26. The piston 6 is now shifted to close valve 4 and tank 1 empties through outlet 3.

The receptacle 1 is shown with a jacket 31, having circulating-pipes 32; but this jacket may not be required under circumstances. The receptacle 1 could have a communication, for example, to an asphalt-melting kettle or might be immersed in said kettle for the material to enter inlet 2.

The device can of course be modified. The valve 4 could, for example, be actuated by hand or otherwise than by piston 6.

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

1. A lift comprising a receptacle having an inlet at one end, and an outlet at the opposite end, a reciprocating valve in said inlet movable longitudinally of said receptacle, a piston on the stem of said valve, a cylinder in which said piston works, tubes or conduits communicating with said cylinder, a tube or conduit communicating with said receptacle, a valve-seat communicating with the several conduits and having a pressure-inlet, and a

rotary valve having channels and vents therein, said channels being in permanent communication with said inlet, and said channels and vents being adapted to communicate alternately with said conduits, substantially as described.

2. A lift comprising a receptacle with inlet and outlet, a valve, a cylinder and piston for actuating the valve, tubes or conduits for the cylinder, a tube or conduit for the receptacle, a valve-seat having a pressure inlet or port and made to communicate with the several conduits, and a valve or plug having channels and vents, said channels being made to permanently communicate with the pressure-inlet and said channels and vents being made to alternately communicate with the conduits substantially as described.

3. A valve comprising a casing having ports 12, 14, 15, 16, therein, and a plug movable in said casing having channels 24, 25, 26, 27, extending therethrough and communicating with each other, and having vents 28, 29, 30, leading from points in line with said ports to one end of the plug, the channel 24 having a wider mouth than the others and adapted to be retained in permanent communication with the port 12, the vents and all the remaining channels being arranged to alternately communicate with the remaining ports when the plug is moved to the extent of its stroke in opposite directions.

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

CHARLES L. CUMMINGS.

Witnesses:
W. C. HAUFF,
E. F. KASTENHUBER.