

(No Model.)

C. HIRSCH.

OIL PUMP.

No. 354,419.

Patented Dec. 14, 1886.

Fig. 1.

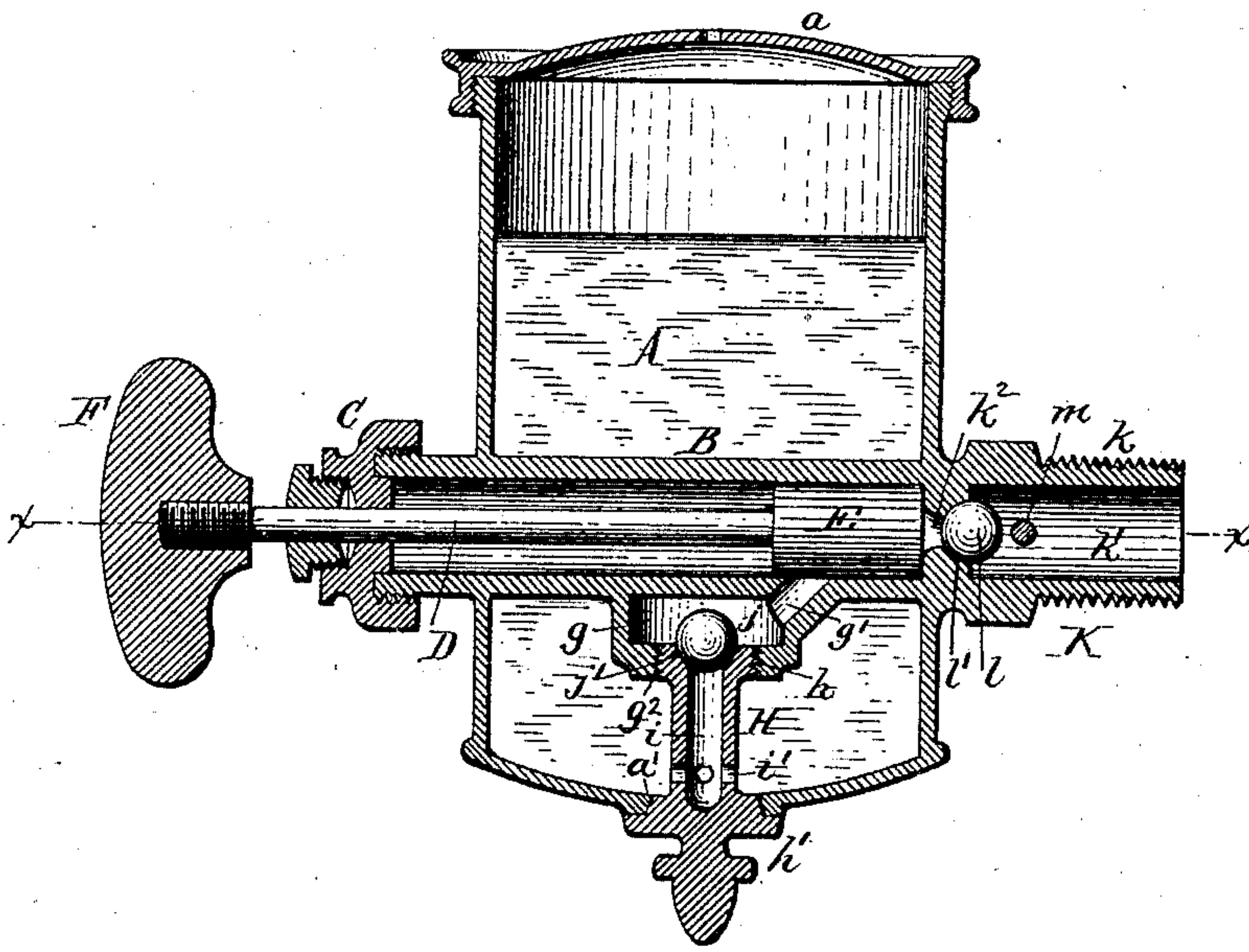
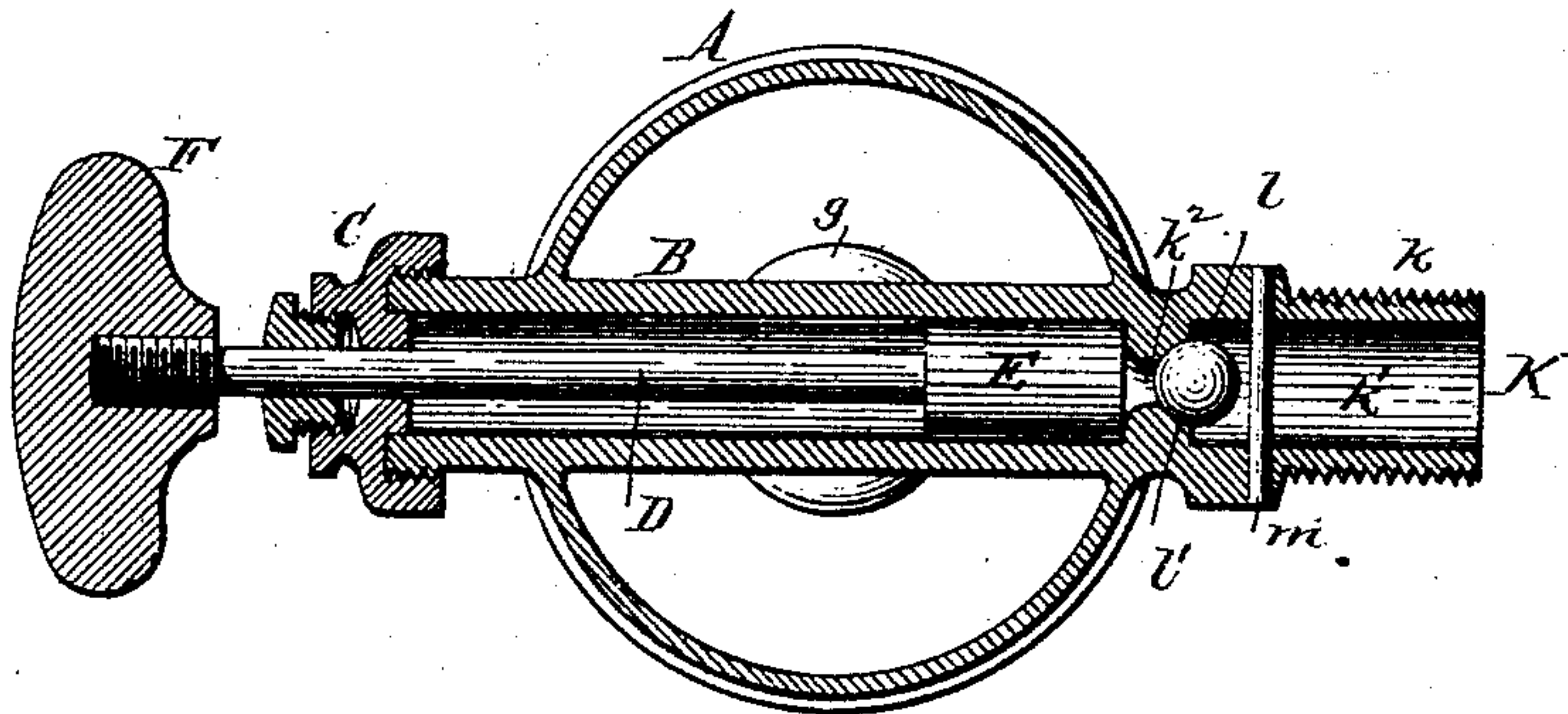


Fig. 2.



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OIL-PUMP.

SPECIFICATION forming part of Letters Patent No. 354,419, dated December 14, 1886.

Application filed August 25, 1886. Serial No. 211,821. (No model.)

To all whom it may concern:

Be it known that I, CHARLES HIRSCH, of the city of Buffalo, in the county of Erie and State of New York, have invented new and useful
5 Improvements in Oil-Pumps, of which the following is a specification.

This invention relates more particularly to that class of oil-pumps which are employed in connection with steam-engines for injecting
10 the lubricant into the space to be lubricated against the pressure of the steam contained in such space.

The object of my invention is the construction of a simple and efficient pump of this
15 kind; and my invention consists of the improvements in the construction of the pump, as will be hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is
20 a vertical longitudinal section of my improved oil-pump. Fig. 2 is a horizontal section in line $x x$, Fig. 1.

Like letters of reference refer to like parts in both figures.

25 A represents the oil-reservoir, provided with the usual cover, a , and B is the horizontal pump-cylinder arranged centrally in the reservoir A and extending through one side of the reservoir.

30 C is the stuffing-box formed at the outer end of the pump-cylinder, and D is the piston-rod, which is guided in the stuffing-box C.

E represents the piston formed at or attached to the inner end of the piston-rod D and working in the cylinder B, and F is a knob or handle
35 secured to the outer end of the piston-rod D.

g represents a chamber formed on the under side of the pump-cylinder B and communicating therewith by a passage, g' . The chamber
40 g is arranged in line with the center of the oil-reservoir, and is formed with an opening, g^2 , in its bottom. The oil-reservoir A is provided in its bottom with an opening, a' , which is arranged directly below the opening g^2 in the
45 chamber g .

H represents a plug or stem which is inserted through the opening a in the bottom of the oil-reservoir and secured to the under side of the chamber g by a screw-thread, h , formed on the
50 inner end of the stem and engaging with an internal screw-thread formed in the opening g^2 .

The stem H is provided with a cap, h' , which closes the opening a' in the bottom of the reservoir A. A suitable packing is preferably interposed between the cap h' and the bottom of
55 the reservoir to form a tight joint.

i represents an oil-passage formed in the stem H and opening into the chamber g . The oil-passage i communicates with the oil-reservoir A through openings i' , formed in the stem H
60 near the bottom of the reservoir A.

j represents a ball-valve arranged in the chamber g and resting upon a seat, j' , formed in the top of the stem H around the passage i and closing the communication between the
65 passage i and the chamber g .

K represents a horizontal shank formed in the outer side of the oil-reservoir and arranged in line with the pump-cylinder B, and provided with a screw-thread, k , whereby the pump
70 is attached to the steam-cylinder or other part to be lubricated. The shank K is cast hollow, forming a chamber, k' , which communicates with the pump-cylinder through an opening, k^2 .

l represents a ball-valve arranged in the
75 chamber k' and resting against a seat, l' , formed around the opening k^2 , whereby the communication between the pump-cylinder and the chamber k' is closed. The chamber k' opens into the steam-cylinder or other space to be lu-
80 bricated, and the pressure of the steam therein retains the valve l against the seat and closes the opening k^2 .

When the piston E has been moved forward against the opening k^2 , the passage g' is closed
85 by the piston, and no oil can escape from the chamber g into the pump-cylinder. When the piston has been retracted to the outer end of the cylinder, this movement of the piston causes the valve j to rise from its seat, and per-
90 mits the oil to escape from the reservoir A through the passages i and g' into the pump-cylinder. Upon the return or forward movement of the piston, the valve j drops back to its seat, closing the passage i , and the valve l
95 is forced away from its seat by the forward movement of the piston. The oil which has entered the cylinder is thereby prevented from flowing back into the reservoir, but is expelled through the opening k^2 into the chamber k' ,
100 where it finds its escape to the steam-space to be lubricated. The valve l is prevented from

dropping out of the chamber *k'*, when the pump is removed from the steam-cylinder, by a pin, *m*.

The reservoir A, pump-cylinder B, chamber *g*, and shank K are all cast in one piece, and the stem H can be readily inserted in place through the opening in the bottom of the reservoir, whereby the construction of the pump is greatly simplified and the pump rendered more compact and convenient for use.

10 I claim as my invention—

1. The combination, with the oil-reservoir A and pump-cylinder B, of the chamber *g*, arranged below the pump-cylinder and communicating therewith by a passage, *g'*, a stem, H, arranged below the chamber *g* and provided with the oil-passages *i i'*, forming a communication between the chamber *g* and the bottom of the oil-reservoir, and a valve, *j*, arranged in the chamber *g*, substantially as set forth.

2. The combination, with the oil-reservoir A 20 and pump-cylinder B, of the chamber *g*, formed on the under side of the pump-cylinder and communicating therewith by a passage, *g'*, a stem, H, arranged below the chamber *g* and provided with oil-passages *i i'*, forming a com- 25 munication between the chamber *g* and reservoir A, a valve, *j*, arranged in the chamber *g*, and a shank, K, opening into the end of the pump-cylinder and provided with a valve, *l*, substantially as set forth. 30

Witness my hand this 18th day of August, 1886.

CHARLES HIRSCH.

Witnesses:

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