Dec. 25, 1923. 1,478,430

O. HAJEK ET AL

VALVELESS LUBRICATING PUMP

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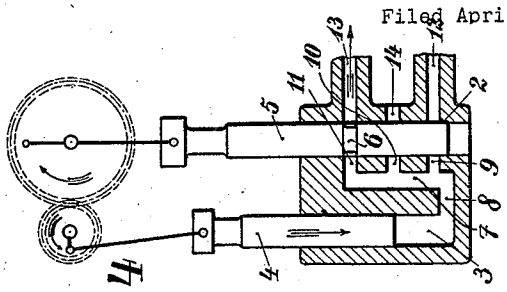


Fig.4

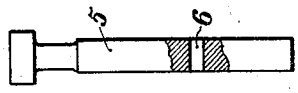


Fig.6

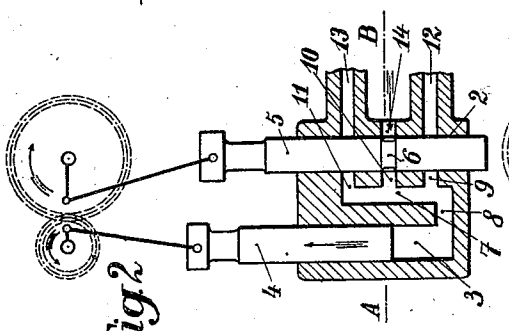


Fig.2

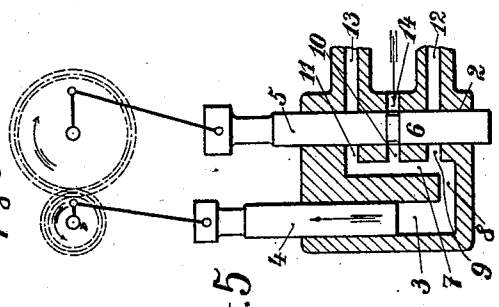


Fig.5

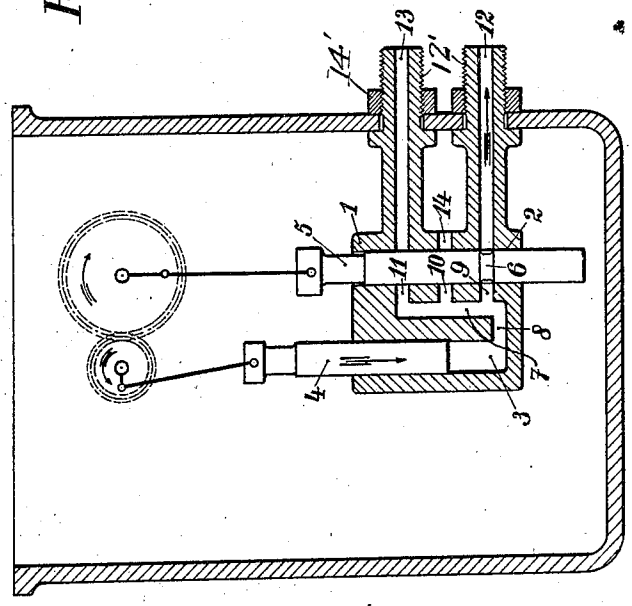


Fig.1

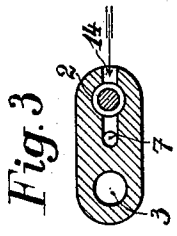


Fig.3

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UNITED STATES PATENT OFFICE.

OTTO HAJEK AND FRITZ UIBERALL, OF VIENNA, AUSTRIA.

VALVELESS LUBRICATING PUMP.

Application filed April 22, 1922. Serial No. 556,027.

To all whom it may concern:

Be it known that we, OTTO HAJEK, mechanical engineer, and FRITZ UIBERALL, mechanical engineer, both citizens of the Republic of Austria, and residents of Vienna, Austria, have made new and useful Improvements in Valveless Lubricating Pumps, as set forth in the annexed specification.

This invention relates to valveless lubricating pumps with two cylinders arranged in a casing, provided with a pressure-piston in one cylinder and a distributing piston in the other and wherein the movement of the two pistons is such that the number of strokes made by the pressure-piston is double to that made by the distributing piston, so that two oil-distributing leads can alternately be supplied with oil.

In arrangements of such lubricating pumps hitherto known the distributing piston is provided with conchoidal recesses or with several grooves or bores. This necessity is obviated, according to this invention, by the peculiar construction of the cylinder casing and by providing the distributing piston with only one groove or only one channel, while the pressure-piston is a smooth cylinder.

In the drawing Fig. 1, 2, 4 and 5 show longitudinal sections through the pumps, Fig. 3 shows a vertical cross-section along line A—B of Fig. 2, Fig. 6 shows another form of construction of the distributing piston, where a cross-channel is arranged instead of a groove.

1 indicates the casing, containing the distributing piston cylinder 2, the pressure piston cylinder 3, the pressure piston 4, and the distributing piston 5 in its cylinder, 6 indicates a groove in the distributing piston, 7 a channel arranged between the distributing piston cylinder and the pressure piston cylinder, suitably in a position parallel to both. This channel 7 is in its lower part connected with the lower part of the pressure piston cylinder 3 by means of the opening 8 and is, besides provided with three channels 9, 10 and 11 arranged one above the other, which lead from channel 7 into the distributing piston cylinder. Moreover there are provided three channels 12, 13 and 14, of which channel 14 is intended for the inlet of the oil while the other two, 12 and 13 are intended for the outlet of the oil. The channels 12 and 13 are preferably provided through exteriorly threaded attaching nipples 12′ which extend laterally from the casing 1 and are arranged through the walls of the receptacle 13 and held in place by suitable means such as nuts 14′.

As shown in Fig. 6, the distributing piston may also be provided with a channel instead of a groove. The channels 9, 10 and 11 leading from channel 7 into the distributing piston cylinder can be brought into communication with channels 12, 14, 13 respectively, according to the position of the distributing piston, by way of the groove 6.

The piston must be reciprocated in such a manner that the rate of reciprocation of the pressure-piston is double to that of the distributing piston; the mechanism to obtain this movement is not an object of this invention. In the drawings such a mechanism is shown by way of example and only diagrammatically and the operation of the pumps is not in any way affected by the means to produce the necessary reciprocating movement of the piston.

What we claim is:

1. A lubricating pump comprising a casing provided with a pressure piston cylinder, a distributing piston cylinder and a channel, the channel being arranged in communication with the pressure piston cylinder, the casing being also provided with three passageways intersecting the distributing piston cylinder and communicating with the channel, one passageway acting as an inlet for the oil, the two remaining passageways acting alternatively as outlets for the oil, a pressure piston and a distributing piston arranged in the respective cylinders, the distributing piston being provided with means for alternately arranging the oil inlet and the oil outlets in communication with the pressure piston cylinder, and means for reciprocating the pistons in such a manner that the rate of reciprocation of the pressure piston is double that of the distributing piston.

2. A lubricating pump including a casing provided with a pressure piston cylinder and a distributing piston cylinder spaced therefrom and also provided with a channel betwen the cylinders, the channel being arranged in communication with the pressure piston cylinder, the casing being further provided with three passageways intersecting the distributing cylinder and communicating with the channel, one passageway acting as an inlet for the oil, the two remain-

ing pasageways acting alternately as outlets for the oil, a pressure piston and a distributing piston arranged in the respective cylinders, the distributing piston being provided with a passageway for alternately arranging the oil inlet and the oil outlets in communication with the pressure piston cylinder, and means for reciprocating the pistons in such a manner that the rate of reciprocation of the pressure piston is double that of the distributing piston.

3. A lubricating pump consisting of a casing provided with a pressure piston cylinder, a distributing piston cylinder and a channel, the channel being situated between the cylinders while the cylinders and the channel are arranged parallel to each other, the casing being also provided with means for arranging the pressure piston cylinder in communication with the channel and further provided with three horizontally spaced passageways intersecting the distributing piston cylinder and communicating with the channel, one passageway acting as an inlet for the oil and the two remaining passageways acting as outlets for the oil, a delivery piston and a distributing piston arranged in the respective cylinders, the distributing piston being provided with a duct for alternatively arranging the oil inlets and the oil outlets in communication with the pressure piston cylinder and means for reciprocating the pistons in such a manner that the rate of reciprocation of the pressure piston is double that of the distributing piston.

4. A lubricating pump comprising in combination oil containing receptacles, a casing, integral nipples acting laterally from one side of the casing and engaged through one wall of the receptacle, means for clamping the nipples so as to support the casing, the casing being provided with a pressure piston cylinder, a distributing cylinder and a channel arranged parallel between the cylinders and having the lower portion arranged in communication with the pressure piston cylinder, the casing being further provided with three horizontally spaced passageways which intersect the distributing piston cylinder and communicate with the channel, one of the passageways opening at the side of the casing and serving as an inlet for the oil, the two remaining passageways extending through the nipples and serving alternately as outlets for the oil, a delivery piston and a distributing piston arranged in the respective cylinders, the distributing piston being provided with a duct for alternatively arranging the oil inlets and the oil outlets in communication with the pressure piston cylinder, and means mounted in the receptacle for reciprocating the pistons in such a manner that the rate of reciprocation of the pressure piston is double that of the distributing piston.

In testimony whereof we have signed our names to this specification.

OTTO HAJEK.
FRITZ UIBERALL.

Witnesses:
CARL CONOTENBORG,
HEINRICH MISCHKORTHS.