(No Model.)

B. G. DEVOE & T. A. DULL.

GAS OR OIL STOVE.

No. 401,641. Patented Apr. 16, 1889.

Fig. 3.

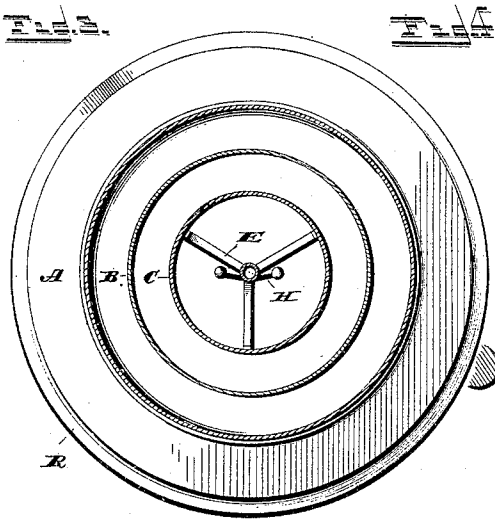


Fig. 4.

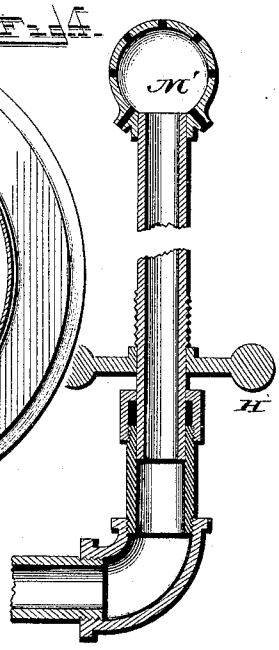


Fig. 5.

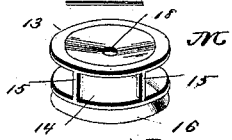


Fig. 6.

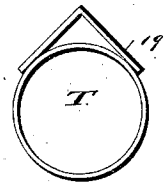


Fig. 2.

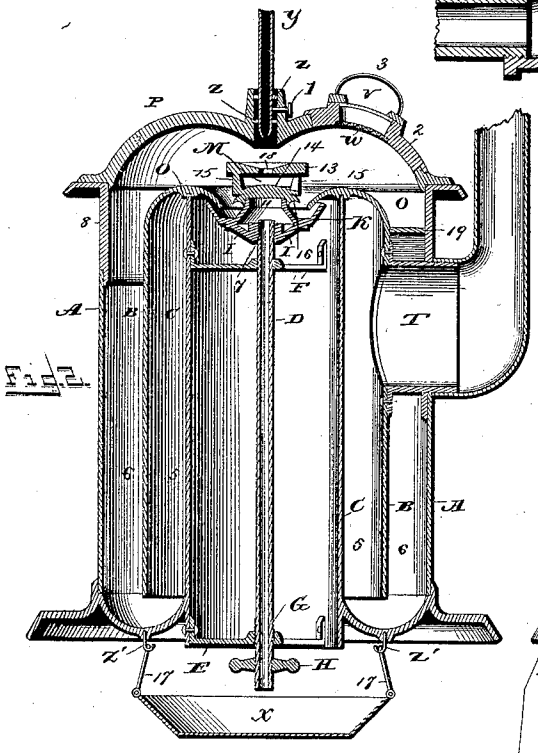
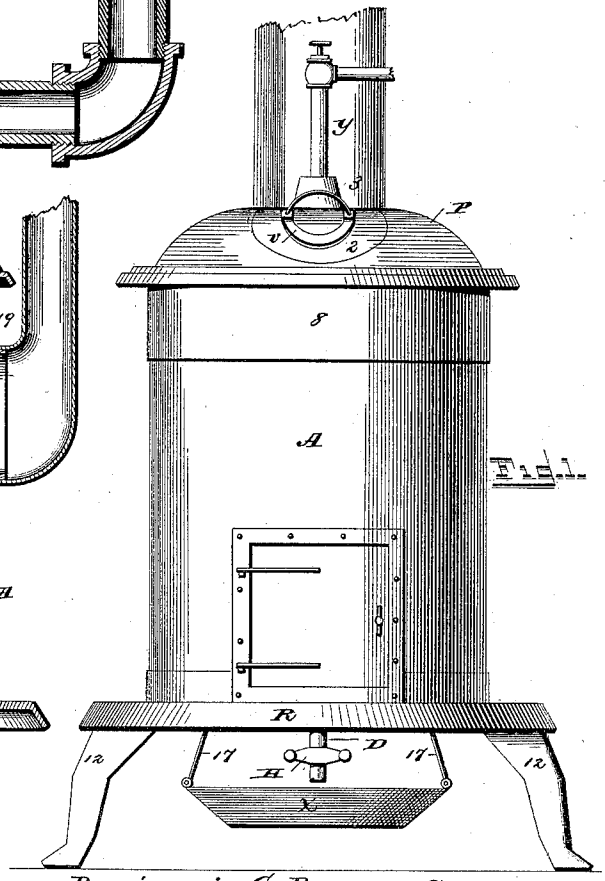


Fig. 1.



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UNITED STATES PATENT OFFICE.

BENJAMIN G. DEVOE AND THOMPSON A. DULL, OF LIMA, OHIO.

GAS OR OIL STOVE.

SPECIFICATION forming part of Letters Patent No. 401,641, dated April 16, 1889.

Application filed November 18, 1887. Serial No. 255,538. (No model.)

To all whom it may concern:

Be it known that we, BENJAMIN G. DEVOE and THOMPSON A. DULL, citizens of the United States, and residents of Lima, in the county of Allen and State of Ohio, have invented a new and useful Gas or Oil Stove, of which the following is a specification.

Our invention relates to an improved stove for burning crude oil, refined oil, or gas.

Figure 1 is a perspective view of our stove; Fig. 2, a sectional view; Fig. 3, a top view of our cylinders and center pipe; Fig. 4, a sectional view of our mixer for gas and connections; Fig. 5, a perspective of our mixer for crude oil; Fig. 6, an end view of thimble and hood T U.

Our invention is intended for furnishing a convenient, economical, safe, and practical means for burning oil, refined or crude, or gas. To accomplish this we arrange three cylinders, A B C, one within the other, the center one opened at the bottom, and having the circular base R, on which the outside cylinder rests and to which the feet are attached. The middle cylinder, B, is curved inwardly at the top, as shown in section, Fig. 2, and has a groove, O, in the bottom of the curve, that rests upon the top of the inner cylinder, C, closing the space 5 between cylinders B C at the top. The cylinder B, however, does not extend clear to the base R, but leaves open connection at the bottom into the space 6, between the cylinders A B. At one side of the stove, near the top, is a thimble, T, passing through the cylinders A B and opening into space 5. On top of this thimble, in the space 6, is a hood that surrounds about one-half of the thimble and extends upward to a sharp edge, as shown in Fig. 8.

Bolted to the inside of the center cylinder are two sets of arms, E F, through the center of which passes a tube or pipe, D. This pipe is screw-threaded where it passes through corresponding threads in the collar of arms E, and has a handle, H, on its lower end, by which it is revolved. On the upper end of this pipe, attached rigidly to it, is a cup or drip-pan, K, supported on the arms I on collar 7, and its upper edges are made to fit against the under side of the curved shoulder of cylinder B, while the inner edge of the cup is adapted to fit in a groove in the mixers M or M′.

The inner cylinders are of cast-iron, but the outer cylinder, A, is of Russia or other thinner iron fastened to a cast collar, 8, on the top of which collar the circular top P of the stove rests, a rabbet in the top allowing part of it to drop inside of the cylinder. This top P is attached also by screw 1 to pipe Y, leading from the tank or oil-supply, the pipe Y passing down through a hole in the top and terminating in a narrowed point. The pipe Y is smaller than the opening through the top of the stove, and is held centered in the opening by lugs Z on three sides of the pipe. On one side of the top is a door, 2, having the screen-window W and isinglass window V therein, and handle 3 thereon.

Underneath the cylinder C, hanging by bails or hooks 17 from hooks Z′, is a drip-pan, X, and attached to the base R are the legs 12.

The mixer M, for burning crude oil is composed of two disks, 13 14, united by three standards, 15, the lower one being solid and having a ring, 16, that fits on the inner edges of the cup K, while the upper one has an opening, 18, in its center for the oil from pipe Y to drop through onto the lower one, 14.

The operation of our stove is as follows: In burning crude oil the mixer M is placed on the center of cup K, the oil is turned on, and allowed to fall in drops from the pointed end of pipe Y through the hole in the top 13 of the mixer M onto the floor or bottom 14 and set fire to. In a short time this floor becomes red hot and the dropping oil is turned to gas on touching the floor 14. Air is admitted through the bottom of the hollow cylinder C, and passing up passes around the edge L of the cup K, and between the standards 15, is admitted to the burning oil between the plates 13 and 14, whence the flame is carried down through the space 6, between the cylinders A B, and up through space 5, between the cylinders B C, and out through thimble T to the stove pipe or exit. On top of the thimble is a wedge-shaped hood, 19, that divides the flame that passes around the thimble and prevents the deposit of soot that might otherwise

occur if the flame were brought into contact with the broad flat top of the thimble, forming an eddy.

The admittance of air around the edge L of the cup K is regulated by turning the screws G on the pipe D, through handle H, thus making the edge L act as an air-valve.

In burning refined oil, the mixer M is taken off and the mixer M′ substituted, when the air from the bottom passes up through the center of the cones, and through the diverging holes to the surface between the cones, and is mixed with the flame from the burning oil which drops upon the upper cone from the pipe Y. The notch shown at the bottom of the globular burner between the first air-passages and the pipe, Fig. 5, is made to fit and set on the edge of the pan K in the same manner as burner 14.

In burning gas, the gas is admitted through the pipe D and burned as it passes through the mixer M, combined with the air admitted from beneath through the holes in the mixer. To change to gas from crude oil, a gas-pipe is attached to the lower end of pipe D in the ordinary manner, the burner 14 is taken off the top, and the hollow globular burner M′ substituted.

The top P is adjustable, also, vertically on the pipe Y to admit a supply of air around the rim Q when desired.

The working parts are readily accessible through the door 2, which simply rests upon the dome of the stove, rabbets thereon setting into the walls of the dome or top.

The object of the inner cylinder being open at the bottom, is to furnish the air superheated to the burner, thus feeding the oil and air to the flame at the same time, and furnishing perfect combustion of the air and carbon at that point. The amount of air fed is regulated by the thumb-screw H on the pipe D, that raises and lowers the pan.

What we claim is—

1. The combination, with the open-ended cylinder C, having base R, of the cylinder B, having a hood to fit over the top of cylinder C, and the cylinder A, fitting on base R, as and for the purpose set forth.

2. The combination of air-cylinder C, drip-pan K, and the pipe D, and means whereby the same may be raised or lowered to regulate the amount of air admitted to the fire, as and for the purpose set forth.

3. In an oil-stove, the combination, with the oil-pipe Y, of the air-valve L and mixer M, as and for the purpose set forth.

4. The combination, with cylinders A B C and burner or mixer M, of the adjustable top or dome P and pipe Y, as and for the purpose set forth.

5. The stove having the dome P, provided with the air-passage, in combination with the drip-pipe Y and mixer M, located within the stove and beneath the pipe, as and for the purpose set forth.

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