(No Model.)

2 Sheets—Sheet 1.

J. H. BEAN.

VAPOR STOVE.

No. 282,037. Patented July 31, 1883.

Fig. 1.

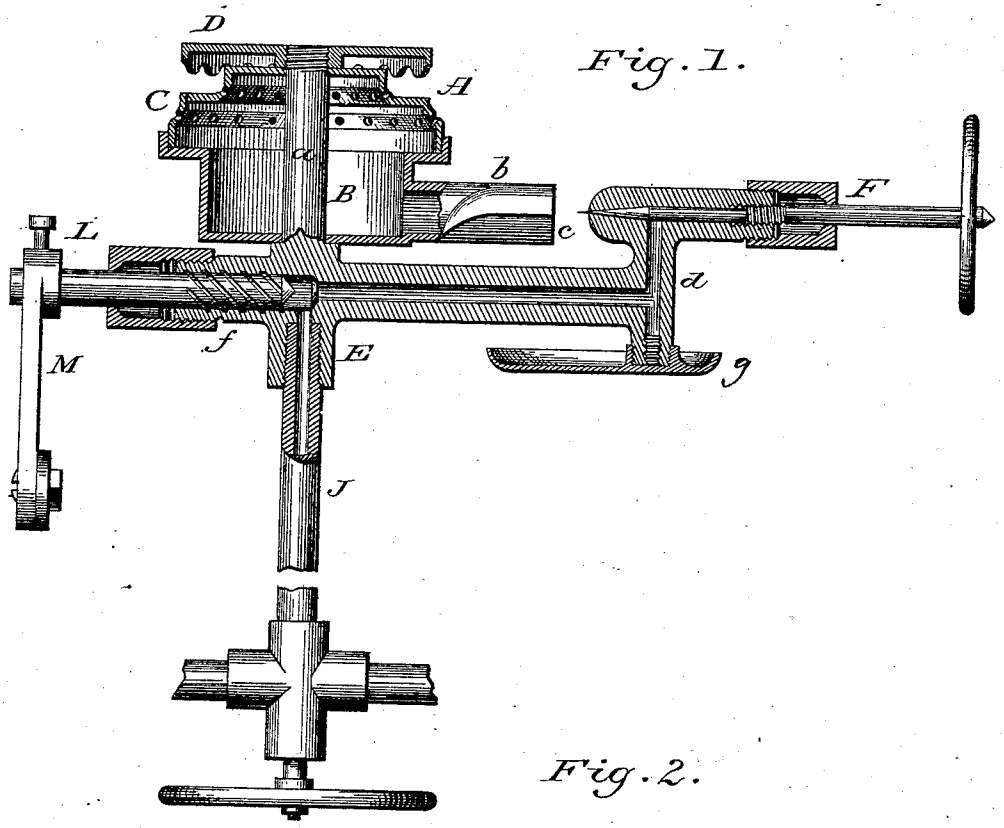
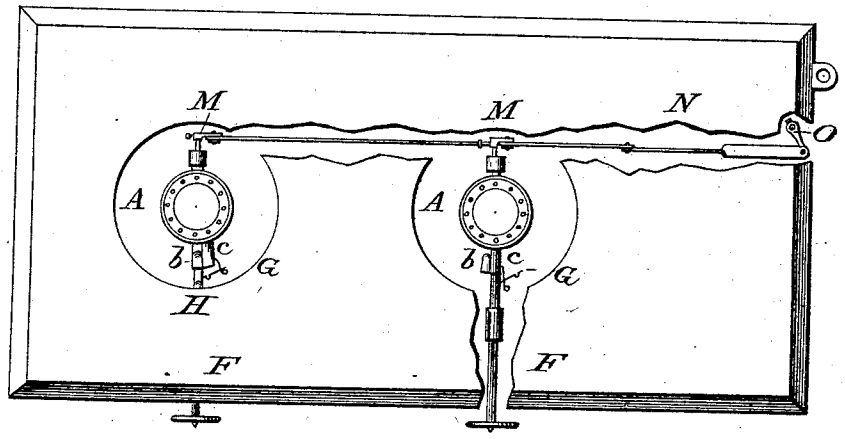


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

J. H. BEAN.

VAPOR STOVE.

No. 282,037. Patented July 31, 1883.

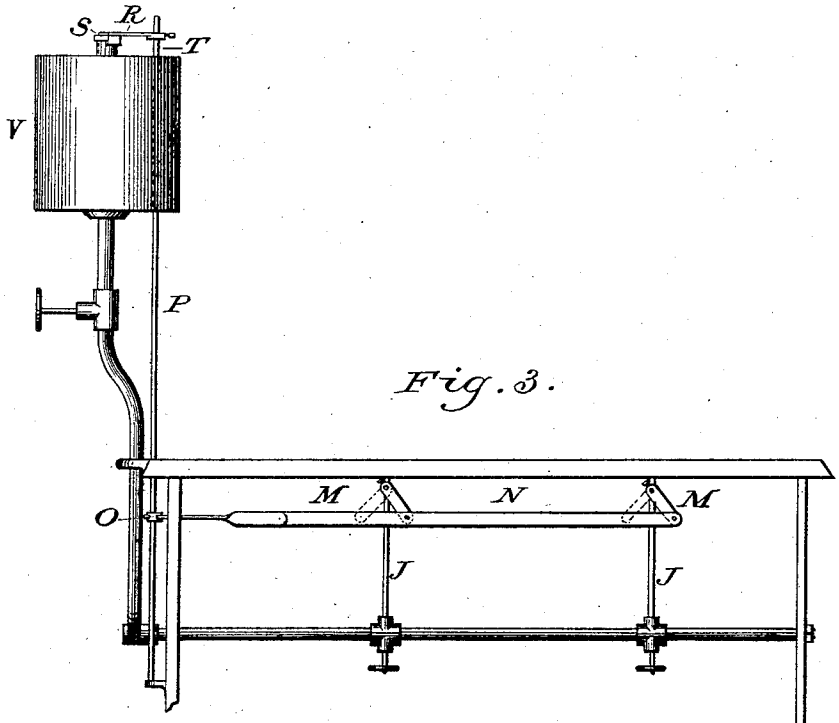


Fig. 3.

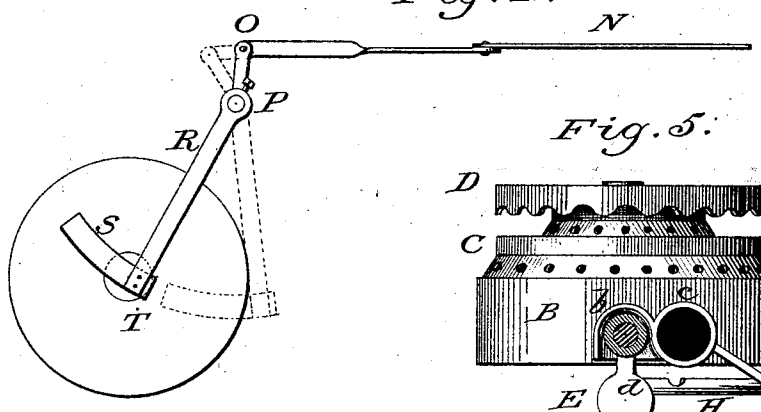


Fig. 4.

Fig. 5.

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UNITED STATES PATENT OFFICE.

JOSEPH H. BEAN, OF CINCINNATI, OHIO.

VAPOR-STOVE.

SPECIFICATION forming part of Letters Patent No. 282,037, dated July 31, 1883.

Application filed December 30, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. BEAN, of Cincinnati, county of Hamilton, and State of Ohio, have invented new and useful Improvements in Gasoline-Burners and an Extinguisher for the Same, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

The object of my invention is to combine with a gasoline-burner for cooking stoves an extinguisher so arranged that the fount containing the gasoline cannot be filled without first extinguishing all the burners. This is done by a new and novel arrangement and combination of parts, which I will describe in detail.

Figure 1 shows a sectional view of the burner and extinguisher, and Fig. 2 a top view of the same in position in a stove, parts of the stove-plate being broken away that the device may be shown more clearly. Fig. 3 is a back view of the extinguisher, with the fount and part of a stove. Fig. 4 is a top view of the fount and parts of the extinguisher. Fig. 5 is a front view of the burner, looking down onto the needle-valve and into the ends of the tubes conveying the vapor from the needle-valve to the burner.

A is the burner, which is composed of three separate pieces, B, C, and D. These are circular and of any desired size, but usually about the size shown in Fig. 1. B is hollow, and open at the top, and has a hole in the bottom, which fits snugly onto the upper arm, *a*, of the valve-seat E. The shape of the part B is plainly shown in Fig. 1. To the front side of B is cast the double tube *b c*, the opening through *c* being straight and communicating with the inside of the burner. *b* is curved at the rear end next the burner, and is preferably cast in a half-circle, as shown in Fig. 5. This tube terminates about a quarter of an inch from the outside of the burner. Near the burner the tubes lie close together, but at the end, near the needle-valve F, they are separated about three-fourths of an inch. On the right-hand side of the tube *c* a lever, G, is securely fastened to the burner, and extends beyond the end of the tube about one and a half inch, and is turned into a ring at the end. Into the neck of the valve-seat E, at the point marked *d*, is fastened a rest, H, about two inches long and curved with the burner. This rest has two notches in it for the purpose of holding in rest the lever G, as shown in Fig. 5. The part C of the burner fits into the top of the part B. This part is hollow, with an opening in the top to fit onto the arm *a* of the valve-seat E. This is perforated with one or two rows of holes for the escape of the vapor, which are so shaped and drilled as to cause the vapor to shoot up at an angle of about forty-five degrees, instead of horizontally, as is the usual plan. On the arm *a*, and above B and C, is screwed the disk D, which is flanged on the under side and the flange made full of teeth. This disk is screwed down just tight enough to allow B and C to be moved freely upon the arm *a* by means of the lever G. The upper row of jets in C burn in contact with the toothed flange of D, which soon becomes red-hot, and rapidly communicates its heat by means of the arm *a* to the body of the valve-seat E, where the gasoline is vaporized.

When the burner is to be lighted, gasoline is allowed to flow into the spoon *g* from the needle-valve F. The burner, by means of the lever G, is thrown round, so as to bring the curved tube *b* in front of the needle-valve F. The lever is made to rest in the outer notch of the rest H, as shown in Fig. 5, and the gasoline in the spoon fired. When the contents of the spoon are nearly burned out, the valve F is slightly opened and the vapor from the heated valve-seat E allowed to flow through the curved tube *b*, which will throw the burning vapor down on the upper side of the valve-seat E and under the burner, heating both in one minute hot enough to keep up a constant flow of vapor, when the burner is again brought round by the lever G, so that the tube *c* is brought in front of the needle F, which will allow the vapor to flow into the burner and out at the perforations, where it is burned. By this arrangement a very small fire will heat the burner and keep it hot when not in use by allowing the vapor to burn at the rear of the tube *b*. The lower arm of the valve-seat E is drilled and tapped to receive the gasoline-supply pipe J. The openings for the gasoline and

vapor are plainly shown in Fig. 1. The rear arm, *f*, of the valve-seat E is drilled and tapped with an unusually quick-moving screw-thread, which receives the quick-moving needle-valve L. This valve is made to shut off the flow of gasoline in the center of the body of the valve-seat E at the point where the gasoline is vaporized, as is clearly shown in Fig. 1.

To the valve L is rigidly fastened, by set-screws or otherwise, the crank-lever M. To this crank is pivoted the swinging bar N. One end of this bar is again pivoted to another crank, O, which is firmly fastened, by set-screws or otherwise, to an upright rod, P, which passes through a hole in one end of the stove-plate, and having its lower end resting in a step fastened or cast to the leg of the stove. To the upper end of the rod P is rigidly fastened a swinging-arm, R, provided with a curved arm, S, at the other end. The arm S is provided with a stop, T, at one end, as shown in Fig. 3. The rod P stands close to the side of the fount, as shown in Figs. 3 and 4. The object of the valve L, crank M, rod P, with the arms R and S, is this: The principal danger of a gasoline-stove is in the filling of the fount, as so many women are in a hurry when cooking and fail to turn off the fire before filling, and hence so many accidents which prove fatal. The extinguishing device just described effectually prevents such accidents by compelling the person filling the fount to first extinguish all the fires. It is done in this way:

Figs. 3 and 4 show the fount supplied and the device in place, the valve L open and the safety-arm S resting on and the stop T against the fill screw-cap of the fount. If it is desired to fill the fount, I grasp the arm R and swing the arm S clear of the screw-cap, which throws the lever O and cranks M M, Figs. 3 and 4, into the position shown in the dotted lines. This firmly closes the extinguisher valve or valves L in the seat E and instantly extinguishes the fire or fires, as the arm S will not release the screw-cap till the valve or valves are firmly closed. To relight the fire it is absolutely necessary to readjust the device, thus securing the screw-cap, as before.

The extinguisher may be operated by a spring, if desired, or the valve L placed in the arm *d*, but the principle is the same, as well as the result—viz., the instantaneous cutting off of the vapor independent of the position of the valve or valves F. To cut off or draw off the gasoline by lowering the fount or by any other means is unsatisfactory and unreliable, for after the burners have been burning for some time there is so much vapor in the supply-pipes that they will sometimes burn for one minute after the fount is turned down and the gasoline drawn from the pipes. By my invention I not only have a very perfect and economical burner, but the extinguishing of the fire before filling the fount is absolute and instantaneous.

Some of the advantages of my invention are as follows: The burner is quickly lighted, can be kept ready for use for many hours by an exceedingly small taper and at little cost, has no joints to be loosened by the heat, utilizes all the heat by the position of the jet-holes, and the absolute security from danger in filling the fount.

I claim—

1. In a gasoline-burner containing a needle-screw, the extinguisher-valve L, provided with a quick-moving screw-thread, and adapted to engage the valve-seat E, in combination with the reservoir and its filling-cap, the arms R S and intervening mechanism, substantially as described, whereby the removal of the arms R S from over the fill-cap operates to instantly extinguish the burner, as and for the purpose set forth.

2. In a gasoline-burner, the combination, with the valve-seat E and its quick-moving extinguisher-valve L, of the lever M, bar N, lever O, rod P, and arms R S, which operate to close the valve and extinguish the flame of the burner when the orifice of the reservoir is uncovered for filling.

3. In a gasoline-burner, the valve-seat E, extinguisher-valve L, needle-valve F, double tube *b c*, lever G, rest H, crank M, bar N, rod P, lever O, arms R S, stop T, fount V, and a supply-pipe, all combined, substantially as and for the purpose set forth.

JOSEPH H. BEAN.

Attest:
EDWARDS RITCHIE,
WM. E. JONES.