

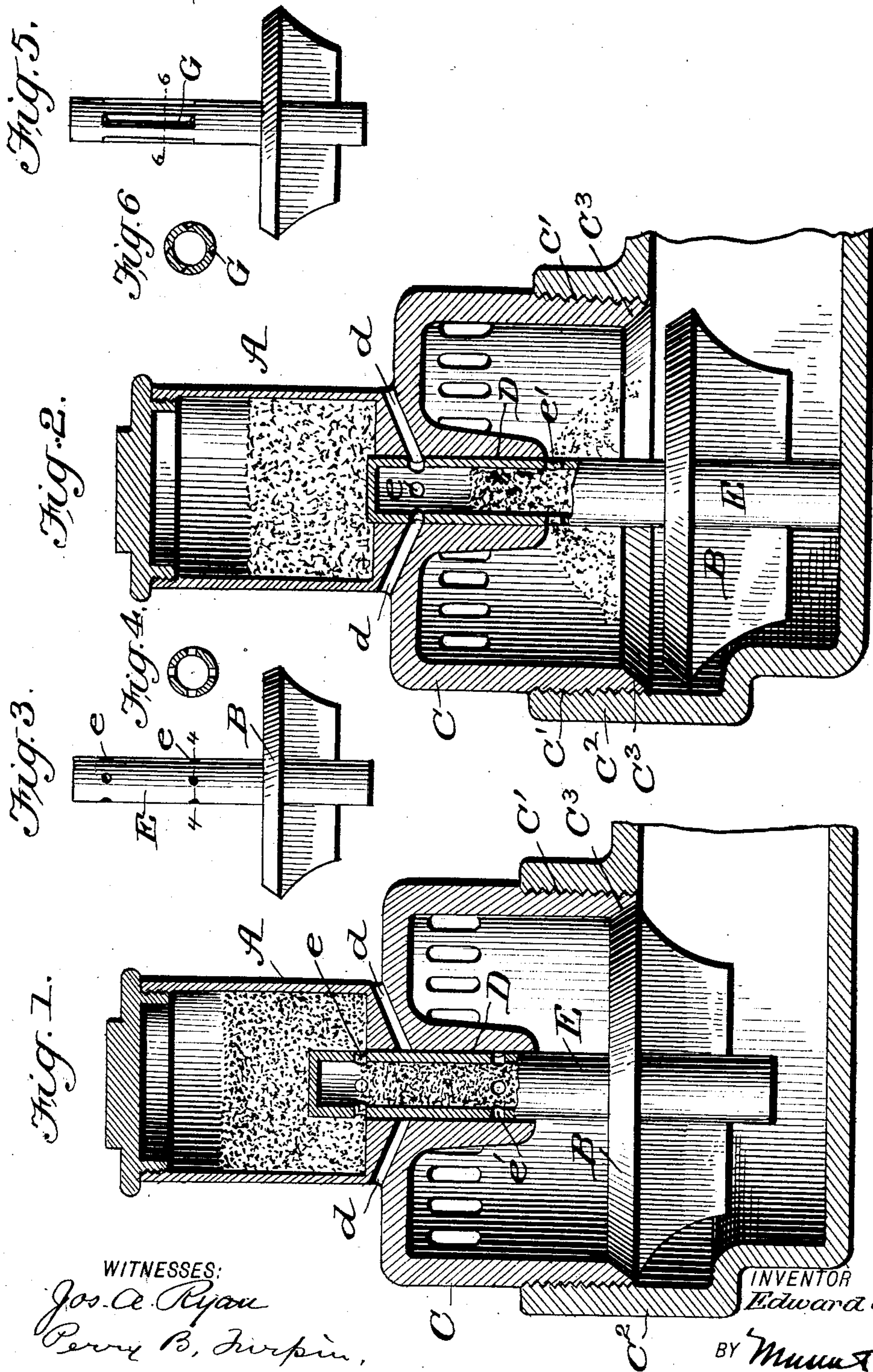
No. 771,711.

PATENTED OCT. 4, 1904.

E. CLARK.
LUBRICATOR.

APPLICATION FILED OCT. 26, 1903.

NO MODEL.



WITNESSES:

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LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 771,711, dated October 4, 1904.

Application filed October 26, 1903. Serial No. 178,524. (No model.)

To all whom it may concern:

Be it known that I, EDWARD CLARK, a citizen of the United States, residing at Winslow, in the county of Navajo and Territory of Arizona, have made certain new and useful Improvements in Lubricators, of which the following is a specification.

My invention is an improvement in lubricators especially designed for use in connection with the relief-valve of a locomotive steam-chest for the purpose of feeding graphite or other lubricant into the valves or cylinders of the locomotive while the latter is drifting with the steam shut off; and the invention consists in certain novel constructions and combinations of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a sectional view of a portion of a steam-chest of a locomotive with the relief-valve seated as when steam is on. Fig. 2 is a similar view with the valve dropped as when drifting. Fig. 3 is a detail side view of the valve with the feeder-tube. Fig. 4 is a cross-section on line 4 4 of Fig. 3. Fig. 5 is a detail side elevation of a valve and feeder of a somewhat different form from that shown in Figs. 1, 2, and 3; and Fig. 6 is a cross-section on line 6 6 of Fig. 5.

As before suggested, my invention is especially designed for the feeding of dry graphite into the valves and cylinders of a locomotive when the steam is shut off and the engine is drifting.

In the construction shown I employ a cup A for the lubricant, which cup is mounted on the casing for the relief-valve B, such casing being suitably connected with the locomotive-cylinder, as will be understood by those skilled in the art. In the construction shown the casing C, on which the cup A is mounted, is integral with the said cup, is threaded at C' into the lower section C² of the casing, and is formed at its lower end at C³ to provide a valve-seat for the valve B. The casing C has a tubular portion D, which projects from above into the casing and communicates at its upper end with the interior of the cup A and at its lower end with the interior of the casing-section C above the valve-seat C³. The casing is also provided with vents

d, leading at their outer ends to the air and at their inner ends to the interior of the bore D, in which operates the tubular feeder E for the graphite. This feeder E is preferably connected with and carried by the valve B, being in the construction shown integral with the said valve and projecting upwardly therefrom and operating in the tubular bore D and projecting in the position shown in Fig. 1 into the cup A. This tubular feeder has the inlet-openings e near its upper end, which latter is closed and is provided with the discharge-openings e' below such inlet-openings and so arranged that when the valve is lowered to the position shown in Fig. 2 the discharge-openings will be exposed, so the graphite in the tubular feeder may pass out into the casing and thence to the cylinder, as will be understood from Fig. 2. In this position of the parts the inlet-openings e register with the vents d, so the air may pass into the upper portion of the feeder and permit the graphite to discharge, as indicated in Fig. 2.

When the valve is closed, as shown in Fig. 1, the inlet-openings e are carried up to a position within the casing A, so the feeder-tube will be filled with the graphite. Then when the feeder-tube lowers to the position shown in Fig. 2 the graphite will discharge through the openings e', and the further supply of graphite to the feeder will be shut off until when the valve is again closed, all of which will be understood from comparison of Figs. 1 and 2. In Figs. 5 and 6 I show a somewhat different construction. In this construction the feeder, which also constitutes the valve-stem, as in Figs. 1 and 2, is grooved longitudinally at G, the grooves being of such length that when the valve is closed, as shown in Fig. 1, they may fill with the graphite from the cup A and when the valve is lowered the graphite within the grooves will pass into the casing and thence to the valves and cylinders, as desired.

In operation, the cup being filled with graphite or similar lubricant and steam being applied, the valve will assume a position, as shown in Fig. 1, with its top ports or inlets in communication with the contents of the cup, and

the hollow stem or feeder will be filled with the graphite by vibration and gravitation. When steam is shut off, the valve will drop to the position shown in Fig. 2, cutting off the
 5 top ports from a further supply from the cup and establishing communication between said ports and the air-vents *d*. The lower or discharge ports will be uncovered, and air from the vents entering openings *e* in the feeder
 10 will permit the graphite to drop through the discharge-openings *e'* into the casing.

As shown, I employ four openings or four grooves in the valve stem or feeder; but manifestly these may be varied in number, if desired.
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It will be noticed that the feeder operates directly in connection with the lubricant in the cup as distinguished from being inclosed in a tube in the cup.

20 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a lubricator the combination substantially as herein described, of the casing having a lower section, another section threaded into the lower section, and having its lower end formed to provide a valve-seat and provided with the lubricant-cup, with the tubular drop portion extending thence into the upper
 25 section of the casing, and with the air-vents communicating with such bore between its upper and lower ends, the valve having an upwardly-projecting tubular stem or feeder closed at its upper end and provided near such
 30 end with inlet-ports movable in the seated position of the valve into register with the interior of the lubricant-cup, and in the open position of the valve into register with the air-vents, said feeder having below its inlet-open-
 35 ings discharge-openings which register with the interior of the casing in the open position
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of the valve, and are closed within the tubular portion of the casing when the valve is seated, substantially as set forth.

2. The combination with the casing, and the lubricant-cup, of the tubular portion depending within the casing for the feeder-stem, and the valve having a tubular feeder-stem operating in the tubular portion and provided with a bore forming a passage for the lubricant,
 45 50 substantially as set forth.

3. The combination of the casing having upper and lower sections, the upper section having a valve-seat and provided with the depending tubular portion forming a guide for
 55 the valve stem or feeder, the cup on the casing, venting-ports being provided leading from the air to the interior of the tubular portion, and such tubular portion opening at its upper end into the lubricant-cup and at its
 60 lower end into the casing and the valve having a feeder-stem adapted to receive lubricant from the cup and to discharge same to the casing and to be vented by the air-vents, substantially as set forth.
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4. As a means for feeding graphite or lubricant to the valves or cylinders of locomotives while drifting, a relief-valve having a tubular feeder-stem provided with a passage for the lubricant and with feed and discharge
 70 openings therein, substantially as set forth.

5. The combination of the casing, the lubricant-cup, and the relief-valve operating in the casing, and having a stem forming a feeder by which to deliver the lubricant from the
 75 lubricant-cup to the casing, the stem being tubular and having feed and discharge openings, substantially as set forth.

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Witnesses:

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