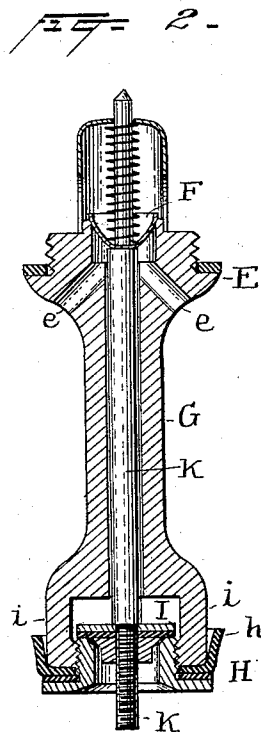
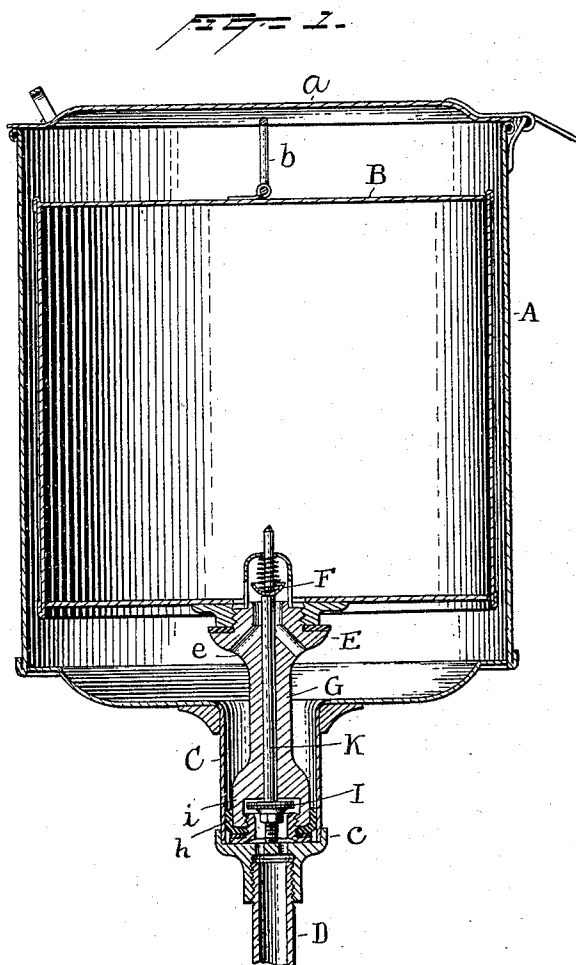


(No Model.)

H. C. CAMPBELL.
VAPOR STOVE.

No. 604,366.

Patented May 24, 1898.



WITNESSES:

Norris A. Clark.

Jno. A. Saylor.

INVENTOR

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BY

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HARRY C. CAMPBELL, OF LEET, PENNSYLVANIA, ASSIGNOR TO THE
STANDARD OIL COMPANY OF NEW YORK, OF NEW YORK, N. Y.

VAPOR-STOVE.

SPECIFICATION forming part of Letters Patent No. 604,366, dated May 24, 1898.

Application filed October 14, 1897, Serial No. 655,108. (No model.)

To all whom it may concern:

Be it known that I, HARRY C. CAMPBELL, a citizen of the United States, residing in Leet township, Allegheny county, State of Pennsylvania, have invented a certain new and useful Improvement in Vapor-Stoves, of which the following is a specification.

The object I have in view is to increase the safety of stoves using gasolene or other liquid hydrocarbon for fuel which is converted into vapor at the burners by insuring the extinguishment of the flames as a condition precedent to the refilling of the tank or reservoir with gasolene.

In carrying out my invention I apply to the ordinary stationary tank or reservoir mounted upon the stand-pipe of the stove or otherwise a suction-plunger and check-valve so arranged and so connected with associated parts that the filling of the tank will necessarily be preceded by an upward movement of the plunger, which will draw the gasolene upwardly in the stand-pipe and away from the burners sufficiently to extinguish the flames. The plunger for this purpose is located in a cylinder connected with the stand-pipe and is itself connected with some movable part the movement of which is necessary as a condition precedent to the filling of the tank. I prefer to employ a filling can or reservoir within the tank which, similar to the reservoir in a student-lamp, has a check-valve in its bottom, through which it is filled, which check-valve is opened by a suitable projection when the inside reservoir is inserted in the tank. The tank is provided in its bottom with a cylinder, which is a continuation of the stand-pipe, and a plunger with a check-valve is carried by a tubular extension from the lower end of the reservoir. This plunger works in the cylinder in the bottom of the tank and when in the normal position of rest has its check-valve opened by the striking of a stem carrying said valve on a perforated plate at the bottom of the cylinder. This same stem extends through the tubular support and operates the check-valve in the bottom of the reservoir. By this arrangement the withdrawal of the reservoir from the tank acts first to close both check-valves and afterward to cause the plunger to

exert a suction in the cylinder sufficient to draw the gasolene up in the stand-pipe and extinguish the flames at the burners.

In the accompanying drawings, forming part hereof, Figure 1 is a central vertical section of a tank for a vapor-stove embodying my improvement and showing the parts in position to open the check-valves; and Fig. 2 is a sectional view, on a larger scale, through the plunger and check-valves.

A is the tank, having a suitable cover *a* and provided with an interior reservoir or can B, having a suitable handle *b*, by which it can be withdrawn from the tank when the cover *a* is open. In the bottom of the tank is a cylinder C, open at its upper end and flared to guide the plunger to a central position and closed at its lower end by a coupling *c*, which is perforated to permit the passage of the gasolene therethrough.

D is the stand-pipe, leading to the burners and connected with the cylinder C by the coupling *c*.

In the bottom of the reservoir B is screwed a filling-plug E, having a check-valve F. This is the usual device heretofore employed, and has been arranged to operate in conjunction with a projection on the bottom of the tank, which opened the check-valve when the reservoir was inserted in the tank. Connected with the filling-plug E, and preferably in one piece therewith, is a downward tubular extension G, having lateral openings *e* and carrying at its lower end a plunger H, provided with a leather washer *h* or other suitable device for making a suction-tight fit with the interior surface of the cylinder C. The plunger H has an open center formed to seat a check-valve I, which works in a yoke *i* above the plunger. A stem K is secured to the check-valve I and extends upwardly therefrom through the extension G, striking at its upper end the check-valve F. The stem K also extends below the check-valve I and below the plunger H, so that when the plunger is pushed to the bottom of the cylinder C, as it is by the placing of the reservoir B in the tank A, the stem K will strike the center of the coupling *c* and will open both check-valves F and I. In this position of the parts, which is illustrated in Fig. 1, the gasolene runs out of the reser-

voir B through the openings *e* and fills the lower end of the tank A and the cylinder C, from which it runs into the stand-pipe D and to the burners.

5 When it is desired to renew the supply of
 gasolene in the reservoir, the cover *a* is opened
 and the reservoir is lifted out of the tank by
 its handle *b*. The first effect of the upward
 movement is to close the check-valves F I,
 10 thus preventing the escape of any more gaso-
 lene from the reservoir and also closing the
 opening through the plunger. The further
 upward movement causes the plunger to pro-
 duce a suction in the cylinder C, which draws
 15 up the gasolene in the stand-pipe, withdraw-
 ing it from the burners, with which the stand-
 pipe is connected, and extinguishing the
 flames. After the reservoir is removed from
 the tank it is filled in the usual way through
 20 the opening in its bottom by the unscrewing
 of the filling-plug E. It will thus be seen that
 the extinguishment of the flames is accom-
 plished automatically by the withdrawal of
 the reservoir from the tank, which operation
 25 must be performed before the supply of gaso-
 lene in the reservoir can be renewed or before
 the reservoir can be removed from the tank
 for any purpose.

In returning the parts to their normal po-
 30 sitions the check-valve I will be elevated and
 will prevent the imposition of an objection-
 able pressure in the stand-pipe, whereby the
 gasolene will be prevented from being forced
 out at the burners.

35 What I claim is—

1. In vapor-stoves, the combination with a
 stand-pipe and tank, of a cylinder connect-
 ed with the stand-pipe and tank, a plunger
 provided with an upwardly-opening check-
 40 valve working in said cylinder and acting to
 withdraw the gasolene from the stand-pipe,
 means for holding said check-valve positively
 open in its lowered position, and a connec-
 tion between said plunger and a part which
 45 is moved as a condition precedent to the fill-
 ing of the tank, substantially as set forth.

2. In vapor-stoves, the combination with a
 stand-pipe and tank, of a cylinder connect-
 ed with the stand-pipe and tank, a plunger
 50 provided with an upwardly-opening check-
 valve working in said cylinder and acting to
 withdraw the gasolene from the stand-pipe,

a coupling at the lower end of said cylinder
 with which the stem of said check-valve en-
 gages whereby the check-valve will be main- 55
 tained positively opened in its lowered posi-
 tion, and a connection between said plunger
 and a part which is moved as a condition pre-
 cedent to the filling of the tank, substantially
 as set forth. 60

3. In vapor-stoves, the combination with a
 stand-pipe and tank, of a reservoir or can
 within the tank, a plunger connected to said
 reservoir or can and acting by its movement
 to withdraw the gasolene from the stand-pipe 65
 and carried by said interior reservoir, where-
 by the withdrawal of the reservoir from the
 tank will cause the plunger to withdraw gaso-
 lene from the stand-pipe and extinguish the
 flame at the burner, an upwardly-opening 70
 check-valve for opening a passage through
 the plunger when the parts are in the normal
 condition of rest, and means for holding said
 check-valve positively open in its lowered po-
 sition, substantially as set forth. 75

4. In vapor-stoves, the combination with a
 stand-pipe and tank, of a cylinder between
 the stand-pipe and tank, a reservoir or can
 within the tank, a check-valve in the bottom
 of the reservoir, a plunger and check-valve 80
 carried by the interior reservoir and moving
 in said cylinder, and means for opening both
 check-valves when the reservoir is inserted
 in the tank, substantially as set forth.

5. In vapor-stoves, the combination with a 85
 stand-pipe and tank, of a cylinder between
 the stand-pipe and tank, a reservoir or can
 within the tank having a filling-plug with a
 check-valve, in its bottom, an extension from
 said filling-plug carrying a plunger and check- 90
 valve at its lower end working in said cylin-
 der, and a valve-stem for opening both check-
 valves which strikes an obstruction at the
 lower end of said cylinder and opens the
 check-valves when the interior reservoir 95
 reaches its position of rest in the tank, sub-
 stantially as set forth.

This specification signed and witnessed this
 9th day of October, 1897.

HARRY C. CAMPBELL.

Witnesses:

EUGENE CONRAN,
 JNO. R. TAYLOR.