No. 746,562. PATENTED DEC. 8, 1903.

J. McFARLANE & C. P. PUSHAW.

OIL BURNER.

APPLICATION FILED FEB. 21, 1903.

NO MODEL.

Fig. 1.

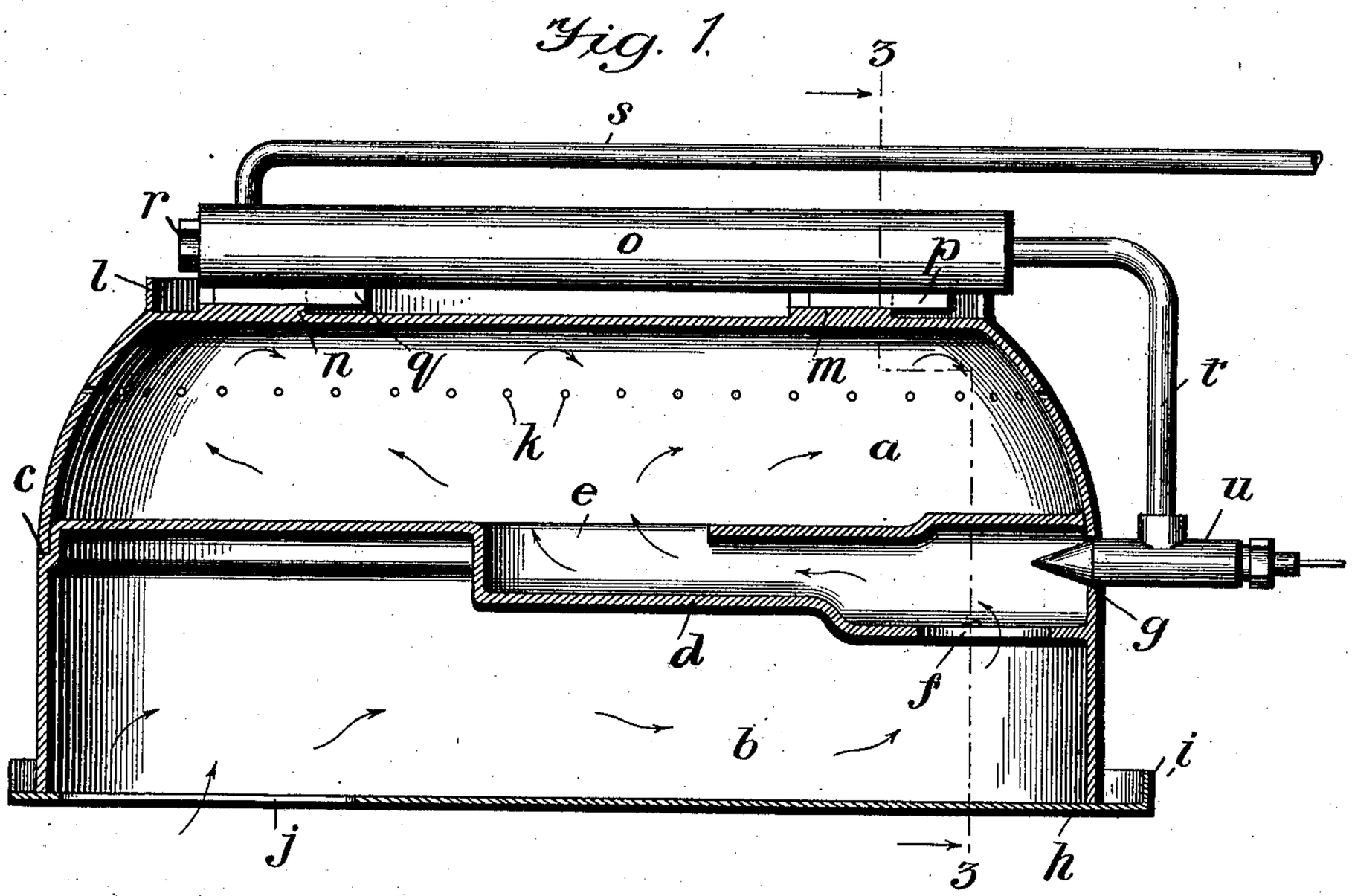
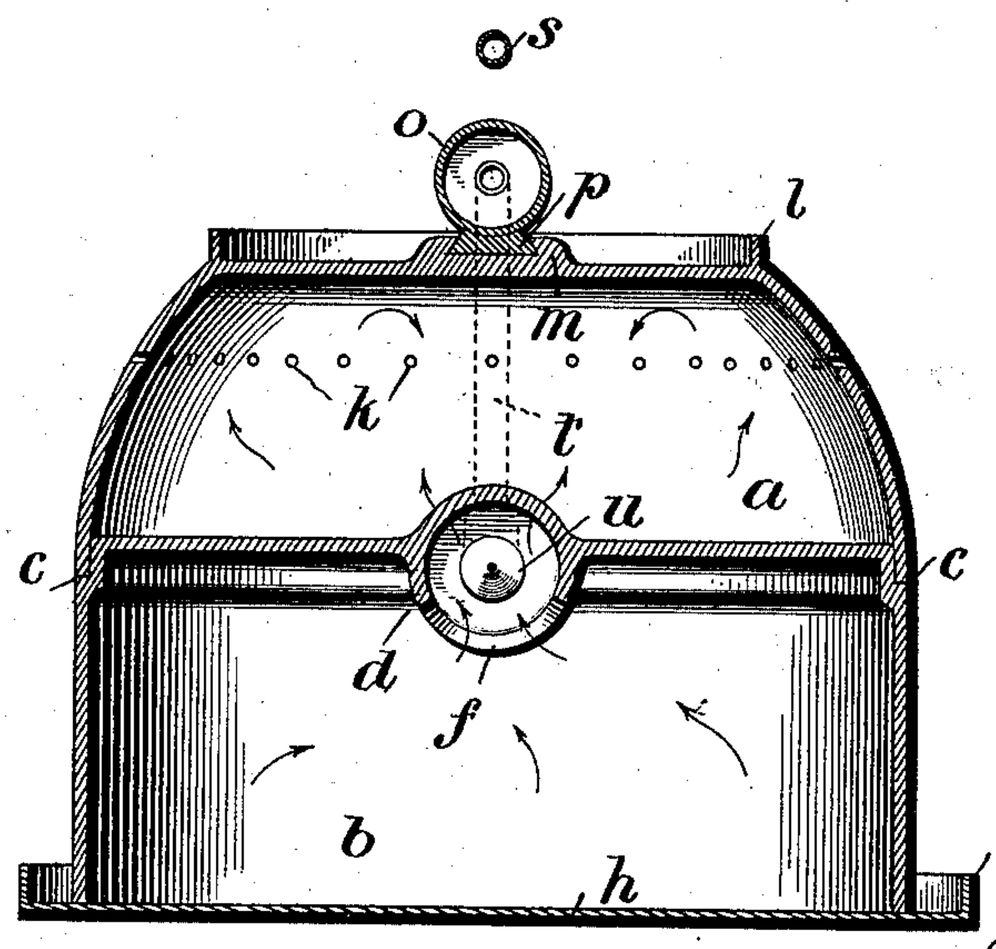


Fig. 2.



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No. 746,562. Patented December 8, 1903.

UNITED STATES PATENT OFFICE.

JOHN McFARLANE AND CHARLES P. PUSHAW, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNORS TO BRILLIANT HYDROCARBON BURNER COMPANY, OF CAMDEN, NEW JERSEY, A CORPORATION OF NEW JERSEY.

OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 746,562, dated December 8, 1903.

Application filed February 21, 1903. Serial No. 144,502. (No model.)

To all whom it may concern:

Be it known that we, JOHN MCFARLANE and CHARLES P. PUSHAW, citizens of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Oil-Burners; and we 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 appertains to make and use the same.

Our invention relates to improvements in oil-burners which are especially adapted to be placed within the fire-box of a kitchen-range or latrobe or other stove, although of course it is not restricted to such uses.

The objects of our invention are to provide a simple and efficient oil-burner composed of few parts, one that can be easily made of cheap material, such as cast metal, and one that will use any variety of petroleum, whether crude or refined, or any of the derivatives of petroleum.

With these objects in view our invention consists of the construction and combinations of parts, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a longitudinal section thereof, and Fig. 2 is a a cross-section on the line 3 3 of Fig. 2.

The main part of the burner is made in two parts—the top *a* and the bottom or base *b*.

In the form shown the burner is substantially rectangular in outline; but we do not restrict ourselves to this form, as the form of the burner depends upon the form of the stove in which it is used.

The bottom *b* of the burner is provided with a ridge *c*, extending completely around the same, forming a corner, in which rests the top *a*.

d represents a short pipe for admitting hot air and vaporized oil into the mixing-chamber between the top and bottom. This pipe *d* is provided with a large orifice *e*, opening upward, and a smaller one *f*, opening downward. It is also provided with another orifice *g* for the reception of the needle-valve.

Preferably the burner rests upon a sheet-metal support *h*, which rests upon the grate of the range or stove. This is usually a piece of sheet metal and is provided with a rim *i* and an opening *j*, through which the air enters through the grate.

The top *a* of the burner is provided with exit-holes *k* for the mixed air and vaporized oil. It is provided with a raised ridge *l* to hold the retort in position. Located near the ends of the top *a* and about centrally thereof are two projections *m* and *n*, each of which is provided with a dovetailed groove.

o represents the retort or oil-heater, which is supported on the top *a*. This retort is preferably made in the form of a tube, extending nearly the whole length of the burner. It may be made of brass, iron, or any cast metal.

The retort is made with two projections *p q*, which fit in the projections *m n* of the top. The retort is fitted into place on the top by simply sliding these projections into the grooves.

r represents a screw-threaded plug in one end of the retort for the purpose of providing access into the interior thereof.

s is a feed-pipe for the oil, and *t* is a pipe delivering the vaporized oil to the vapor-jet nozzle *u*, controlled by a needle-valve, which is of the ordinary construction and is provided with a handle *v*.

The operation is as follows: Oil is fed through the pipe *s* into the retort *o*, where it is vaporized, and is then fed through the pipe *t* through the nozzle *u* into the pipe *d*, where it draws air with it, the air and vaporized oil being mixed in the mixing-chamber and passing out through the holes *k*, where it is ignited.

One important feature of our invention is that the retort carrying the oil-feed pipe and the needle-valve may be adjusted longitudinally of the burner. This causes the needle-valve *u* to project a greater or less distance into the pipe *d*, which varies the amount of air drawn into the mixing-chamber by the vaporized oil on all sides of the vapor-jet. By this simple mode of adjustment (the oil-feed pipe being made of flexible material, such as a small copper tube) the amount of air supplied to the burner can be regulated with great nicety.

Of course after the burner has been in op-

eration a while the whole apparatus becomes heated up, and the air passing into the interior of the burner also becomes heated.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

1. In an oil-burner, the combination with the burner proper, provided with an inlet-opening, of a retort carried by said burner, and a vapor-jet nozzle carried by said retort, said vapor-jet nozzle having a conical end, and said retort being adjustable back and forth upon the burner proper, substantially as described.

2. In an oil-burner, the combination with the burner proper made in two parts and provided with air-inlet openings, of a retort adjustably mounted on said burner, and a vapor-jet nozzle connected to said retort and provided with a conical point, said point being adapted to enter one of the inlet-openings of the burner proper whereby by adjusting said retort the amount of air admitted around the jet-nozzle may be regulated, and means for regulating the supply of vapor through said jet-nozzle, substantially as described.

3. A top for an oil-burner, said top being entirely open at its lower part having exit-holes therein and being also provided with grooved projections and an encircling rim, substantially as described.

4. A base for an oil-burner, having its lower portion entirely open, having a ridge at its upper part on which the top of the burner is adapted to rest and provided with a pipe cast integrally therewith, said pipe opening about centrally of the top of said base and also having two other openings, one for the admission of air and one for the admission of the needle-valve, substantially as described.

5. In an oil-burner, the combination of a flat piece of sheet metal provided with an opening and rim, a base provided with a pipe extending about half across said base, said pipe being provided with three openings, a top resting upon said base, said top being provided with exit-holes, projections having undercut grooves and a rim, a retort adjustably supported on said top and having projections adapted to engage the grooves in said top, a pipe for supplying vapor to one end of said retort, a pipe for delivering vapor from the other end of said retort, a vapor-jet nozzle carried by said last-named pipe, and means for regulating the passage of the vaporized oil through said nozzle, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN MCFARLANE.
CHARLES P. PUSHAW.

Witnesses:
WASHINGTON WATERS,
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