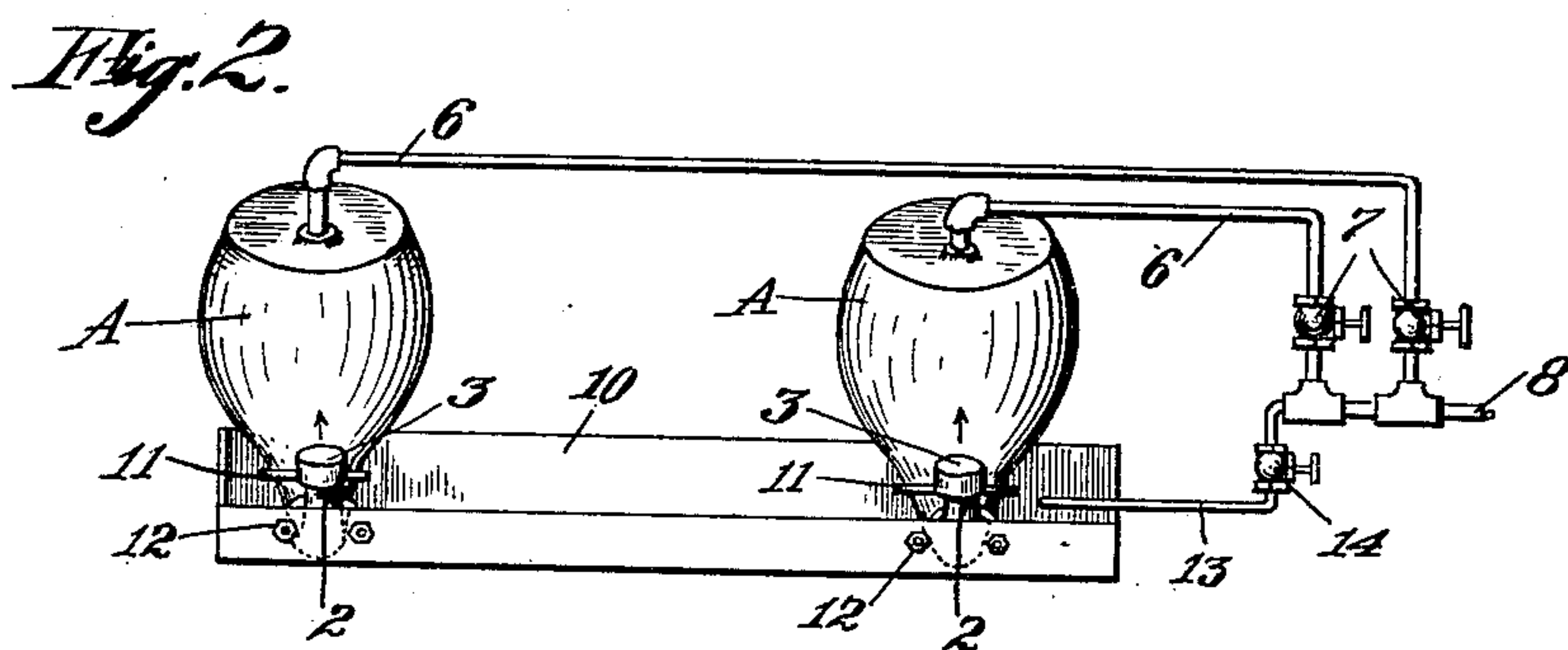
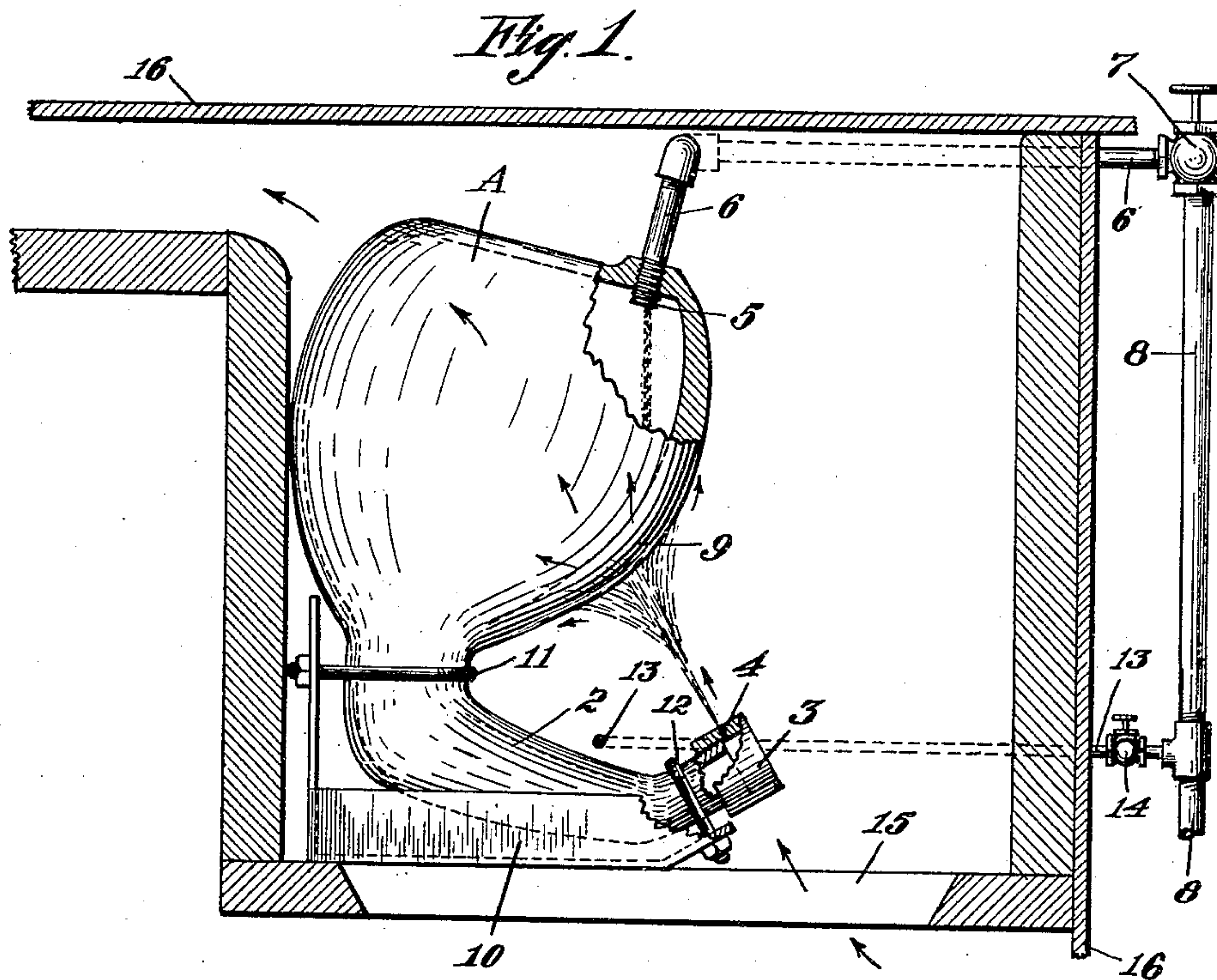


W. A. MACK.
OIL BURNER.
APPLICATION FILED MAY 6, 1909.

935,530.

Patented Sept. 28, 1909.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM A. MACK, OF SALINAS, CALIFORNIA.

OIL-BURNER.

935,530.

Specification of Letters Patent. Patented Sept. 28, 1909.

Application filed May 6, 1909. Serial No. 494,245.

To all whom it may concern:

Be it known that I, WILLIAM A. MACK, a native-born citizen of the United States, residing at Salinas, in the county of Monterey and State of California, have invented new and useful Improvements in Oil-Burners, of which the following is a specification.

This invention relates to improvements in oil or hydrocarbon burners especially designed for use in stoves, ranges and like structures.

It is the object of my invention to provide an oil or hydrocarbon burner that is simple in construction and which can be readily applied to the fire box of stoves, ranges and like heaters, and which is adapted to be used as a unit or in a series.

A further object is to provide an oil burner of such design that the liquid fuel will be completely vaporized and the gas thus formed entirely burned so that there will be little or no smoke.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawing, in which—

Figure 1 is a side elevation of my invention with portions broken away. Fig. 2 is a front elevation showing the invention as used in series.

In the drawings A is the vaporizer or generator, which is of suitable size, shape and material; preferably it is made in the form of an inverted pear shaped retort; that is, having a comparatively large globular chamber terminating in a slender laterally extending neck 2. This neck 2 gradually diminishes in cross section and is turned upward on a slight angle at its outer extremity. A cap 3 is threaded on to the neck 2 and is provided with a fine jet opening at 4. A plurality of jet openings may be employed if desired, but I have found by experiment, that one is sufficient, and that the efficiency of the burner largely depends upon the size of the jet opening which is proportioned to the capacity of the vaporizing chamber A.

The liquid fuel or oil is admitted to the vaporizing chamber A, at 5, through the feed pipe 6, connected by a suitable controlling valve 7 to a main supply pipe 8. The fuel inlet 5, is so located that on admitting the oil through the pipe 6, it falls upon the concaved inner surface of the vaporiz-

ing chamber A, at a point proximate to that part of the generator which is struck by the flaming vapor issuing through the jet opening 4. By this arrangement the oil is immediately subjected to the intense heat of the flame, which plays against the convex outer surface of the vaporizing chamber at 9. The casing or shell of the vaporizing chamber is thickened on the side against which the flame is directed as a means of increasing the durability of the device.

A shallow drip pan 10 is placed under the burner, as shown in Fig. 1. The burner is held in place by suitable means as a strap or U-bolt 11 placed around the upper part of the neck near the lower portion of the vaporizing chamber and secured to the back of the pan 10 and a similar strap 12 is fastened around the neck 2 to the front of the pan 10.

Fuel for starting the burner is conveyed to the pan 10 through the oil bypass pipe 13 by opening the cock 14 which admits oil from the main supply pipe 8.

In operation the necessary quantity of oil required to generate sufficient heat in the vaporizer A, is admitted to the pan 10 through the cock 14, and there ignited; the cock 14 then being closed. When the generator or vaporizer becomes sufficiently heated, the liquid fuel is admitted through the inlet 5 by opening the cock 7. The oil on striking the intensely heated surface of the generator at 9, becomes immediately vaporized; the gas thus formed fills the globular chamber A and is forced down through the narrowing neck 2 and out the jet hole 4, and mixes with the air in the fire box to effect combustion. The gas or vapor on being ignited, forms a flame of great heat which on striking against the globular surface on the under side of the vaporizing chamber is spread outwardly, so as to encompass the vaporizer A; and thus effect the complete vaporization of the fuel oil as long as the cock 7 remains open. The necessary amount of air required to insure complete combustion is admitted to the burner through the grate 15 of the stove or range 16, in which the device is mounted. The pan 10 rests upon the grate 15 in such manner that the air is admitted behind the jet opening and in a direction corresponding to that of the flame.

I have found that by projecting the flame against the vaporizer directly in line with

the fresh air inlet and the outlet to the flue, the combustion of the gases is greatly facilitated.

The heat generated by this form of oil burner is very intense and in most cases but one burner is required in the fire box of an ordinary stove or range; but the device is so designed that any number of independent burners can be installed in one fire box as desired, the arrangement of which is shown in Fig. 2.

Where a plurality of burners are used, it is advisable to connect each one separately to the main fuel supply pipe 8, so that one or more burners may be used at one time as desired.

Having thus described my invention, what I claim and desire to secure by Letters-Patent is—

1. An oil burner comprising a retort made substantially pear-shaped, having a lower end provided with an elongated laterally extending neck the outer extremity of which is slightly curved, a cap fitted to the end of said neck and having a perforation arranged to direct the vapors and flame against the retort, and means for feeding oil into the retort.

2. An oil burner comprising a retort made substantially pear-shaped, having a lower end provided with an elongated laterally extending neck the outer extremity of which is slightly curved, a cap fitted to the end of said neck and having a perforation arranged to direct the vapors and flame against the

retort, and means for feeding oil into the retort, the side of the retort adjacent to said perforation and receiving the impact of the flame being thickened.

3. The combination with a fire box, of an oil burner therein, said burner comprising a retort which is substantially pear-shaped, the lower end of the retort formed with an elongated laterally extending neck portion with the end of the neck slightly curved up, a cap screwing on to the end of the neck to direct vapors and flame against the retort, and means for feeding the oil to be vaporized into the top of the retort.

4. The combination with a fire box, of an oil burner therein, said burner comprising a retort which is substantially pear-shaped, the lower end of the retort formed with an elongated laterally extending neck portion with the end of the neck slightly curved up, a cap screwing on to the end of the neck to direct vapors and flame against the retort, and means for feeding the oil to be vaporized into the top of the retort, and a drip pan having a back and front and U-bolts encircling the neck of the retort and secured to the drip pan to hold the retort in position.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM A. MACK.

Witnesses:

FRANK S. CLARK,
JET L. TOWT.