H. P. MALONE.

OIL-STOVE.

No. 189,048. Patented April 3, 1877.

Fig. 1.

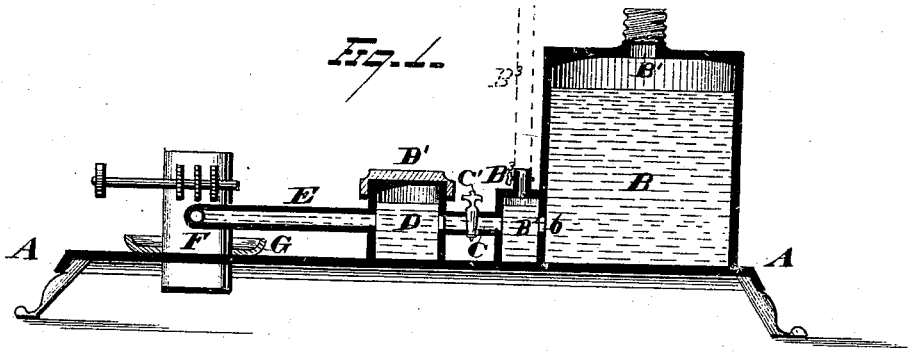


Fig. 3.

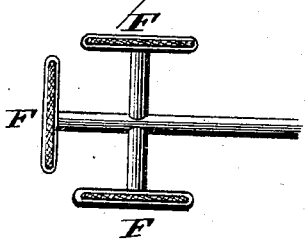


Fig. 4.

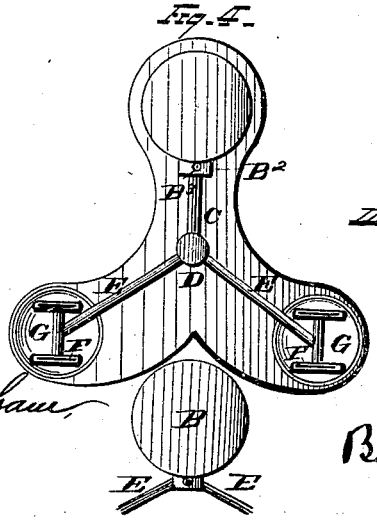
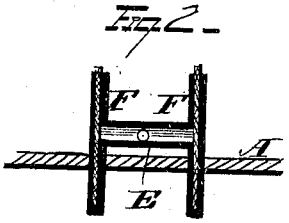


Fig. 2.



WITNESSES

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HEZEKIAH P. MALONE, OF CLEVELAND, OHIO.

IMPROVEMENT IN OIL-STOVES.

Specification forming part of Letters Patent No. **189,048**, dated April 3, 1877; application filed February 21, 1877.

To all whom it may concern:

Be it known that I, HEZEKIAH P. MALONE, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Oil-Stoves; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in oil-stoves; and consists in the combination of devices and appliances hereinafter specified and claimed.

In the drawing, Figure 1 is a longitudinal central section exhibiting my invention. Fig. 2 is a cross-section through two of the burners. Fig. 3 is a modification, showing how three or more burners may be employed. Fig. 4 is another modification.

A is a suitable frame of any character, which supports the structure. B is a reservoir for receiving the oil. It is provided with a screw-capped feed-port, B^1. *b* is an orifice leading from near the bottom of the reservoir B into a supplemental chamber, B^2. This chamber is closed air-tight at the top, but is here provided with an air-cock, B^3. C is a pipe, provided with a stop-cock, C′. The pipe leads into a small chamber, D, near the bottom of the same. The chamber D is provided with a loosely-fitting cover or cap, D′, which will permit the escape of gas should any accumulate in the chamber D. E is another pipe, which leaves the chamber D at a point higher than the point of entrance of the pipe C. The pipe E branches, and is connected directly with the wick-tubes F. The tubes F are made simply long enough and large enough to accommodate a single length and thickness of wick.

G is a small pan or catch-basin, constructed to surround the wick-tubes. The object of this catch-basin is as follows: In extinguishing the lamp it is usually done by running the wick down into the tube until the flame is extinguished. This leaves the top of the wick below the bottom of the tube, in which case no oil will escape by capillary attraction. But it is not unfrequently the case that a lamp is extinguished by blowing out the flame, which leaves the wick projecting above the top of the wick-tube. In this case the capillary action of the wick will cause the oil to escape from the burner, and it will be collected by the basin G.

The operation of this device is substantially as follows: When the operator desires to fill the reservoir B, he closes the stop-cock C′, and also closes the air-cock B^3 in the chamber B^2. He then removes the cap from the feed-port B^1 and fills the reservoir, afterward replacing the cap. He then opens the stop-cock C′ and the air-cock B^3. The oil from the chamber B will then pass through the pipe C into the chamber D; thence through the pipe E to the wick-tubes F, where it will saturate the wicks. It will be observed, however, that the oil will not rise in the wick-tubes to the height of the oil in the reservoir, because this waste of oil from the reservoir will cause a vacuum to be formed in the top of the oil in the reservoir. The pressure of the atmosphere through the air-cock B^3 will therefore stop the flow from the reservoir before it has filled the supplemental chamber B^2. The capillary action of the wick-tube will soon waste the oil from the chamber B^2 until the level of the oil in that chamber is below the edge of the orifice *b*. A bubble of air will then pass from the chamber B^2, and into the chamber B through the opening *b*. This will partially relieve the vacuum in the top of the chamber B, and the oil will again nearly fill the supplemental chamber B^2, and so on until the oil has been entirely consumed from the reservoir B.

The object of the chamber D is as follows: If, from any cause, gas should accumulate in the pipe E, this gas might pass back into the reservoir and cause an explosion; but the pipe E passes from the chamber D at a level a trifle higher than the point of entrance of the pipe C, so that the pipe C will always be closed with an oil-seal, and whatever gas passes back into the chamber D will escape around its loose cover.

It is apparent that any kind of stopper may be employed instead of the screw-tap B^1.

If it is desired to use three or more burners, they may be arranged substantially as

shown in Fig. 3. So, also, a single wick-tube—as, for instance, an Argand—may be employed instead of the devices here shown. The same principle I propose to employ in connection with double stoves, such as shown in Fig. 4, it only being necessary to make branch pipes to lead from the pipe F, or from the chamber D or pipe C, or directly from the supplemental chamber B^2, to apply the same principle to any number of such stoves.

It is apparent that in no event can the oil in the chamber D be at a greater height than the level of the oil in the supplemental chamber B^2, and the construction is such that the oil in the chamber D shall be only sufficient to insure the filling of the tube E.

The drawings only represent so much of the stove as illustrates the manner of supplying the wick-tubes with the oil.

Any suitable structure may be made to surround and surmount the wick-tubes, and support the utensil to be heated.

I do not limit myself to such a construction as dispenses with an oil-chamber beneath the wick-tube. Such a construction may be employed, and in that event the pipe E, or the pipe which connects with the air-chamber B^2, may enter the stove either in the wick-tubes, or enter the chamber H beneath them directly. In case the chamber H is employed beneath the wick-tube, the oil brought to it by the pipe will be within range of the capillary action of the wicks; but the level of the oil in the chamber will always remain at the same height as the oil in the supplemental air-chamber B^2, although the oil in the reservoir B is much higher, and may be even higher than the tops of the wick-tubes, as will generally be the case.

Instead of employing the air-cock B^3, I may employ simply a small pipe leading from the chamber to the top of the oil-reservoir B, and open at its top.

The height of free oil in the wick-tube will alternate through narrow limits, as the oil is wasted from and resupplied to the chamber B^2.

What I claim is—

1. The combination of reservoir B, provided with supplemental air-chamber B^2, wick tube or tubes F, pipes C E, and chamber D, the latter furnished with a loose cover, substantially as and for the purpose set forth.

2. The combination, with pipe E, having two or more wick-tubes secured thereto, of an oil-reservoir, B, supplemental chamber B^2, and cock C′, and cock or pipe B^3, substantially as and for the purpose set forth.

3. The combination of reservoir B, chamber B^2, pipe C, and cocks C′ and B^3, substantially as and for the purposes described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HEZEKIAH P. MALONE.

Witnesses:

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