C. RUPRECHT.

OIL-STOVE.

No. 193,619. Patented July 31, 1877.

Fig. 1.

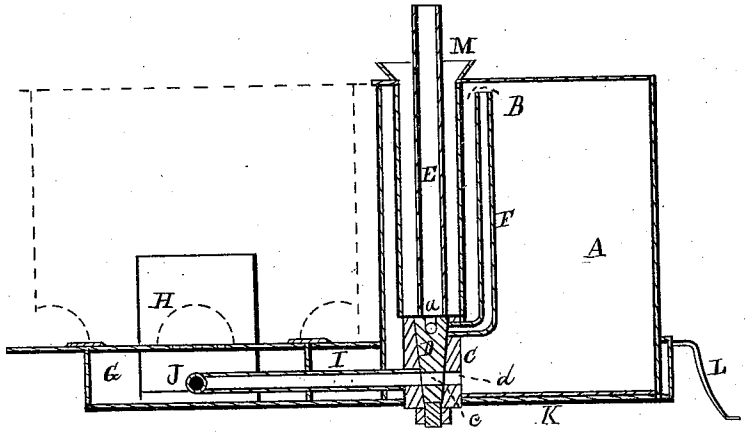


Fig 2

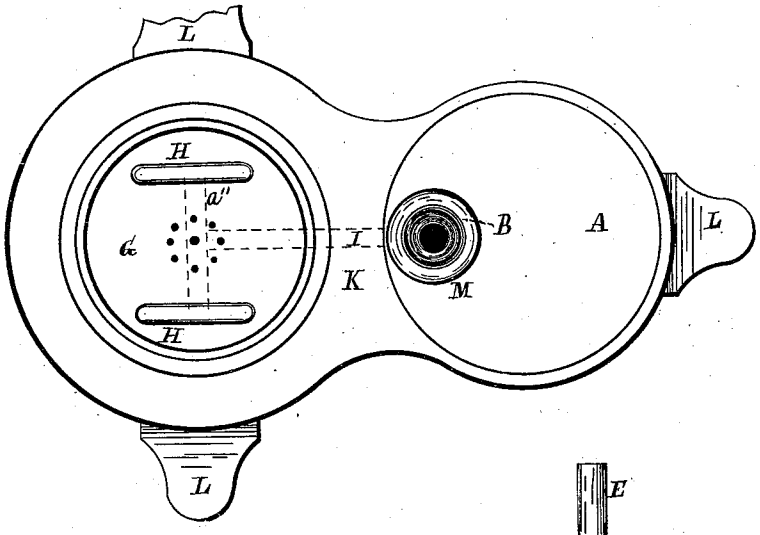


Fig. 3.

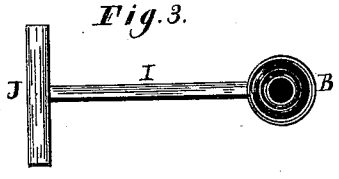
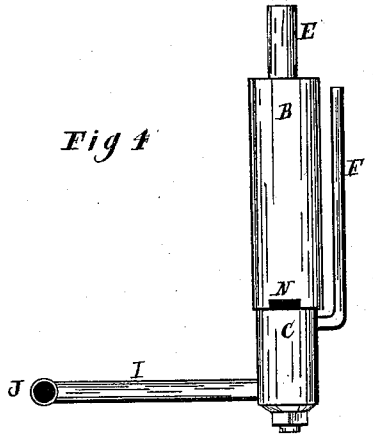


Fig 4



Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES RUPRECHT, OF CLEVELAND, OHIO.

IMPROVEMENT IN OIL-STOVES.

Specification forming part of Letters Patent No. **193,619**, dated July 31, 1877; application filed May 31, 1877.

To all whom it may concern:

Be it known that I, CHARLES RUPRECHT, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and Improved Oil-Stove; and I do hereby declare that the following is a full, clear, and complete description thereof, reference being had to the accompanying drawings, making a part of the same.

Figure 1 is a vertical section of the stove. Fig. 2 is a top view of the stove. Figs. 3 and 4 are detached sections, to which reference will be made.

Like letters of reference refer to like parts in the several views.

The nature of this invention relates to an oil-stove; and the object of said invention is to so regulate the supply of oil to the burner that no excess of oil shall accumulate in and about the burner, causing an overflow in proximity to the burning fluid, by which means the stove is rendered safe from accident, and no offensive gas eliminated, as no oil is supplied to the burner faster than it is consumed, the supply of oil being constant and uniform, all of which is more fully described as follows:

In the drawings, A represents a reservoir, in which the oil is held for feeding the burners. Said reservoir is made air-tight, and secured therein is a pipe, B, Fig. 1, a detached view of which is shown in Fig. 4. The lower end of the pipe terminates in a stop-cock, of which C is the chamber, and D the pin or key. The upper end of the pipe is air-tight in its connection with the top of the reservoir. So also is the lower end; or rather the stop-cock is in its connection with the bottom of the reservoir. To the key D of the cock is attached a pipe, E, passing upward in the pipe B, above which it projects, and whereby the key is turned in its seat or chamber. To the side of the stop-cock is attached an air-tube, F, extending upward within the reservoir and terminating a little below the top, as shown in Fig. 1. Said tube communicates with the central pipe E by means of the hole *a* when the key is turned in proper relation to the tube for that purpose.

The stove part of the device consists of a receiver, G, of which H are the wick-tubes. Said receiver is put in communication with the reservoir by a pipe, I, Fig. 1, which may terminate directly within the receiver, or extend to the center thereof, and by a transverse pipe, J, terminate in each of the wick-tubes, as represented in the drawings by the dotted lines *a*." The reservoir A and the receiver are secured in and upon a platform, K, supported on the legs L, and whereby the two are connected to each other, forming a stove easily and readily portable.

In ordinary oil-stoves the supply of oil to the burner is often in excess of the amount consumed, the consequence of which is an overflow of oil on and about the wick-tubes, which are liable to take fire, and are therefore dangerous. Also, the excess of oil caused by the overflow produces an odor and fills the room in which the stove may be, and is therefore offensive and oppressive, for which reason many object to using the stoves.

To avoid these defects is the purpose of this invention, and which is substantially as follows: Oil is filled into the reservoir through the pipe B, into which it is poured through the funnel M around the pipe E. The oil escapes from the pipe B into the reservoir through an opening or aperture, N, Fig. 4, at the bottom of the pipe, immediately above its junction with the chamber of the stop-cock. During this filling of the reservoir the stop-cock is so turned as to bring the hole *a* in open relation to the air-tube F, thereby affording an avenue of escape for the air in the reservoir while being filled with oil. The air passes down the tube through the stop-cock, thence into and up the central tube E to the outside. The reservoir is filled nearly to the upper end of the pipe F. The stop-cock is then turned to the position shown in Fig. 1, thereby bringing the hole *c* in the key of the stop-cock in open relation to the opening *d*, at the same time closing the air-pipe F, through which the oil will run into the pipe I, thence into the receiver G to the wicks.

It will be obvious that as the oil lowers in the reservoir by virtue of its consnmption by the burners, a vacuum will be formed in the reservoir above the oil; hence the oil will cease to flow into the receiver unless supplied with air.

As the oil has ceased to flow from the reservoir into the receiver for want of air, the burners are supplied for a time by the oil that is in the pipe B, which, for the reason of its upper end being open, the pressure of the air on the oil will force it down and into the reservoir, from which it will flow into the receiver. When the oil in the pipe has been consumed so far as to lower it to the aperture N of the pipe B, a small quantity of air will be forced through said aperture into the reservoir, and in the form of bubbles will ascend to the top into the vacuum. Its presence there will cause the oil to flow from the reservoir into the receiver, and raise the oil therein, and which at the same time will rise in the pipe B so far as to cover the aperture N and shut off a further supply of air to the reservoir. As the oil continues to be consumed the vacuum in the reservoir prevents the oil from continuing to flow therefrom; but that which has risen in the pipe B above the aperture N will be forced into the reservoir by the pressure of air above it, there being no corresponding resistance from the body of the oil in the reservoir; hence, all the oil that may be in the pipe above the aperture will flow again into the reservoir and pass with some of the oil therein into the receiver. As the consumption of oil continues, and it lowers in the receiver and in the pipe to the aperture N, air will again pass from the pipe into the reservoir, and cause another flow of oil therefrom into the receiver, and in which it will rise, and at the same time in the pipe B above the aperture N, consequently shutting off a further supply of air to the reservoir. Again, when the oil in the receiver has burned so low as to uncover the aperture in the pipe B, bubbles of air will again ascend in the reservoir to the vacuum, which continues to enlarge as the air flows therefrom until all the oil is consumed down to the aperture N, at which time the reservoir is to be again filled through the pipe B, as before described.

It will be obvious that by this device oil will be supplied to the burners only so fast as it can be consumed; hence no overflow of oil can at any time take place, as the supply to the burners is gradual and uniform.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The pipe B and aperture N, pipe E, and air-tube F, in combination with the stop-cock and reservoir A, substantially in the manner as herein described, and for the purpose set forth.

2. The combination of the pipe B and aperture N, stop-cock and pipe I, reservoir A and receiver G, as and for the purpose specified.

3. The air-tube F and central pipe E, having attached thereto the key of the stop-cock communicating with pipe I, pipe B, and aperture N, as and for the purpose set forth.

4. In oil-stoves, an annular chamber formed between the external and central pipe, with an opening at the base of said chamber, communicating with an oil-reservoir, and the central tube connected with the key of a cock for opening and closing the passage of the pipes F I, as and for the purpose set forth.

CHARLES RUPRECHT.

Witnesses:
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