

No. 779,689.

PATENTED JAN. 10, 1905.

J. V. CLARK & H. S. BLYNT.  
OIL PUMP.

APPLICATION FILED MAY 27, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

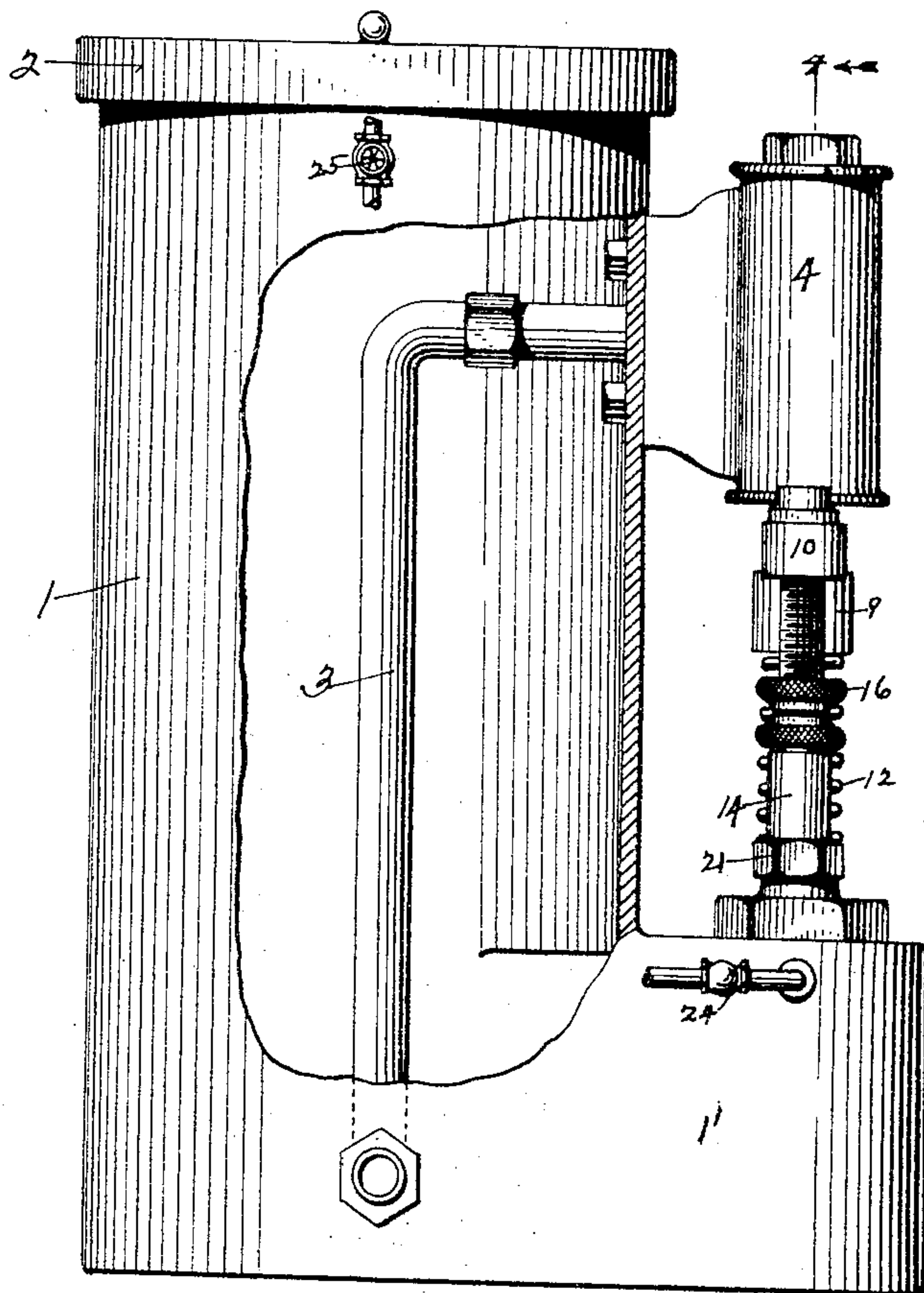
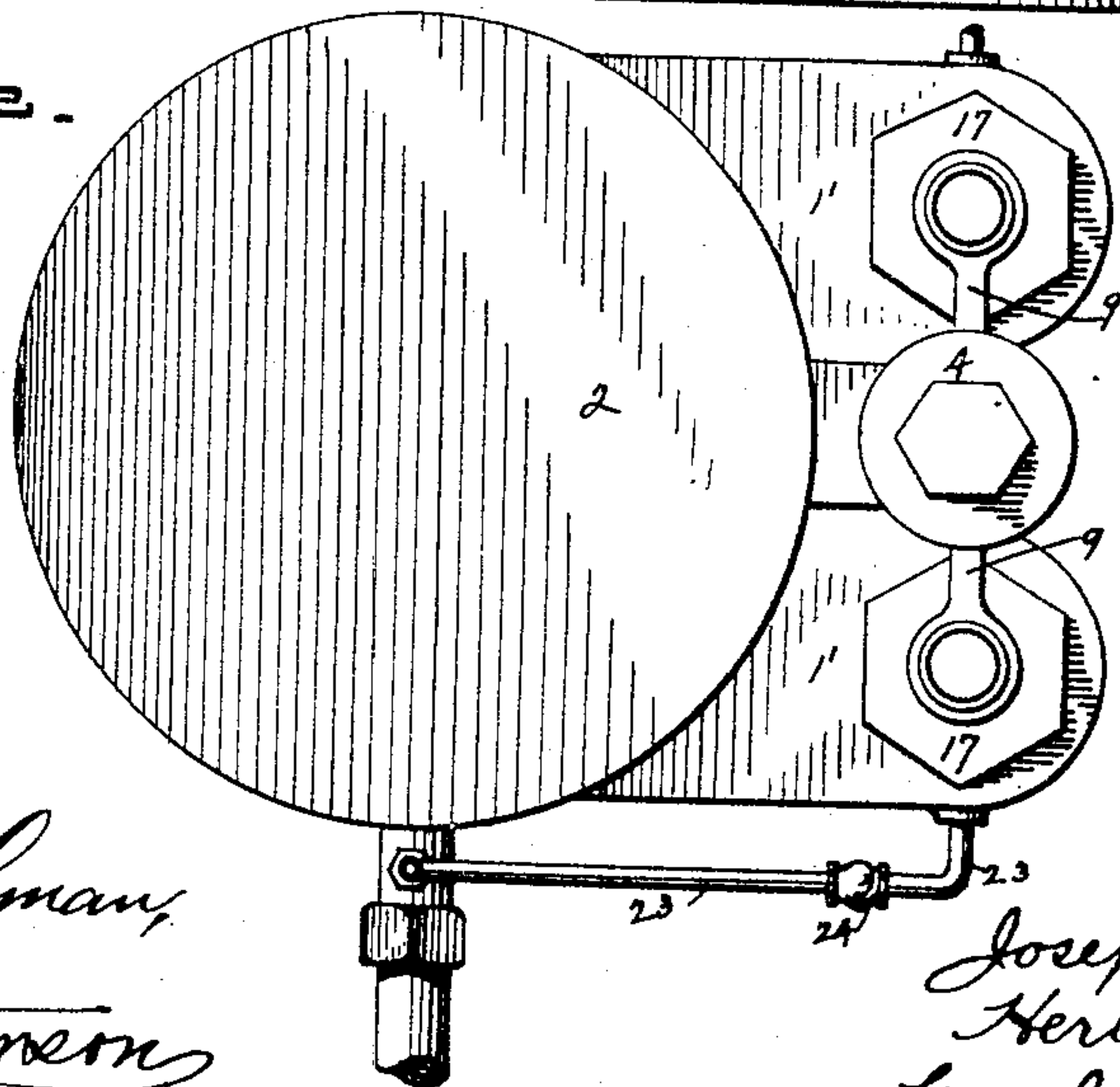


Fig. 2.



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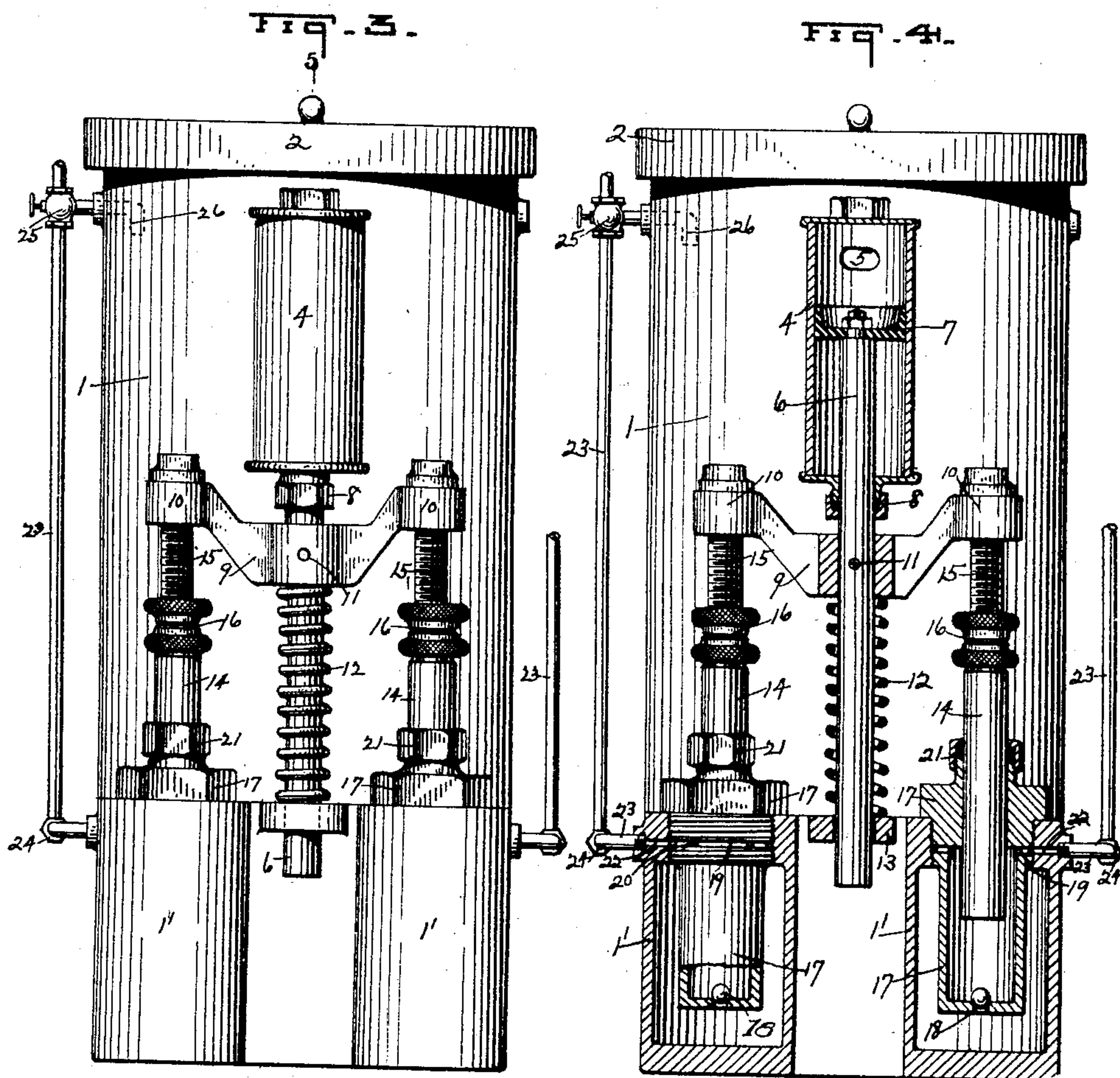
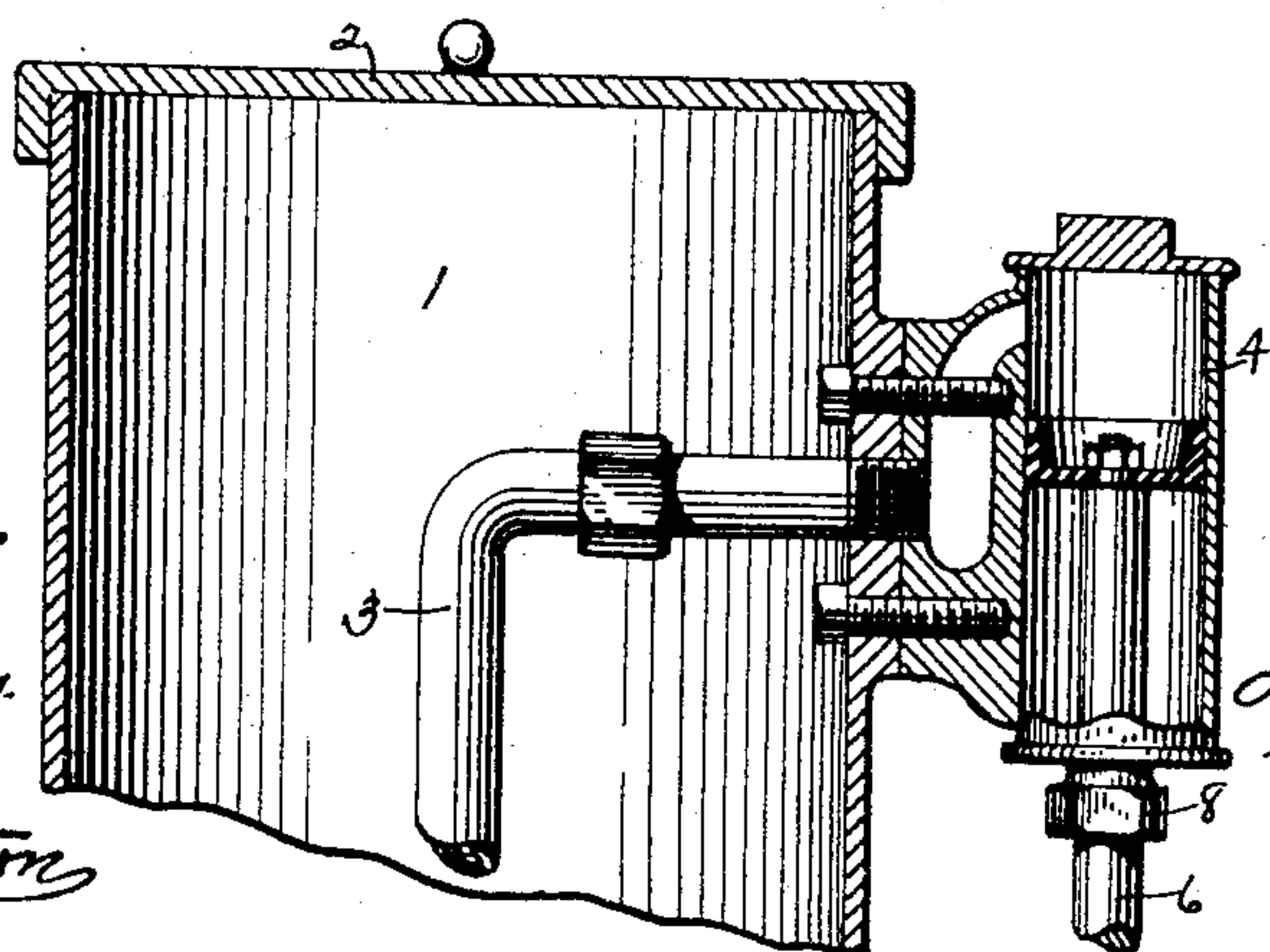


FIG. 5.



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# UNITED STATES PATENT OFFICE.

JOSEPH V. CLARK AND HERBERT S. BLYNT, OF STEUBENVILLE, OHIO.

## OIL-PUMP.

SPECIFICATION forming part of Letters Patent No. 779,689, dated January 10, 1905.

Application filed May 27, 1904. Serial No. 210,020.

*To all whom it may concern:*

Be it known that we, JOSEPH V. CLARK and HERBERT S. BLYNT, citizens of the United States, residing at Steubenville, in the county of Jefferson and State of Ohio, have invented certain new and useful Improvements in Oil-Pumps; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

Our invention relates to a new and useful improvement in a steam-actuated oil cup or pump especially designed and constructed for the purpose of preheating the oil contained in the reservoir before it is introduced into the oil-cylinders and from there forced into the supply-line and thence to any point on the engine to be lubricated.

In the accompanying drawings, in two sheets, forming a part of this specification, we have illustrated our invention by several views, in which—

Figure 1, Sheet 1, is a side view of our oil-pump having part of the oil-reservoir broken away to illustrate the means employed in preheating the oil and carrying steam to the cylinder. Fig. 2, Sheet 1, is a top plan view of our invention. Fig. 3, Sheet 2, is a front elevation of our oil-pump. Fig. 4, Sheet 2, is a similar view showing the steam and oil cylinder in section. Fig. 5, Sheet 2, is a sectional view of the steam-cylinder as attached to the upper part of the oil-reservoir, showing means of introducing steam to the same.

Numerals of reference designate like parts throughout the several views, in which the numeral 1 represents the oil-reservoir, having two foot portions 1' extending at right angles therewith, and 2 a removable lid. Entering the reservoir near the bottom is a steam-pipe 3, passing up through the middle of the reservoir on the inside and connecting with the steam-cylinder 4.

5 is a port for the admission of steam to the cylinder 4.

6 is a steam-actuated piston-rod operating in the cylinder 4 and having the head 7.

8 is a packing-nut attached to the lower end of the steam-cylinder.

9 is a cross-head having supporting ends 10 10 and secured to the piston-rod 6 by a pin 11. Between the cross-head 9 and the bridge 13 is a spring 12 of sufficient strength to raise the plungers 14 after they have been pressed down by the admission of steam to the cylinder 4. The upper ends 15 of the plungers 14 are threaded for the purpose of adjusting the nuts 16, thus lengthening or shortening the stroke of the pump.

Entering the feet 1' of the oil-reservoir are the oil-cylinders 17, each having a check-valve 18 in the bottom thereof.

19 is a groove formed around each oil-cylinder and having a plurality of ports 20 therein to permit the passage of oil to flow through while the plungers are pressing in the cylinders 17.

21 is a packing-nut secured to the top of each cylinder.

Communicating with an opening 22 in the side of the reservoir-foot 1' is a discharge-pipe 23, having a check-valve 24 located therein. This discharge-pipe, leading to the engine, passes up parallel with the side of the reservoir to a churn-valve 25, which regulates the supply of oil to the engine and returns the superfluity of oil through a pipe 26 to the reservoir.

When steam is admitted to the cylinder 4, the piston-rod 6 carries the cross-head 9 down over the threaded portion 15 of the plungers 14 until it reaches the nuts 16, when the plungers will be forced into the oil-cylinders 17. By the adjustment of these nuts 16 the stroke of the pump may be lengthened or shortened.

Our oil-pump is connected to any steam-line which has a direct passage of steam flowing to the valves of the engine. Also our feed-line will connect with any point on the engine to be lubricated. When the engine gets an admission of steam through the valves to push the piston ahead or back, the steam-cylinder on the pump will get an admission on the top through the steam-line 3 into the port 5. This



steam-pressure while in service on the engine will bring the pump into service and press the plungers 14 down into the oil-cylinders, thus forcing the oil contained therein out through the ports 20 and through the opening 22 into the feed-line or discharge-pipe 23. The check-valve 24 prevents the oil standing in the perpendicular pipe 23 from escaping back into the oil-chambers.

When the valves of the engine cut off the steam-supplies, they also cut off the steam-supply to the cylinder of the oil-pump. When they open to exhaust, the steam in the cylinder on the oil-pump will exhaust with the steam on the engine, and on this action taking place the spring 12, seated between the cross-head and the bridge 13, will raise the plungers and draw in through the check-valves 18 a full supply of oil ready for the next admission of steam to the cylinder 4, which will press the plungers down again, seating the check-valves and forcing the oil into the discharge-line, as previously stated.

One of the main features and advantages of our oil-pump is whereby we connect with the steam-line to feed our cylinder. At the same time it serves as a heating device for the oil-reservoir, thus preventing the oil from freezing or becoming too thick for use. This pre-heating feature will afford us a means of using the thickest kind of lubricants or greases, the same being reduced to a liquid or workable state and readily introduced through the discharge-line to the engine.

While our invention only calls for the introduction of steam to one end of the cylinder, it is obvious that the piston may be operated back and forth by the introduction of steam to both ends of said cylinder, thus doing away with the necessity of a spring for facilitating the return movement of the piston-rod. It is also apparent that our pump can be made triple action instead of double, as shown in the drawings, by simply adding a third oil-cylinder between the two specified, thus supplying oil to a triple-expansion engine instead of compound expansion, as intended with the pump shown in the drawings. This will in no wise depart from our original idea and intention, but will be merely carrying out our invention to meet the necessary demand for such a lubricator.

Having thus fully shown and described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In an oil lubricating-pump having an oil-reservoir, oil-chambers extending parallel to and communicating with said reservoir, a steam-cylinder attached to the outer wall of said reservoir, means for introducing steam through the reservoir to the cylinder, a piston-rod working in said steam-cylinder, and a cross-head having plunger-rods at each end thereof mounted on said piston-rod, substantially as described.

2. In an oil lubricating-pump, an oil-reservoir provided with oil-chambers therein communicating with the reservoir, a steam-cylinder attached to the outer wall of said reservoir, means for conducting steam for preheating the oil communicating with said steam-cylinder and extending through the reservoir, a piston-rod working in the steam-cylinder and cross-heads mounted thereon having plunging rods adapted to enter the oil-chamber, substantially as described.

3. In an oil lubricating-pump, an oil-reservoir, oil-cylinders mounted therein communicating with the reservoir, a steam-cylinder, means for introducing steam through the reservoir to the cylinder, a piston-rod working in said steam-cylinder, a cross-head mounted on the piston-rod, plunger-rods carried by the cross-head having threaded portions thereon working through the ends of the cross-head and means mounted on the threaded portions of each of said plunging rods for regulating the length of the stroke of the pump; substantially as described.

4. In an oil lubricating-pump, an oil-reservoir, a pair of oil-cylinders mounted therein and communicating therewith, a steam-cylinder, means for introducing steam through the reservoir to the steam-cylinder, a piston-rod working in said steam-cylinder, a cross-head carried on said rod, plunging rods mounted on the cross-head provided with threaded portions working through the ends of the cross-head, means mounted on the threaded portions of each of the plunging rods whereby the length of the stroke may be regulated, and a spring seated around said piston-rod engaging the cross-head and bridge portion between the oil-cylinders, substantially as described.

5. In an oil lubricating-pump, an oil-reservoir, oil-cylinders communicating with the reservoir, a steam-cylinder attached to the outer wall of the reservoir, means of introducing steam through the reservoir to the steam-cylinder, a piston-rod working in said steam-cylinder, a cross-head mounted on the rod, plunging rods mounted in the cross-head provided with threaded portions extending through the cross-head, nuts mounted on said threaded portions whereby the stroke of the pump may be lengthened or shortened, a spring seated around said piston-rod in engagement with the cross-head and bridge portion between the oil-cylinders, said oil-cylinders being adapted to receive the ends of the plunging rods and check-valves seated in the bottom of said oil-cylinders, substantially as described.

6. In an oil lubricating-pump, an oil-reservoir, oil-cylinders in communication with the same, a steam-cylinder attached to the outer wall of the reservoir, means for introducing steam to the same, a piston-rod working in said steam-cylinder, a cross-head mounted on



the piston-rod, a spring surrounding said piston-rod engaging the cross-head and bridge portion between the oil-cylinders, plunging rods mounted in the cross-head each having a threaded portion working through said cross-head and the lower ends of said rods being adapted to enter the said cylinders, check-valves seated in the bottom of said cylinders, said oil-cylinders each having an annular groove formed around the same having a plurality of ports therein adapted to register with the opening in the side of the oil-reservoir and a discharge-pipe leading from said opening, substantially as described.

7. In an oil lubricating-pump, an oil-reservoir having an extension thereon, oil-cylinders mounted in said extension and communicating with the reservoir, said oil-cylinders each having an annular groove formed therein and provided with a plurality of ports, said groove being adapted to register with an opening in the side of the extension of the reservoir, a steam-cylinder, a piston-rod therein, a cross-head mounted on the piston-rod, plunging rods mounted at each end of the cross-head adapted to work within the oil-cylinders and each provided with a threaded portion working through the ends of the cross-head, means mounted on the threaded portion of each plunging rod for regulating the length

of the stroke of the pump, a spring seated around said piston-rod in engagement with the cross-head and the bridge portion between the cylinders, check-valves seated in the bottom of each of said oil-cylinders, a discharge-pipe leading from an opening in the extension of the reservoir, a check-valve located in said discharge-pipe, and a churn-valve in said discharge-pipe near the top of the reservoir having a pipe leading therefrom into said oil-reservoir, substantially as described.

8. In an oil lubricating-pump, a reservoir, oil-cylinders in communication therewith, a steam-cylinder, means for conducting steam for preheating the oil passing through said reservoir and communicating with the steam-cylinder, a piston-rod working in said steam-cylinder, having a cross-head thereon, plunging rods mounted at each end of the cross-head adapted to work in said oil-cylinders, and means carried on each of the plunging rods for regulating the length of the stroke of the pump, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

JOSEPH V. CLARK.  
HERBERT S. BLYNT.

Witnesses:

HALLIE ABRAMS,  
HUGH P. MCGOWAN.