(No Model.)

C. V. FLEETWOOD.

AUTOMATIC FEEDING DEVICE FOR PETROLEUM BURNERS.

No. 421,826. Patented Feb. 18, 1890.

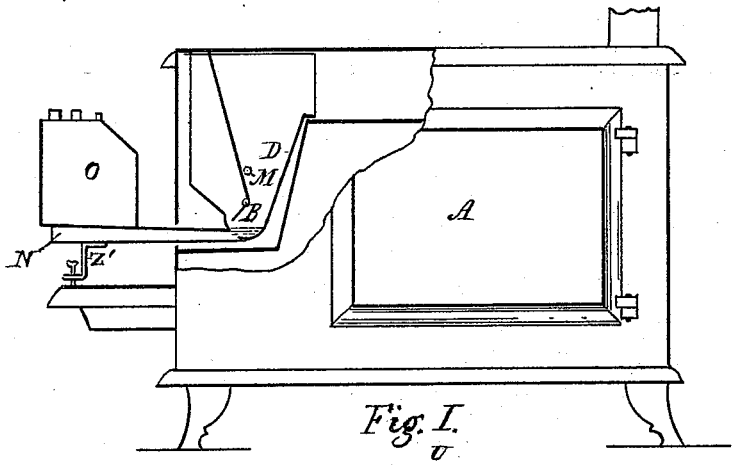

Fig. I.

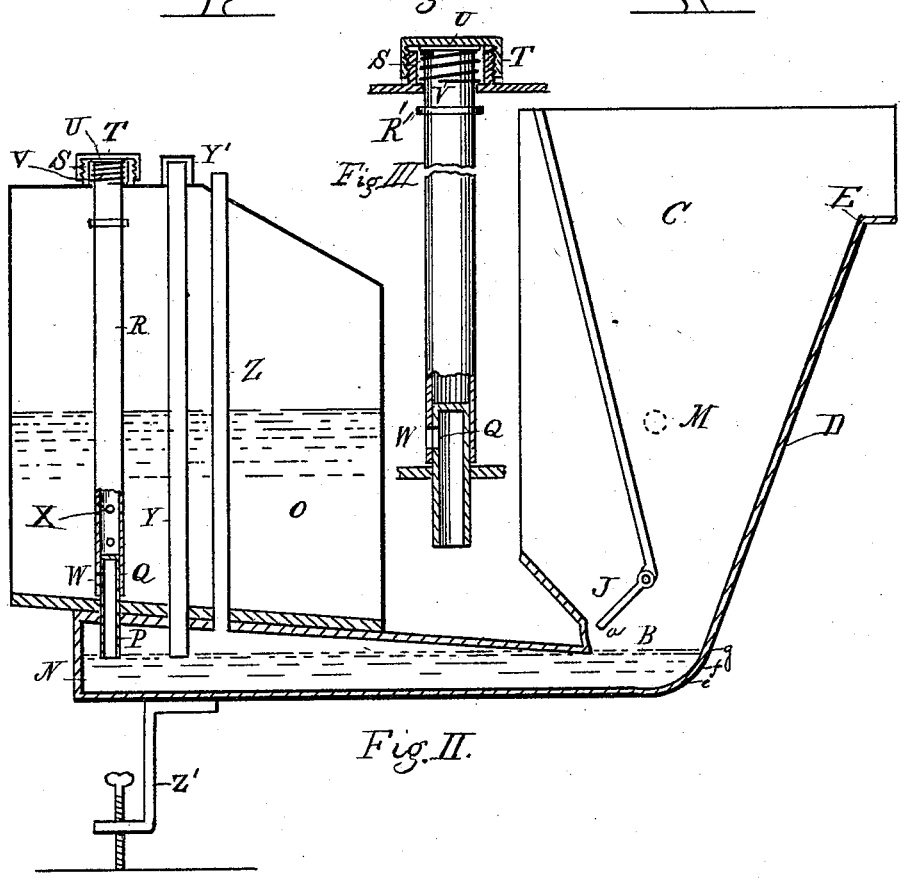

Fig. II.

WITNESSES:

Robert Kirk.

R. S. Millar

INVENTOR:

C. V. Fleetwood.

By J. S. Zerbe

Attorney.

per L. Deane Asso.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

CALEB V. FLEETWOOD, OF CLEVES, OHIO.

AUTOMATIC FEEDING DEVICE FOR PETROLEUM-BURNERS.

SPECIFICATION forming part of Letters Patent No. 421,826, dated February 18, 1890.

Application filed March 9, 1888. Serial No. 266,781. (No model.)

To all whom it may concern:

Be it known that I, CALEB V. FLEETWOOD, of Cleves, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Automatic Feeding Devices for Petroleum-Burners, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a side view of a stove, partly in section, equipped with my petroleum-burner. Fig. 2 is an enlarged side sectional view of the burner and reservoir. Fig. 3 is a view, partly in section, of the oil-feed pipes.

The object of this invention is to provide an automatic feeding device for petroleum-burners.

In the drawings, A represents an ordinary stove having a fire box or chamber across its front end, or the fire-box may be located along one side, as in ranges. The burner is a trough-shaped structure B, having suitable ends, with its rear wall D extended upwardly and backwardly to a point near the upper end, where it is bent back on a horizontal plane, as shown at E. As the other special features of the burner are not included in this application, no reference is herein made to them. The structure thus made constitutes the combustion-chamber for consuming petroleum, and is designed to be placed in the ordinary box of a stove. Each end C of the trough centrally has a lug M, which rests in the suitable sockets (not shown) in the sides of the stove. The entire combustion-chamber is therefore capable of a slight rocking motion, to be limited and regulated by means which I shall now describe.

N represents a horizontally-disposed pipe centrally attached to or permanently cast with the fire-trough on its under side. This pipe extends forwardly and projects through the forward wall of the stove A above the hearth. The front end of this pipe is larger than the rear end, or has a greater vertical depth in the bore, and has mounted thereon and permanently attached thereto a reservoir O, which holds the petroleum. Several pipes communicate with the pipe N from the reservoir. The first pipe is a short one P, located in the bottom of the reservoir, the lower end of which projects below the under side of the reservoir a limited distance, and the upper end is closed and extends up a short distance into the reservoir. Near the base on one side is a hole Q through this pipe. Fitting tightly over this pipe P, but in such a manner as to permit a vertical movement, is another pipe R, which extends from the floor of the reservoir to a point above the top of the reservoir.

S is a screw-threaded rim rising above and integral with the top of the stove, as seen in Fig. 3. A screw-threaded cap T fits over this rim. The upper end of the pipe R has an annular flange U, and interposed between the flange U and the top of the reservoir is a coiled spring V. The pipe has at its lower end a hole W, which coincides with the hole Q of the short pipe when the cap T is screwed on. The pipe R is provided with a series of holes X above the pipe P, so that there may be direct entrance for the oil when the reservoir is being filled through said pipe. The third pipe in the reservoir is a much smaller one Y, located near the pipes P R, the lower end of which projects below the floor of the reservoir the same distance as the pipe P. This pipe extends up to the top of the reservoir and terminates in a dome Y′. Another pipe Z passes vertically through the reservoir, the lower end of which terminates in the bottom of the reservoir, so as to communicate with the tube N, while its upper end projects through the top of the reservoir and has an open end. The reservoir is supported on vertically-adjustable legs Z′, the lower ends of which rest on the hearth.

It will be observed that the combustion-chamber heretofore described is suspended in the hearth on the lugs M, and the branch pipe N, which leads therefrom and extends through the front wall of the stove, has a reservoir attached to its outer end, the reservoir being poised on the vertically-adjustable legs Z′ and capable of a limited motion. The object of this motion is to regulate the quantity of petroleum in the trough B. When the cap T is screwed down, the pipe R is moved down until the hole in its lower end coincides with the hole Q in pipe P, and oil can then flow through these orifices from the reservoir to the pipe N. When the cap T is removed, the coiled spring V causes the

pipe R to move upwardly until the collar R′ on the pipe touches the top of the reservoir within. This closes the orifices Q W and checks the flow of the oil. The cap being removed, the reservoir can be filled by pouring the petroleum into the open upper end of the pipe R, as the holes in this pipe permit the oil to flow into the reservoir. The cap T being returned to its seat, the oil flows through the orifices Q W, and thence into the pipe N and trough B. In the meantime a current of air flows through the pipe Z into the pipe N, and from this latter pipe through the pipe Y into the reservoir O. When the petroleum in the pipe N reaches the lower projecting ends of the pipes P Y, the air is cut off from entrance into the reservoir and the oil ceases to flow into the pipe N. When the fire in the trough B has consumed the petroleum and the surface again falls below or retreats from the lower end of the pipe Y, air is again admitted to the reservoir and the oil again flows into the pipe. By cutting off the supply of air from the outside, which may be done by plugging the pipe Z, the flow of oil from the reservoir is arrested. The flow may be also absolutely cut off by taking off the cap T, as before explained.

As the the surface of the oil within the reservoir is regulated by the height of the lower ends of the pipes P Y, it is obvious that the quantity of oil in the trough can always be regulated by raising or lowering the reservoir through the medium of the adjustable legs Z′.

With this invention the user of the stove has a double means, one complementary to the other, of regulating, first, the amount of petroleum consumed; second, regulating the amount of heat required irrespective of the amount of oil consumed, or, third, regulating the amount of oil irrespective of the heat produced. Thus, if the draft gate or valve J is fixed at the point *c*, the reservoir may be adjusted so that the trough will have either the quantity the surface of which is indicated by *e*, *f*, or *g* without changing the draft-gate J. By this means a large quantity of oil would be exposed, and in each case the same quantity of oxygen would be supplied and no more. If, on the other hand, an economical use of the fuel is required, the reservoir is first adjusted to, say, *f*, and then the draft-gate is swung to that position which will admit the requisite quantity of air to produce a white clear flame and produce perfect combustion.

The particular feature of this invention is in making the oil-reservoir and burner parts of each other or so attached together that the movement of the reservoir affects the burner, as shown.

What I claim as new is—

1. The combination, with the oil-reservoir O and pipe P, having the hole Q, of the pipe R, having at its lower end the hole W and near its upper end the flange R′, and the spring V, whereby the pipe R, when forced upward, is stopped by means of said flange and the flow of oil from the reservoir is automatically cut off, substantially as set forth.

2. The combination, with the oil-reservoir O, mounted on the tube or pipe N, of the pipe P, having the side hole-opening Q, the pipe R, provided with the openings X and W and having the flanges R′ and U, the coiled spring V at the upper end of said pipe, and cap T, fitting over its top and engaging the nipple S, rising from the reservoir, substantially as set forth.

3. The combination of the reservoir O, provided with the air-tubes Z and Y, as described, with the lead tube N, adjustable leg Z′, and the burner, whereby the quantity of oil in the lead tube can be regulated by raising or lowering the reservoir, substantially as set forth.

4. In combination with the oil-reservoir and pipe, the open-end air-pipes Z and Y, passing through the reservoir and communicating, as described, with tube N, and the pipes Q and R, fitting over each other at their ends, whereby air and oil are admitted and oil is automatically fed into the pipe N, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand, this 2d day of March, 1888, in the presence of witnesses.

CALEB V. FLEETWOOD.

Witnesses:

EDWARD BARTON,

R. S. MILLAR.