

No. 706,564.

Patented Aug. 12, 1902.

B. IVOR & J. S. WARD.
PUMP.

(Application filed Dec. 17, 1901.)

(No Model.)

Fig. 1.

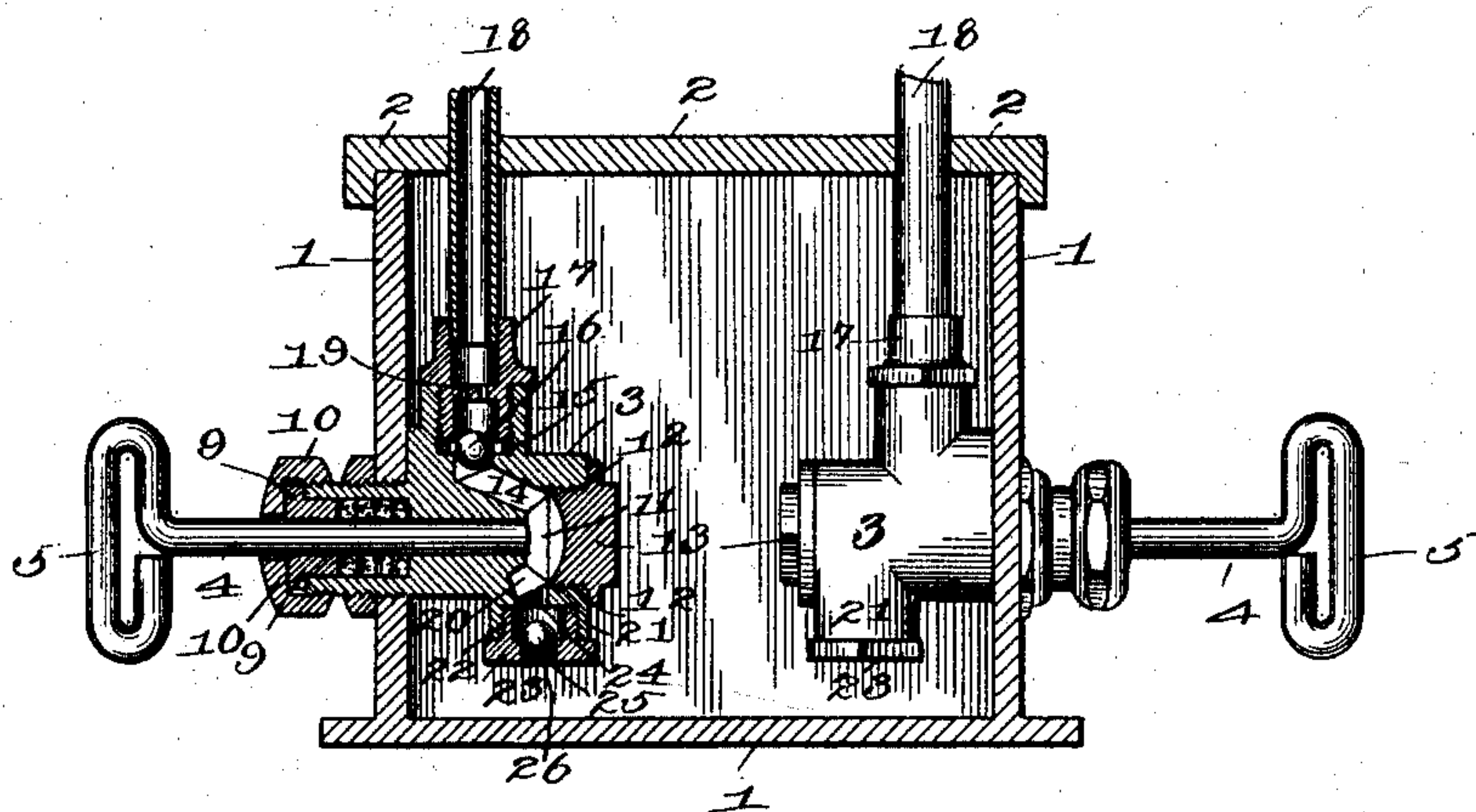
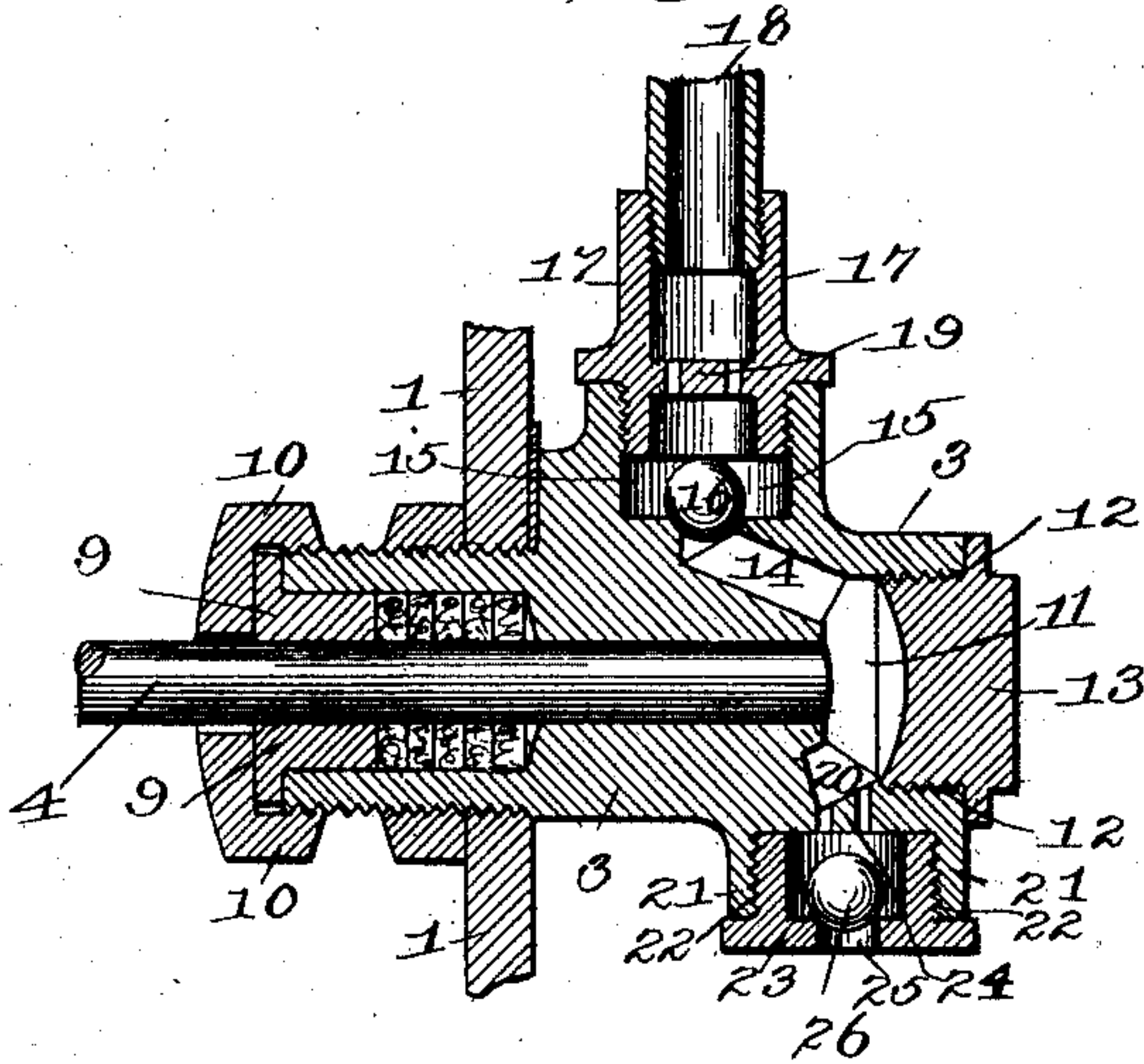


Fig. 2.



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UNITED STATES PATENT OFFICE.

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PUMP.

SPECIFICATION forming part of Letters Patent No. 706,564, dated August 12, 1902.

Application filed December 17, 1901. Serial No. 86,205. (No model.)

To all whom it may concern:

Be it known that we, BARRY IVOR and JOHN S. WARD, citizens of the United States, residing in the city of Chicago, county of Cook, and State of Illinois, have invented a new and useful Improvement in Pumps, of which the following is a specification.

Our invention relates to pumps for lubricating purposes; and the objects of our invention are, first, to provide a pump which may be substantially self-priming, and, second, to so arrange the oil-passages as to increase the durability and efficiency of the pump and at the same time simplify the construction. We attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents the assembled machine, taken chiefly in central vertical section through the oil-reservoir; and Fig. 2 is a sectional view of the inner casing on an increased scale.

Similar numerals refer to similar parts throughout both views.

The oil-reservoir 1 is provided with a cover 2 and forms a support for the valve and piston casings 3. Said casings are secured to the sides of said reservoir and are alike in construction. Each of said casings is centrally bored to form a piston-chamber for the pistons 4, which are reciprocated by means of the handles 5 thereon or in any other suitable manner. The outer portion of each casing forms a stuffing-box around the said pistons, being provided with the gland 9 and stuffing-nut 10. At the inner mouth of the piston-chamber in said casing is a transverse oil-passage 11, which thus lies beyond the path of the piston, but is adapted to contain a limited supply of oil ready for use immediately upon starting said piston. Opposite to said piston-chamber in the casing 3 is the opening 12, which is of comparatively great diameter and affords means of ready access to the interior parts both in the construction of the oil-passages and in the cleansing of the same. Said opening is covered by means of the cap-nut 13, which screws into said opening 12 and forms the outer wall of said transverse passage 11. The discharge-passage 14 extends upward from said transverse passage 11 and opens into the discharge-valve chamber 15.

The mouth of said discharge-passage forms a seat for the ball 16, which constitutes the discharge-valve. The nipple 17 screws into the upper extremity of the discharge-valve chamber and connects with the discharge-pipe 18. Said nipple is provided with a strainer 19. The inlet-passage 20 connects with said transverse passage at the lower extremity thereof and is of special construction. Said inlet-passage starts at a point near the bottom of the inner mouth of the piston-chamber and extends downwardly and rearwardly a short distance, lying in such a position that in the construction of the casing said passage may be formed by a drill inserted through the opening 12. Just below said inlet-passage 20 the boss 21 is formed on said casing, which boss has a threaded chamber 22 for receiving the valve-seat 23. Said chamber does not extend completely to said inlet-passage 20, but is so placed as to leave a thin wall 24 between said inlet-passage 20 and chamber 22. Said wall is perforated in such a manner as to form a strainer between said inlet-passage and threaded chamber. Said wall therefore forms an integral part of said casing 3 and not only affords strength combined with simplicity of manufacture, but affords ready access to said strainer. Said valve-seat 23 has an inlet-aperture 25, at the upper end of which the ball 26 is seated.

The casing 3 and connected parts are placed low in the reservoir 1, so that in operation when said reservoir is filled the oil flows by gravity up through the valve-seat 23 into the inlet-passage 20 and transverse passage 11 and ordinarily also into the upper passage 14. This condition obtains without depending upon the motion or position of the piston 4. When now the piston is reciprocated from a rearward position toward the transverse passage 11, the oil being prevented from passing out through the valve-seat 23 is forced up through the discharge-valve chamber 15. When the piston is drawn in the opposite direction, the suction causes oil to be drawn upward through the inlet-valve seat 23 to refill said transverse oil-passage 11. By this construction of the oil-passages and parts the said transverse passage 11 is filled by the weight of the oil itself, so that no matter how long the piston has remained still or in what

position it stopped the casing is at all times primed so that oil may be discharged upon the first positive or inward stroke of said piston.

We have herein shown our invention in connection with one form of pump; but our invention can be applied to many different kinds of pumps operating on any kind of liquid.

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

The combination of an oil-reservoir, a pump-casing, a piston-chamber in said casing, a piston working in said chamber, an oil-passage in said casing extending across the inner mouth of said piston-chamber, an inlet and an outlet passage connecting with said transverse passage, at the lower and upper extremities thereof respectively, said inlet-passage extending backward beneath and in the general direction of said piston-chamber; a boss on said casing, a screw-threaded chamber in said boss, said chamber extending to a

point near to but not entering said inlet-passage, a perforated wall formed of and integral with said casing constituting a strainer between said inlet-passage, and said threaded chamber; a valve-seat screwing into said threaded chamber, a ball cooperating with said seat, a valve-seat formed at the outer opening of said outlet-passage, a ball cooperating therewith, an opening in said casing opposite to said piston-chamber and connecting directly with said transverse passage, said inlet and outlet passages and with said piston-chamber, to afford ready access to all of said passages; and a nut or plug screwing into said last-mentioned opening for covering the same.

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