

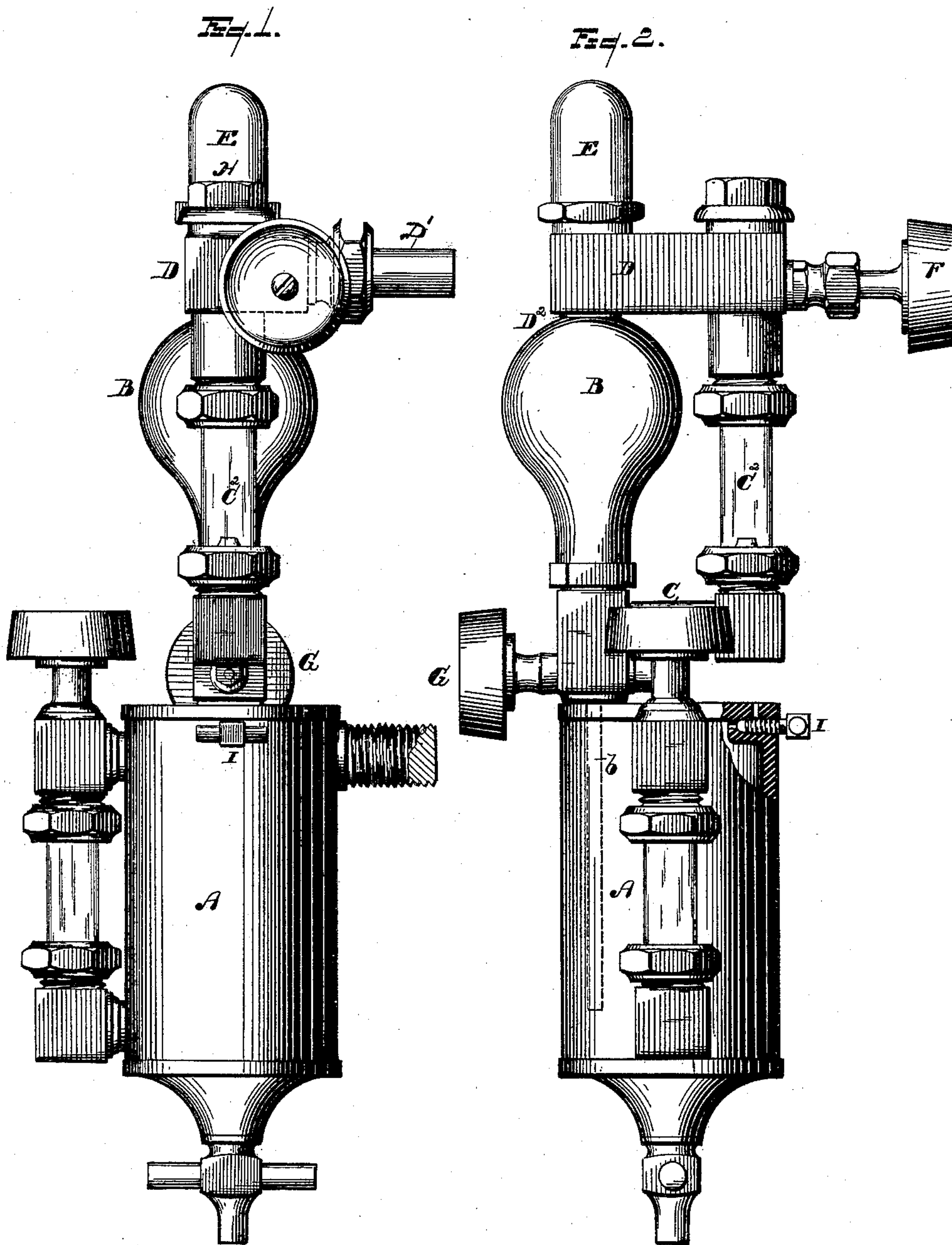
(No Model.)

2 Sheets—Sheet 1.

C. H. PARSHALL, Sr.
LUBRICATOR.

No. 408,318.

Patented Aug. 6, 1889.



WITNESSES

Samuel C. Thomas,
W. H. Chamberlin.

INVENTOR

Charles H. Parshall Sr.
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Attorney

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2 Sheets—Sheet 2.

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Fig. 3.

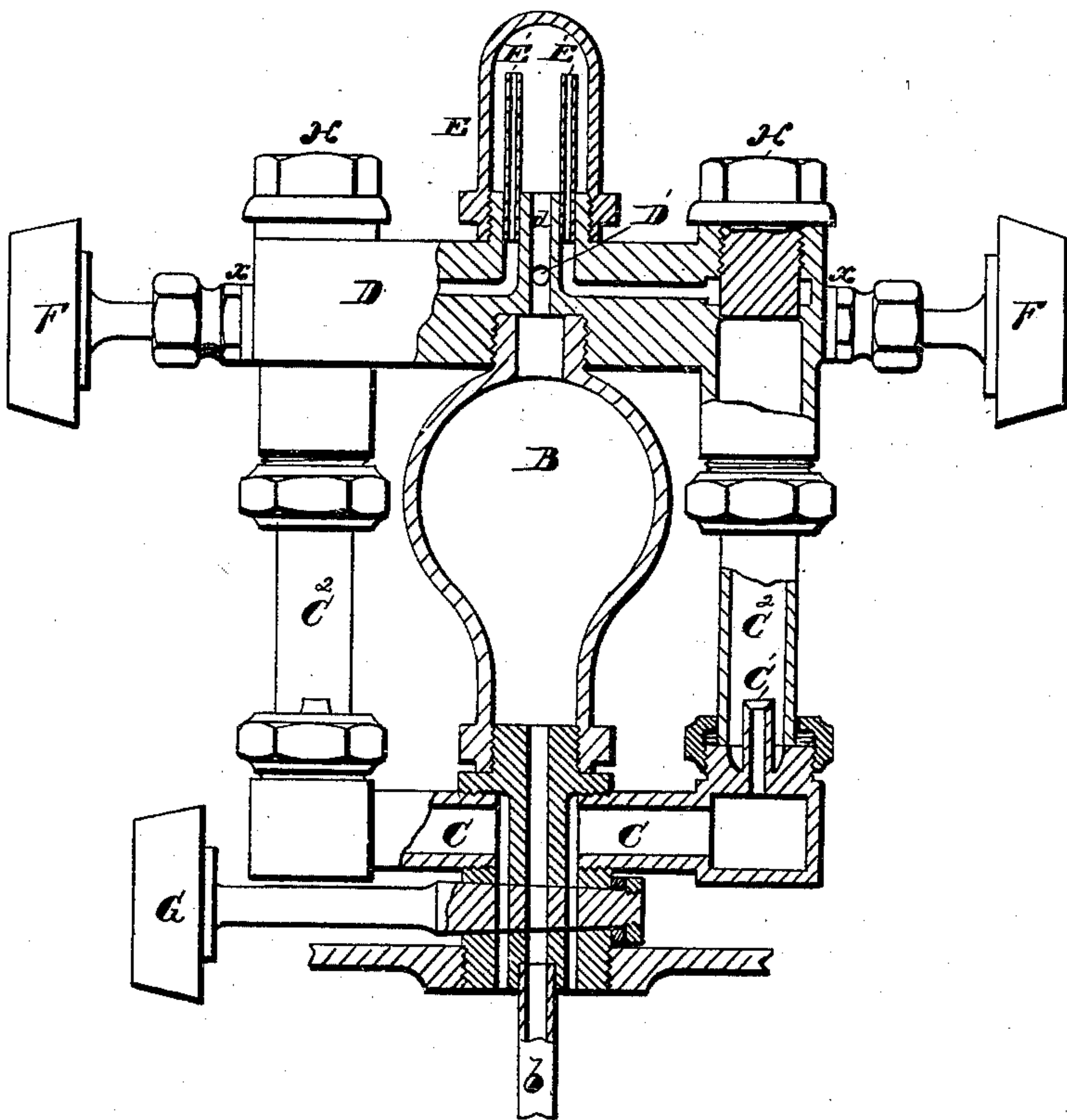


Fig. 4.

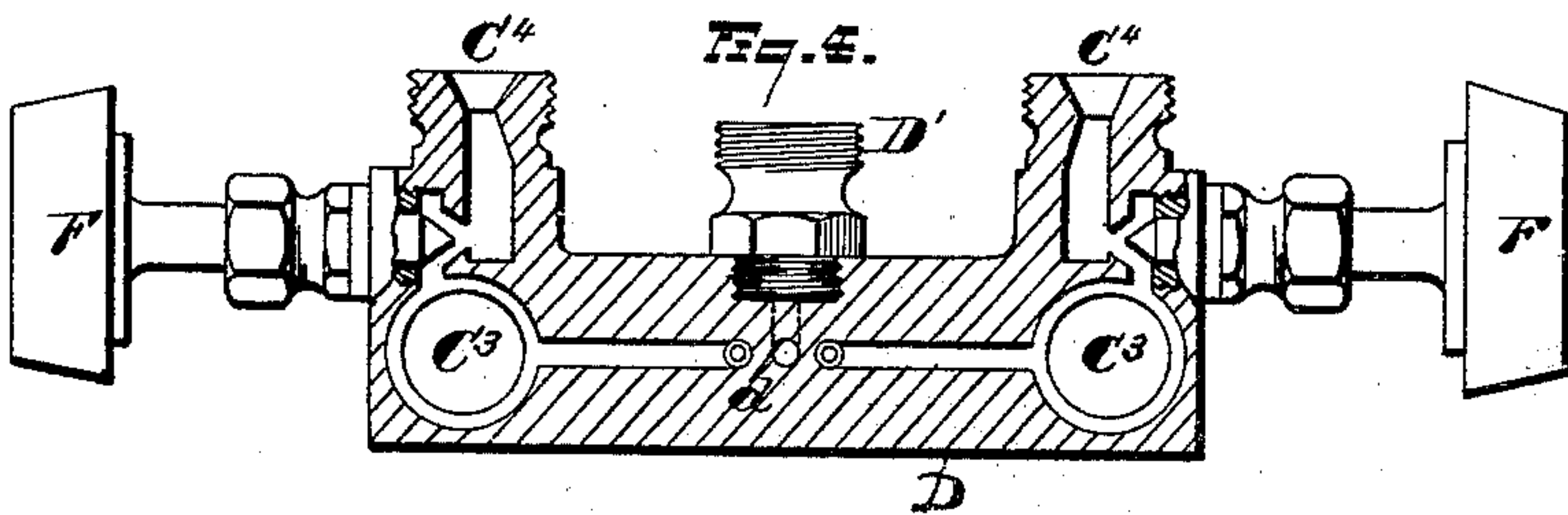
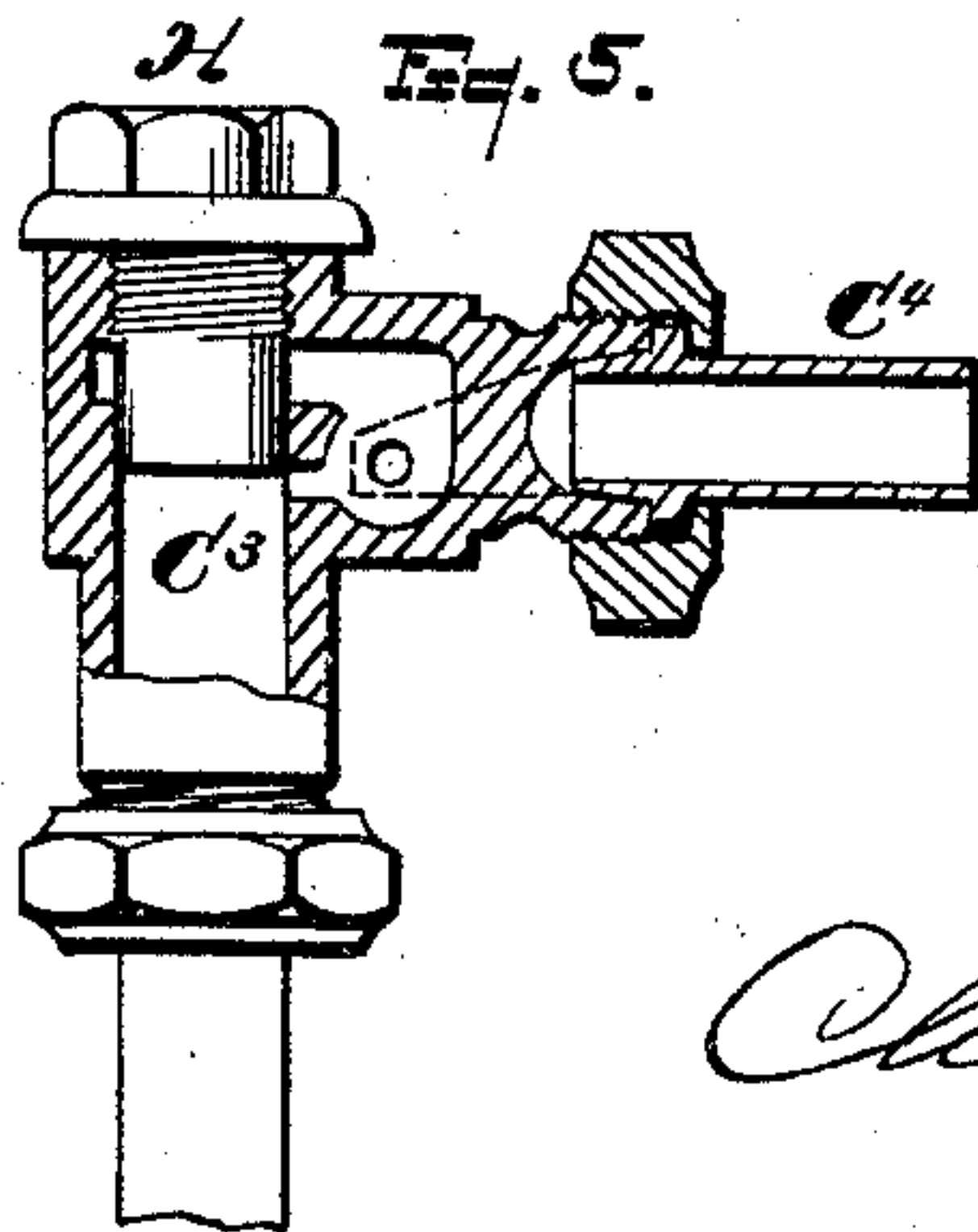


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES H. PARSHALL, SR., OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-HALF TO EDWARD GRACE, OF SAME PLACE.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 408,318, dated August 6, 1889.

Application filed October 8, 1888. Serial No. 287,526. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. PARSHALL, Sr., a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Lubricators; and I 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, which form a part of this specification.

My invention consists of the combinations of devices and appliances hereinafter specified, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a front view in elevation of a lubricator of the type known as a "single" lubricator embodying my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a view in section and elevation of those parts above the oil-reservoir and pertaining to the type known as a "double" lubricator. Fig. 4 is a horizontal sectional view on the line xx of the latter; and Fig. 5 a side elevation of the part shown in Fig. 4.

It is the purpose of my invention to produce a lubricator which shall be simple and cheap in its construction, certain in its operation, and which obviates the necessity of piping or conduits within the condenser; also, in novel construction whereby an equalizing conduit or conduits are so arranged as to be readily accessible at any time without disturbing the other parts of the lubricator.

In carrying out my invention, A is the oil-reservoir; B, the condenser of my improved lubricator. A pipe b projects from the condenser down inside and nearly to the bottom of the oil-reservoir.

C is the conduit through which oil passes from the oil-reservoir to the nozzle C' at the base of the sight-feed tube C^2 . The oil-conduit continues beyond the sight-feed glass, as shown at C^3 in Figs. 4 and 5, and finds its exit at C^4 .

D is an arm at the top of the lubricator. This is tapped above the condenser at D' for

the admission of a steam-pipe which leads to the boiler or source of steam.

E is a removable screw-cap or dome, which constitutes a steam-chamber, and d is a steam-passage which extends up to this steam-chamber and down to the condenser and communicates with the steam inlet D' . E' represents an equalizing-conduit, which leads from this steam-chamber down and through the arm D, as shown in Figs. 3 and 4, until it taps the oil-exit passage.

The steam-inlet D' (shown in Fig. 3) is below the steam-chamber E. Consequently, the condense-water not being able to rise above the steam-inlet D' , it will be impossible for water or oil to accumulate in the equalizing-conduits E' to a height sufficient to discharge it into the said steam-chamber. There is therefore no possibility of the oil feeding through one of the sight-feed glasses to go therefrom over through the steam-chamber E and off to the cylinder corresponding with the other sight-feed glass; but, on the contrary, the oil fed through each feed-glass can find no outlet except through C^4 , and thence to its corresponding cylinder.

The exit C^4 is slightly below the steam-inlet D' ; therefore the column of condense-water may rise to the said inlet D' and produce a preponderating column to discharge the oil through the said exit C^4 . The equalizing-conduit E' leads into the chamber C^3 above the sight-feed glass. A valve F governs the outflow from the chamber C^3 into the exit C^4 .

G is a valve which governs the admission of water from the condenser into the oil-chamber and the discharge of oil from the latter to the sight-feed glasses.

The operation of this device is as follows: The valve G being closed, the oil-reservoirs are filled with oil. Steam is introduced into the condenser and steam-chamber E. Condense-water fills the condenser and the sight-feed glasses. The valves F are then opened, and also the valve G. Condense-water descending into the oil-reservoir causes the oil to pass upward to the sight-feed glasses, and thence in visible drops off through the exit-passages C^4 . Suppose the steam-inlet D' is

connected with the steam-dome of the boiler or other source of constant pressure and the oil-exit passages connected with the dry-pipes or tallow-pipes of a locomotive. In this condition steam-pressure will be maintained constant at both ends of the lubricator so long as steam is admitted to the engine-cylinders. As soon, however, as steam is cut off from said cylinders—as, for instance, when approaching a station or when upon a down-grade—the lubricator will at such times have a pressure within the condenser and no pressure at the oil-exit passage. To remedy this difficulty, the equalizing-conduits E' are employed. They serve to tap the steam-pressure at the head of the condenser and lead the same to the space above the sight-feed glasses, thus equalizing the pressure at the two ends of the lubricator. Heretofore these equalizing-conduits have either been located entirely outside of the body of the lubricator, or else have been located within the condenser and top wall of the oil-reservoir. In the former case, however, they require labor outside of the shop at the place where the lubricator is put into use to properly locate them, and in the latter case, inasmuch as these conduits were steam-conduits, they serve to maintain the temperature of the condenser at so high a degree as to impair its condensing properties. In my device, however, these equalizing-tubes are located entirely above the condenser and above the steam-inlet passage. So, also, the dome, being made in the form of a removable screw-cap, affords ready means at any time for gaining access to and clearing out the said equalizing-conduits, should their operation become impaired. Plugs H are employed at the upper end of each of the glass tubes, by removing which the tubes may be taken out or new ones inserted. This construction also obviates the necessity of any tubes inside of

the condenser or oil-reservoir, except the single tube that projects downward from the condenser to the bottom of the oil-chamber, thus obviating a great source of annoyance. A vent I is provided for permitting an escape of air as the reservoir is being filled with oil, and likewise an admission of air as condensed water is drawn therefrom preparatory to filling.

What I claim is—

1. A locomotive-lubricator consisting of the combination, with an oil-reservoir and condenser, of sight-feed glasses located at the sides of the condenser, and in connection therewith the arm D, steam-inlet pipe, equalizing-conduits, and dome E, substantially as described.

2. The combination, with the condenser and sight-feed glasses arranged as described, of the arm D, dome E, equalizers E', and valves F, substantially as described.

3. The combination of the condenser, the dome, a steam-inlet pipe, one or more equalizing-conduits, one or more sight-feed glasses located at the side or sides of the condenser, the oil-reservoir, one or more oil-exit conduits, and the valves F and G, substantially as described.

4. In a lubricator, the combination, with the steam-admission and oil-exit conduits, of equalizing-conduits terminating in a steam-dome above the condenser, said dome made in the form of a screw-cap adapted to be readily removed for gaining access to said equalizing-conduits, substantially as and for the purposes described.

In testimony whereof I sign this specification in the presence of two witnesses.

CHARLES H. PARSHALL, SR.

Witnesses:

M. B. O'DOHERTY,

JOHN E. WILES.