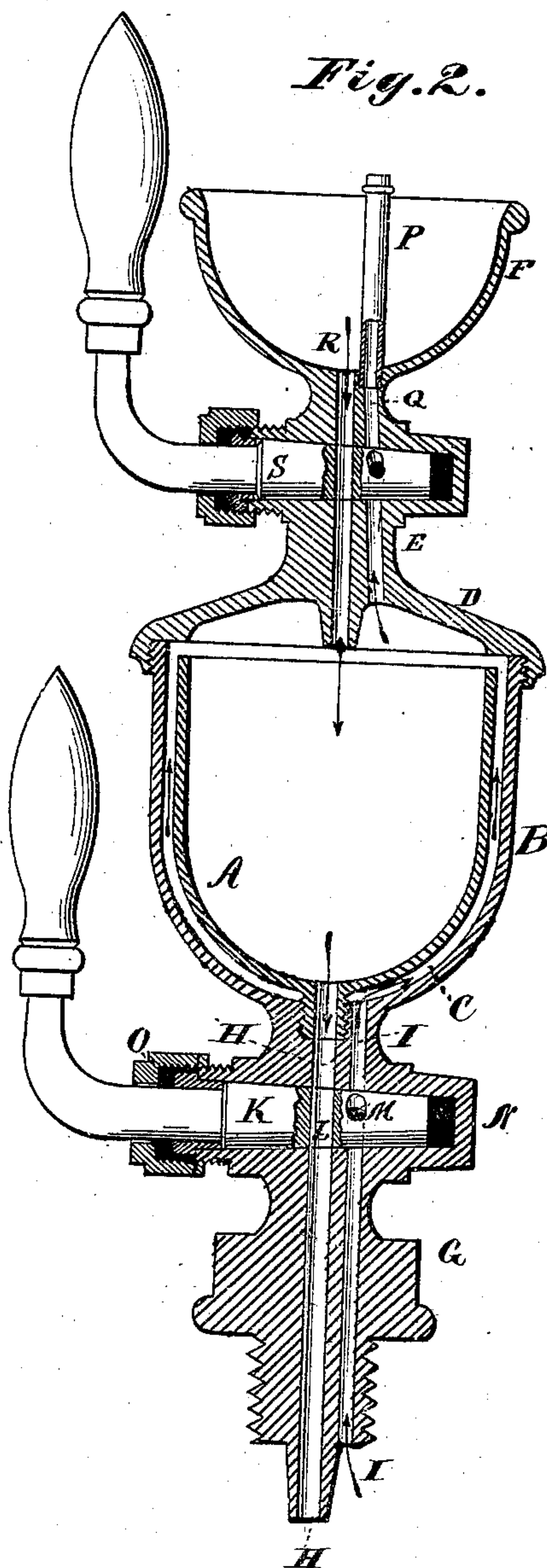
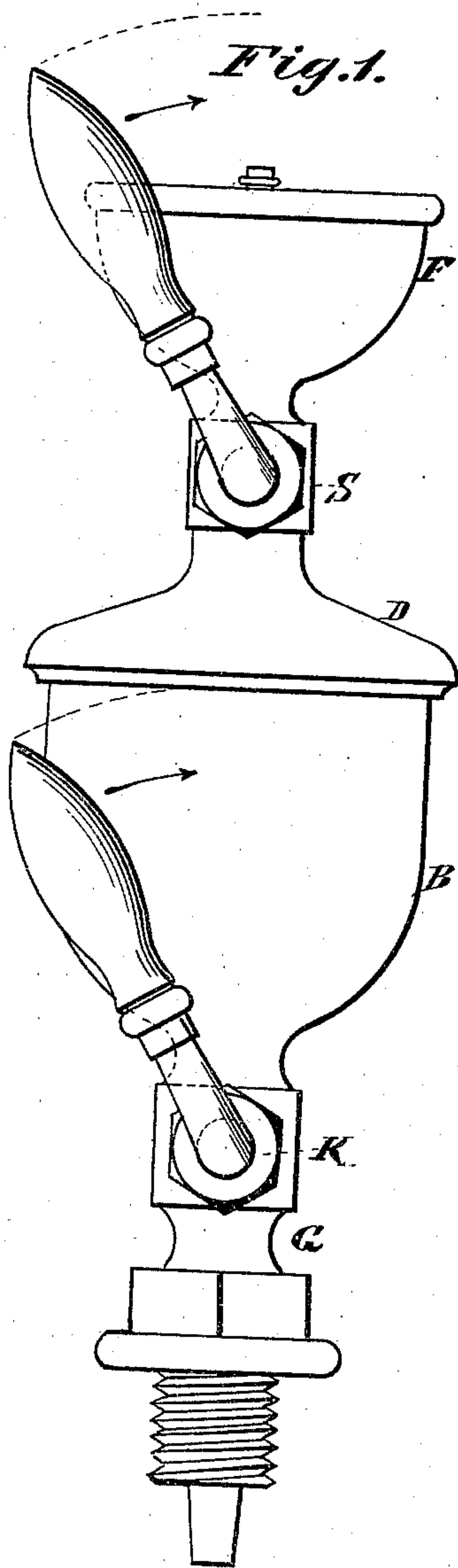


A. T. BALLANTINE.

Oil-Cups.

No. 143,216.

Patented September 30, 1873.



Witnesses.  
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Wm. J. Peyton

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Atty.



# UNITED STATES PATENT OFFICE.

ALEXANDER T. BALLANTINE, OF TITUSVILLE, PENNSYLVANIA.

## IMPROVEMENT IN OIL-CUPS.

Specification forming part of Letters Patent No. 143,216, dated September 30, 1873; application filed May 31, 1873.

*To all whom it may concern:*

Be it known that I, ALEXANDER T. BALLANTINE, of Titusville, in the county of Crawford and State of Pennsylvania, have invented certain new and useful Improvements in Oil-Cups, of which the following is a specification:

This invention relates to that class of lubricators which are employed for introducing oil, tallow, and similar lubricants into the steam chest or cylinder of an engine. This invention consists, first, in the arrangement, in respect to the feeding-cup of the lubricator, of a vertical tube, which communicates with the interior of the oil cup or reservoir, for enabling the steam-pressure and air within the same to escape upon the proper manipulation of a cock, without causing a commotion of the oil in said filling-cup. The invention also consists in the arrangement, in respect to the filling-cup or open basin, of two channels or ducts, designed, respectively, for feeding the lubricant to the reservoir, and for permitting the escape of the steam-pressure from the latter through an open tube extending through the feeding-cup, said channels being combined with a two-way cock, the ports of which are adapted to register successively for effecting, first, the discharge of the steam-pressure, and then a flow of lubricant for replenishing the oil-reservoir. The invention further consists in the combination, with the feeding-cup, oil and steam channels, and two-way cock, of an oil reservoir or cup, which is provided with a surrounding space, into which steam is admitted by the opening of a two-way cock, causing it to melt the lubricant, and also to exert the proper pressure upon the surface of the same, in order to insure its flow when the cock is turned in the proper direction.

In the accompanying drawing, Figure 1 is a side elevation of a lubricator constructed according to my invention. Fig. 2 is a vertical section of the same.

A is the oil-reservoir proper or cup-shaped vessel, which is arranged in concentric relation to an outer shell, B, so as to form a space, C, as shown in Fig. 2. To the shell B is applied a screw cap or cover, D, provided with a neck, E, and surmounted by a cup or open basin, F, into which the lubricant is placed

preparatory to its passage into the reservoir A. The shell B is formed with or separately attached to a neck, G, the lower screw-threaded end of which is fitted into the steam-chest or cylinder, and to the upper end of which is secured the oil reservoir or globe by means of a short screw threaded shank. H is a vertical passage, extending through the neck G, and terminating in proper relation to the discharge-orifice in the oil-cup, and I is a second passage of a smaller diameter, which communicates with the space C between the reservoir and surrounding shell. K is a plug-valve or cock, extending transversely into the neck G, and provided with two openings, L M, arranged in proper relation to the passages H I, and at different angles in respect to each other. One end of said cock K is inserted into a chambered enlargement, N, of the neck G, which contains a suitable packing material, and the other end or handle termination is made steam and liquid tight by a packing-gland and screw-cap, O. The filling cup or basin F is provided with an open tube, P, the lower end of which is screwed into a passage, Q, in the neck E, and a similar passage, R, serves to form the communication with the oil-reservoir. A cock or plug-valve, S, arranged and constructed in the same manner as the cock K, extends through the neck E, and the openings in the same are arranged in the same manner as the two passages Q R.

The operation of the lubricator is as follows: When the handles of the cocks are arranged at right angles to the oil-cup all communication with the steam-chest is shut off, and by turning the lower cock one-eighth of a revolution, more or less, the steam-passage I is opened, thus permitting the steam to pass from the steam-chest into the space between the oil-cup and surrounding shell, from whence it enters the oil-reservoir, and exerts the desired pressure upon the lubricant, bringing it also to the proper consistency for insuring a ready flow.

After the steam has been admitted in this manner the cock is turned open to its full extent, thus opening the oil-passage for permitting the oil to flow by its own gravity, as the pressure of the steam in the reservoir is equal to that in the cylinder. The upper cock be-



low the filling-cup is in a closed position when the steam-pressure is in the reservoir, and the lubricant is being fed to the steam-chest, and will, therefore, not permit the escape of either oil or steam.

By turning the upper cock to the same extent as the lower one in opening the lower steam-passage, the upper steam-passage is opened for permitting the steam and air contained in the oil-reservoir to escape, and this is effected without causing the oil in the filling-cup to be displaced by the steam, as the latter passes through the discharge-tube which extends above the cup.

After the steam-pressure has been removed the upper cock is turned to its full extent, thus opening the oil passage or port for replenishing the reservoir. The cock is then closed, and the movement of the lower cock continued, as heretofore described.

A decided advantage offered by the use of my cup is the fact that it is possible to blow a jet of live steam into the space surrounding the oil-reservoir for cleaning the steam-ports without disturbing the oil in the reservoir.

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

1. In an oil-cup or lubricator, a steam-discharge tube, P, arranged in relation to the filling-cup substantially as and for the purpose specified.

2. In an oil-cup or lubricator, the combination of the filling-cup F, steam and oil passages Q R, and two-way cock S, and the discharge-tube P, substantially as and for the purpose specified.

3. The steam-space C, oil-reservoir A, oil and steam passages H L, and two-way cock K, in combination with the steam and oil passages Q R, two-way cock S, and filling-cup F, with the discharge-tube P, substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand.

A. T. BALLANTINE.

Witnesses:

W. H. YOWLER,  
SAMUEL GRUMBINE.