(No Model.)

G. H. WEEKS.

SPRAYING DEVICE FOR CARBURETERS.

No. 603,933. Patented May 10, 1898.

Fig. 1.

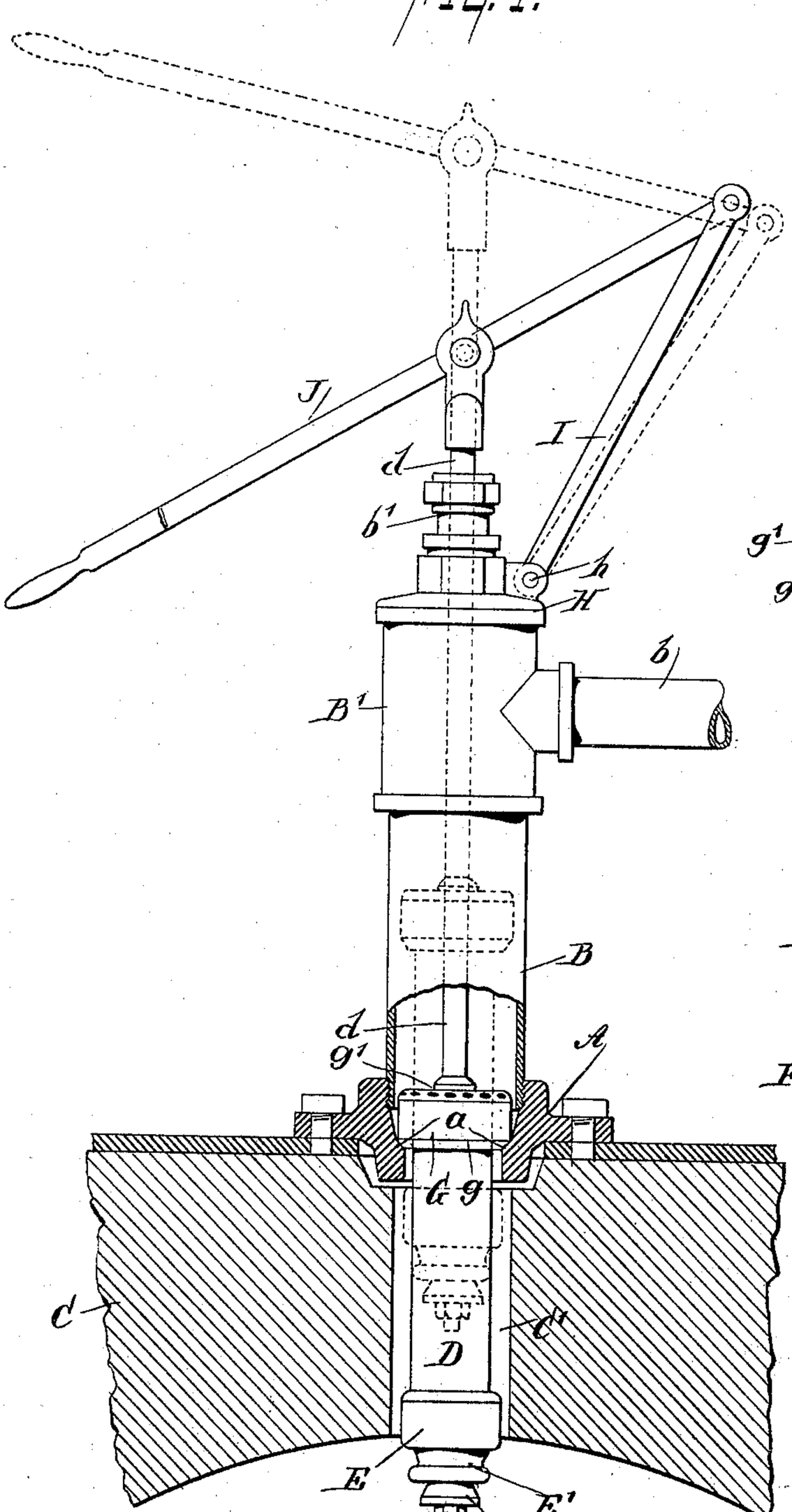


Fig. 2.

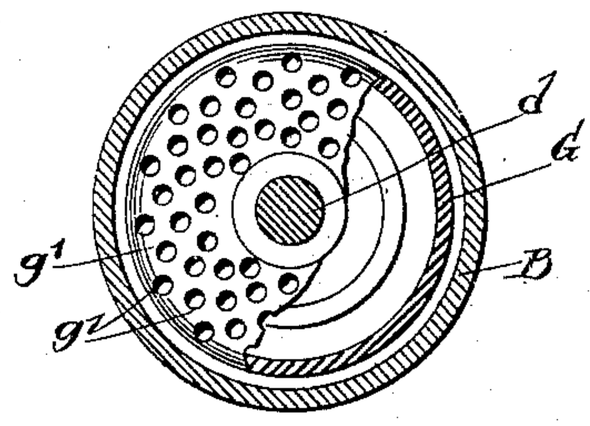
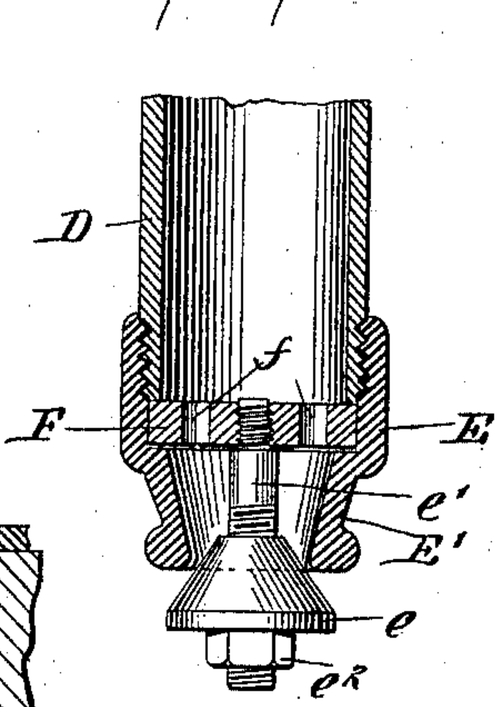


Fig. 3.



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SPRAYING DEVICE FOR CARBURETERS.

SPECIFICATION forming part of Letters Patent No. 603,933, dated May 10, 1898.

Application filed October 23, 1897. Serial No. 656,168. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. WEEKS, of New York city, in the county and State of New York, have invented a new and Improved Spraying Device for Carbureters, of which the following is a full, clear, and exact description.

My invention relates to an improvement in spraying devices for carbureters and similar apparatuses, and has for its object to enable the nozzle to be withdrawn from the heated chamber when not actually in use and thus to prolong the life of the nozzle.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal view, partly in section, of the nozzle and the devices for operating it. Fig. 2 is a cross-section taken just outside the inner end of the movable cylinder, and Fig. 3 is a longitudinal section of the inner end of said cylinder and the head of the nozzle.

In using spraying-nozzles for the introduction of oil and hydrocarbons as fuel it is often the case where they are left constantly exposed to the heat and are only part of the time in use, as is the case in connection with carbureters used for the manufacture of gas, that the nozzle will quickly be burned out, necessitating much delay and inconvenience due to the time lost in removing the nozzle and expense incurred by replacing the same. In my device most of this is obviated and a nozzle will last many times longer than when constructed in the usual manner.

In the drawings, C represents one of the walls of the carbureter and has an opening C′ therein, through which the nozzle is inserted. To the outside of the carbureter is attached a plate A, having a central hole therein to receive the nozzle and formed at *a* as a valve-seat, upon which a conical surface of the cylinder carrying the nozzle may be forced, so as to close the same.

To the plate A is attached a casing B, which preferably consists of a short section of pipe which is screwed into a boss formed upon the outer surface of the plate A. To the outer end of the casing B is attached a T B′, which at its outer end is provided with a cap H, having a stuffing-box or gland *b′* mounted thereon and adapted to receive a rod *d*, by which the cylinder D is operated. To the other opening in the T is attached the oil-supply pipe *b*.

Within the casing B is placed a movable cylinder D, which consists of a piece of pipe having upon its outer end a cap G, which has its end provided with holes *g′*, through which the oil may flow from the casing B to the interior of the cylinder or pipe D. The inner edge of the cap G is turned to form a valve *g*, which is adapted to engage the valve-seat *a*, so as to prevent flow of the oil around the cylinder D. To the other or inner end of the cylinder D is attached a cap E, which forms the head of the nozzle. This cap is threaded upon the cylinder D and is provided with a ledge adapted to receive a disk F, which forms a partition and which is engaged by the end of the cylinder D to hold the same in place. This disk is provided with holes *f* to permit the flow of the oil.

To the center of the disk F is attached a stem *e′*, which projects through the orifice in the cap E. The outer end E′ of this cap is preferably of a conical shape, with the small end outward.

Upon the outer end of the stem *e′* is screwed a cone *e*, which is held in any position by means of the lock-nut e^2. The small end of this cone enters the discharge-orifice in the head E. This cone may be adjusted upon the stem, so as to regulate the size of the opening through which the oil flows.

To the cap G, fixed upon the inner end of the cylinder D, is attached the rod *d*, which extends outward through the stuffing-box *b′*. Outside the casing this rod is pivoted to a lever J, which lever is fulcrumed upon a link I, pivoted at *h* to the cap H. By means of this lever the cylinder carrying a nozzle may be withdrawn within the casing, as shown by dotted lines in Fig. 1, so as to remove the nozzle from the direct action of the heat within the carbureter or may be inserted within the carbureter, as shown in full lines in said figure.

When it is desired to spray oil within the carbureter, the nozzle is inserted therein; but as soon as the spraying is discontinued the nozzle is withdrawn by simply raising the lever J. As such devices are used in connection with carbureters in manufacturing

gas the nozzle is in use only a small part of the time. In consequence of this the nozzles are very rapidly burned out and have to be replaced. This, aside from the cost of the nozzles, incurs considerable expense due to the time lost in replacing the nozzles. With the nozzles constructed as herein shown and described their lives will be very much prolonged, and considerable saving will result from the smaller number of nozzles consumed and the time saved in replacing the same.

The outer casing B and the cylinder D form telescopic members. The cap G or the cylinder itself may be made to fit closely within the outer casing B instead of having the identical construction shown. By such construction the contact of the outer surface of the inner member against the inner surface of the outer would form a valve preventing the flow of the oil outside the inner member. Such construction is, however, not deemed as good as the one shown by reason of the fact that it would call for larger finished surfaces, which would add to the cost of construction, while the construction shown in the drawings answers all purposes.

In a small-sized apparatus the plate A may be made as a screw-plug having the proper valve-seat and screwing into a threaded opening in the casing.

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

1. An oil-spraying device for carbureters, comprising a casing fixed to the carbureter and having a supply-pipe connected thereto, a nozzle within said casing, and means for entering said nozzle within the carbureter or withdrawing it within the casing, at will, substantially as described.

2. An oil-spraying device for carbureters, comprising a casing fixed to the carbureter and having a supply-pipe connected thereto, a hollow cylinder within said casing and adapted to close the same, a nozzle upon the inner end of said cylinder, and means for reciprocating said cylinder within the casing, at will, substantially as described.

3. An oil-spraying device for carbureters, comprising a casing fixed to the carbureter and having an outwardly-facing valve-seat within the same and an oil-supply connection, a hollow cylinder within said casing, having a nozzle upon its inner end, and a head or projecting ring upon its outer end having a valve-surface adapted to engage the said valve-seat, and means for reciprocating the cylinder to seat the valve and project the nozzle into the carbureter or to withdraw the cylinder into the casing, at will, substantially as described.

4. An oil-spraying device for carbureters, comprising a casing fixed to the carbureter and having a supply-pipe connected thereto, a hollow cylinder within the said casing adapted to close the same, a nozzle upon the inner end of said cylinder, a rod attached to the cylinder and extending outside the casing, and a lever pivoted to said rod and by which the cylinder-nozzle may be entered within the carbureter or be withdrawn into the casing, as desired, substantially as described.

5. An oil-spraying device for carbureters and similar devices, comprising a telescopic casing, the outer section thereof being secured to the carbureter and the inner section having a nozzle attached thereto, and means for projecting the inner section from the outer section or withdrawing it within the same at will, substantially as described.

6. An oil-spraying device for carbureters, comprising a casing fixed to the carbureter and having an outwardly-facing valve within the same, and an oil-supply connection, a hollow cylinder within said casing, having a nozzle upon its inner end and a perforated cap upon its outer end, the inner edge of said cap forming a valve to engage the seat, a rod attached to said cap, a stuffing-box for the exit of said rod, and means for engaging said rod and moving the cylinder, to project the cylinder into the carbureter or withdraw it into the casing, substantially as described.

7. A nozzle for carbureters, comprising two telescopic members, a hollow cap secured to the end of one member, a perforated disk or partition extending across the cap, a stem supported from said disk, and a cone upon said stem and entering the hole in the cap, substantially as described.

8. An oil-spraying device for carbureters, comprising a casing fixed to the carbureter and having a supply-pipe connected thereto, a hollow cylinder within this casing adapted to close the inner end thereof, a nozzle upon the inner end of said cylinder, a rod attached to the cylinder and extending outside the casing, a lever pivoted to the outer end of said rod, and a link pivoted to said lever as a fulcrum, whereby the cylinder and nozzle may be entered within the carbureter or withdrawn into the casing, substantially as described.

GEORGE H. WEEKS.

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