

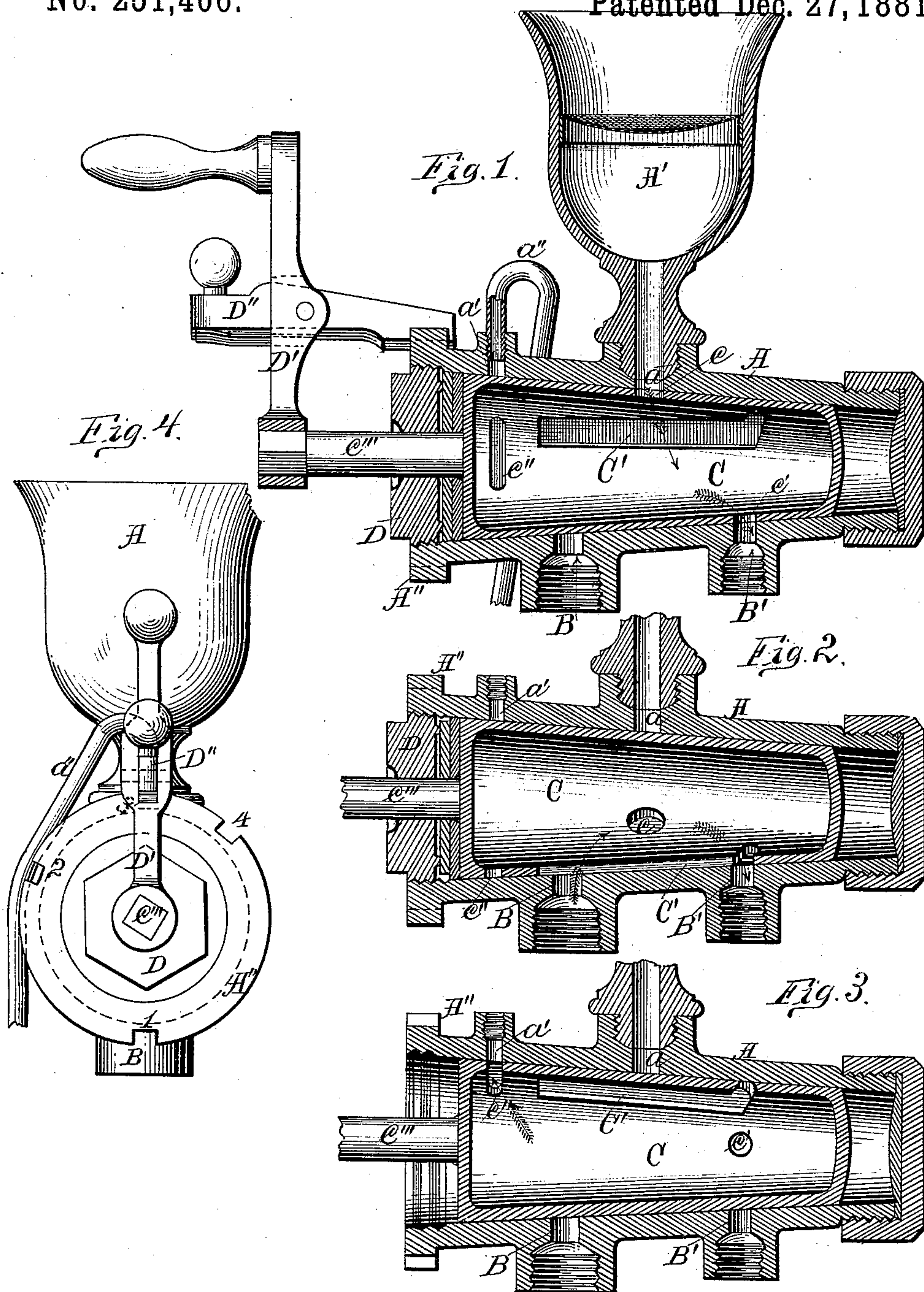
(No Model.)

A. O. BROOKS & P. A. BOWEN.

OILER FOR LOCOMOTIVES.

No. 251,406.

Patented Dec. 27, 1881.



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UNITED STATES PATENT OFFICE.

ALVA O. BROOKS AND PHILIP A. BOWEN, OF MILWAUKEE, WISCONSIN.

OILER FOR LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 251,406, dated December 27, 1881.

Application filed October 1, 1881. (No model.)

To all whom it may concern:

Be it known that we, ALVA O. BROOKS and PHILIP A. BOWEN, both of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Oilers for Locomotives, &c.; and we do hereby declare that the following is a full, clear, and exact description thereof.

Our invention relates to lubricators or oilers for steam-engines, and is particularly applicable to locomotives.

Our invention consists in a device by which the valves may be oiled when the steam is on, as will hereinafter be fully described.

In the drawings, Figure 1 is a vertical longitudinal section of our device, with the oil-cylinder in position to feed the oil to the steam-chest when the steam is "off." Fig. 2 is a like view, with the cylinder in position for oiling when steam is "on." Fig. 3 is a like view when all the ports except the vent are closed, and Fig. 4 is an end view.

A is an oil-cock, which has on its upper side an opening, *a*, screw-threaded to receive the stem of the oil-cup *A'*, and another opening, *a'*, to receive a vent-pipe, *a''*, and on its under side it has openings *B B'*, re-enforced and screw-threaded to receive respectively a steam-pipe connecting with the boiler and a pipe to carry oil to the steam-chest.

C is the oil-cylinder, made slightly tapering to fit into the oil-cock A, and provided with a slot, *C'*, extending from the longitudinal center of the cylinder far enough on each side to reach beyond the steam and oil ports *B B'* on the lower side of the cock. This slot terminates at its point nearest the oil-outlet in an oblique continuation, which permits it to open to the oil-outlet, so that the oil may "get its lead" before the steam is admitted to drive it out. Just in line with the center of the slot *C'*, and in the longitudinal center of the oil-cylinder, we provide an opening, *c*, which admits the oil from the cup to the cylinder, and on the opposite side of the cylinder we provide an exit-opening, *c'*, which, when the opening *c* coincides with the opening *a* in the oil-cock, will itself coincide with outlet-opening *B'*, while all the other openings will be closed, as shown in Fig. 1. A transverse slot, *c''*, is also made in the cylinder, that, when all the other ports

are closed, opens to the escape-port *a'*. The stem *c'''* of the cylinder C, after passing through suitable bushing, D, receives a crank-arm, *D'*, that carries a spring-latch, *D''*, that engages in notches 1 2 3 4 in the head *A''* of the oil-cock and holds the cylinder C in its various positions.

Operation: Our device, while it may be applied successfully to stationary engines, is particularly useful on locomotives, and on the latter will occupy the position ordinarily given to the oil-cup, and is connected, just as the oilers now in use are, with the steam-chest. Now, when the steam is off and oiling is necessary, the handle *D'* is turned so as to carry the cylinder C into the position shown in Fig. 1, when the oil from cup *A'* will pass through the cylinder C and out into the oil-pipe through port *B'*, and thence to steam-chest; but should the steam be on, then the handle is turned until the slot *C'* passes around to the exit-ports, the oblique termination opening to port and passing beyond it, as shown in Fig. 2, until the slot *C'* is gradually opened to both lower ports, and the steam rushing into the cylinder through port B, that leads from the boiler, mixes with and carries the oil out through port *B'* of the steam-chest. Now, if the cylinder be further revolved it will carry the slot *c''* beneath the vent-port *a'* and permit the vapor to escape into vent-pipe *a''*.

It will be perceived that as the live steam enters directly in upon the oil and carries it out into the steam-chest against the pressure of the dead steam therein, the steam will drive and carry the oil into every part of the steam-chest, while if the oil alone were forced into the steam-chest by a piston, as in patent to N. Seibert, September 14, 1869, No. 94,780, the pressure would carry the oil to the steam-chest, but would not be of a nature to distribute it after it got there, and, besides, if pure oil were forced into the steam-chest it would require a greater consumption of oil than where oil and steam mixed are used, as the steam atomizes the oil and aids it in its action. By our device we claim to be able to keep the steam-chest thoroughly lubricated, whether steam is on or off, and to effect a saving of fifty per cent. in oil.

The advantages above cited also exist over

the devices described and claimed in patents to Seibert, Nos. 111,881, February 14, 1871, and 179,226, January 27, 1876, as in these devices the oil is merely conveyed to the steam-
5 chest, but is not distributed after its entrance.

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

1. In combination with the cock having ports *a a'* above and ports *B B'* below, the cylinder
10 having ports *c c'* and slots *C'* and *c''*, substantially as set forth.

2. The cylinder *C*, having stem *c'''* and handle *D'*, in combination with spring-catch *D''* and the notched head of the cock, as set forth.

15 3. In an oiling device, a receptacle for the oil from the cup, having an outlet leading to the steam-chest, and a port connecting with a steam-

pipe leading from the boiler, whereby live steam may be admitted to the oil-receptacle to mix with and carry its contents out into the steam-
20 chest, as set forth.

4. The process of oiling a steam-chest from an oil cock or receptacle by admitting steam directly from the boiler to the oil-receptacle, and conducting the live steam and oil mixed
25 into the steam-chest, as set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 15th day of September, 1881.

ALVA O. BROOKS.
PHILIP A. BOWEN.

Witnesses:

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