(No Model.)

T. C. MOSELY & A. H. KINGMAN.

GASOLINE HEATER.

No. 490,880. Patented Jan. 31, 1893.

Fig. 1.

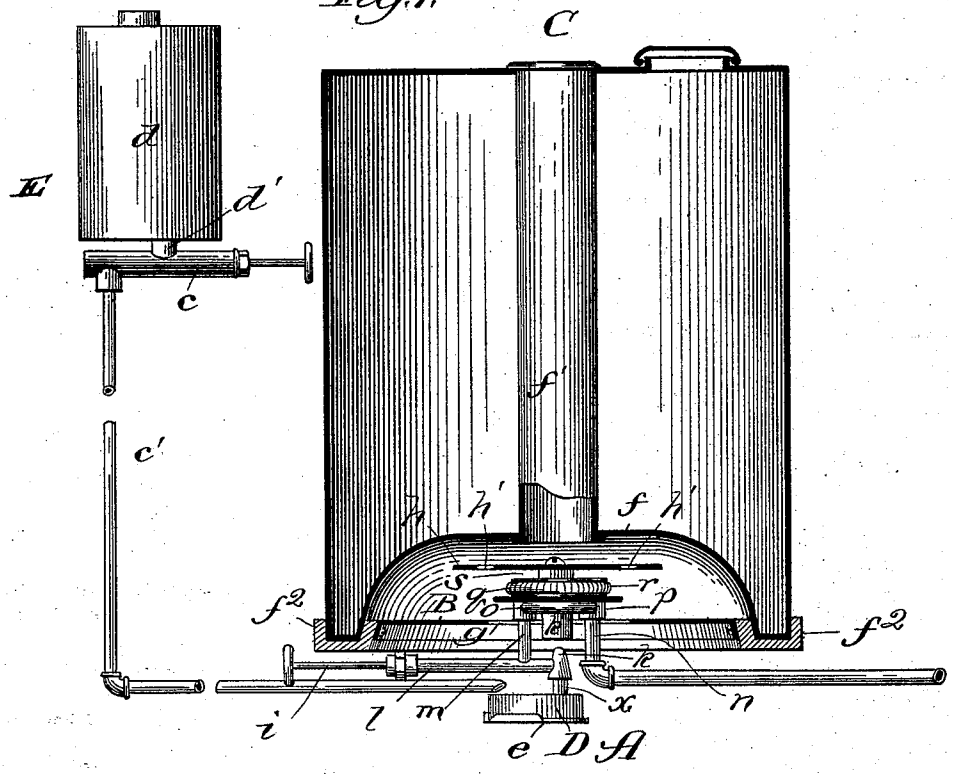


Fig. 2.

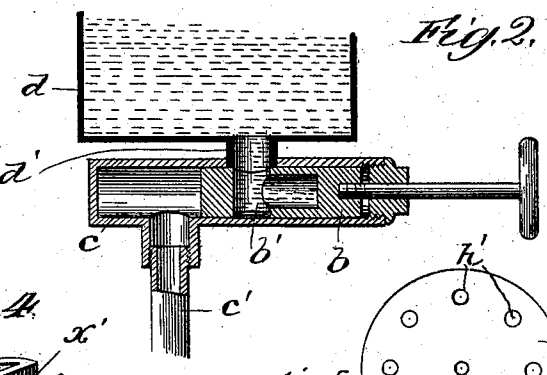


Fig. 3.

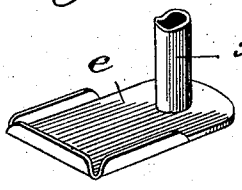


Fig. 4.

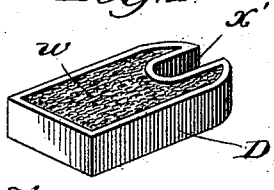
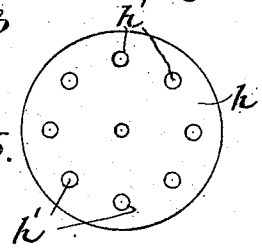


Fig. 5.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

THOMAS C. MOSELY AND ALPHEUS H. KINGMAN, OF CHICAGO, ILLINOIS.

GASOLINE-HEATER.

SPECIFICATION forming part of Letters Patent No. 490,880, dated January 31, 1893.

Application filed April 13, 1891. Serial No. 388,719. (No model.)

To all whom it may concern:

Be it known that we, THOMAS C. MOSELY and ALPHEUS H. KINGMAN, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Gasoline-Heaters, of which the following is a specification.

Our invention relates to the class of heaters employing refined fluid hydro-carbon, or gasoline as the fuel and in which the burner is adapted to vaporize, by heat, the gasoline to prepare it, on its way to the burner, for consumption.

The object of our improvement is to provide a construction of burner of the nature referred to, whereby the combustion of the liquid-fuel and thereby also the heat-intensity of the flame shall be increased and the flame shall, at the same time, be spread to cover a comparatively large area of the object being heated.

In the accompanying drawings, Figure 1 is a view in broken elevation of our improved heater applied to a water receptacle shown in section and as partly broken. Fig. 2 is a broken sectional view of the alcohol-supply holder and valve for controlling and proportioning the feed therefrom. Figs. 3 and 4 are perspective views of details. Fig. 5 is a plan view of the flame spreading plate.

A is a gasoline-burner comprising the hollow circular and peripherally bulging head *r*, having slits forming openings *q* extending at close intervals around the periphery transversely through the same, the head being flat and closed at its upper and lower sides. The burner-head *r* is secured upon a disk *p* having a diagonal duct *o* on its under side with one end of which the supply-pipe *n* communicates, while the opposite end leads into a short tube *m* terminating in a cross-tube *l* provided at one extremity with the burner-nipple *k* and having inserted into its opposite end a supply-regulating valve *i*. The nipple *k* coincides with the short tube *k'* leading into the burner-head at its base.

The parts of the burner as thus far described are old and well-known, being shown to serve for illustrating our improvements hereinafter described, but which are not limited to use in such particular connection.

The burner-head *r* is surmounted by a flame-spreading plate *h*, preferably a disk of sheet-metal, and which should be provided with several perforations *h'* between its edge and the periphery of the burner-head. The plate *h* is fastened flatwise over the upper side of the burner-head *r* in a manner, as indicated, to leave a narrow space *s* between the two, which, as practice has demonstrated, greatly facilitates the burning.

B is an annular diaphragm, the diameter of the opening *g* in which is less than that of the plate *h*, whereby the latter overlaps the edges of the diaphragm-opening above which it is supported, as shown and hereinafter more fully explained.

C is a form of water-heater especially adapted for use with our improved burner, by having an inverted dish-shaped base *f* from which a ventilating pipe *f'* extends centrally through the water-holder, which is supported around the edge of its base in a ring, f^2, recessed circumferentially on its upper side to receive it and the interior of which is partially filled by the annular diaphragm B supported on the ring.

At the lower end of the nipple *k* is an extension forming a post *x*, to which is rigidly fastened in horizontal position a flanged plate affording a rest *e* for a dish D having a recess *x'* in its rear end to adapt it there to embrace the post *x* when the dish is supported in operative position on the rest. We form the dish D of metal and pack it internally with asbestus fiber or mineral wool, *w*, to absorb the alcohol used initially in starting the burner, as hereinafter described, thereby to prevent spilling or slopping of the alcohol and also, the packing being a non-conductor of heat, to avoid such heating of the dish as would prevent it from being always in condition to be removed by hand for refilling, which may be done by merely slipping it off its rest *e*, upon which it is as readily replaceable.

With the alcohol-supplying attachment E, however, the dish D need rarely be removed. The attachment E comprises a receptacle *d* adapted to hold, say, about a pint of alcohol (or other suitable spirit) and having a tubular opening *d'* in its base, leading into a horizontal tube *c* closed at one end near which a supply-pipe *c'* leads to the dish D. In the

tube c is a piston b containing a chamber b' extending transversely through it and adapted to hold a few spoonfuls of alcohol, and which coincides with the outlet d' when the piston is drawn outward, as it normally is, so that the chamber b' is normally in position to fill.

Alcohol is desirable, as a medium for starting the burner to vaporize initially the gasoline by reason of its being non-odorous, which the gasoline is not, and if used for the purpose, is more or less offensive on account of the odor and the smoke it generates.

To start the burner, enough alcohol is supplied to the dish D, either upon removing it for the purpose in the manner described, or by forcing inward the piston b till its chamber b', which thus apportions the supply, coincides with the pipe c', into which the contents empty and thence enter the dish, the piston, meantime, preventing escape of any of the contents of the holder d and being returned to its normal position when the chamber b' has been emptied. The alcohol in the dish is then ignited and heats the pipe l into which the gasoline supply is admitted, thereby generating the required vapor from the gasoline before it emerges from the nipple k whence it passes into and through the burner-head r, where it is lighted, under the plate h. The air passing through the opening in the diaphragm B mixes with the flame, and the draft spreads the latter over the entire area of the base of the receptacle C, at the same time producing perfect combustion of the liquid fuel and an intense heat, and combustion is materially assisted by the free circulation of air across the space s between the top of the burner-head and base of the plate h.

What we claim as new and desire to secure by Letters Patent is—

In combination, a receptacle C having an inverted-dish-shaped bottom supported on a ring f^2 and containing an annular diaphragm B, and a burner A, having its burner-head supported over the opening in the diaphragm and surmounted by a spreading-plate h greater in diameter than the diaphragm-opening and affording a space s between it and the burner-head, substantially as described.

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ALPHEUS H. KINGMAN.

In presence of—
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M. J. FROST.