

F. P. SPANGLER,
OIL BURNER.
APPLICATION FILED APR. 1, 1918.

1,296,708.

Patented Mar. 11, 1919.

Fig. 1.

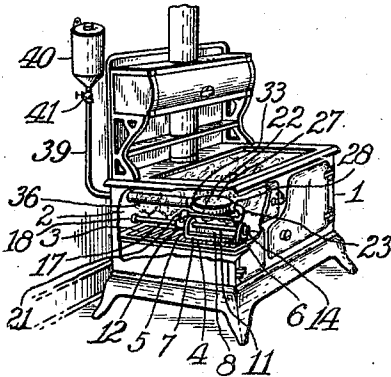


Fig. 2.

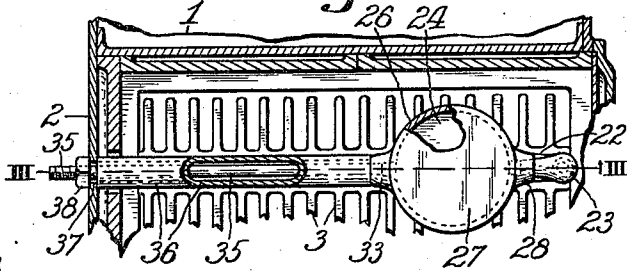


Fig. 3.

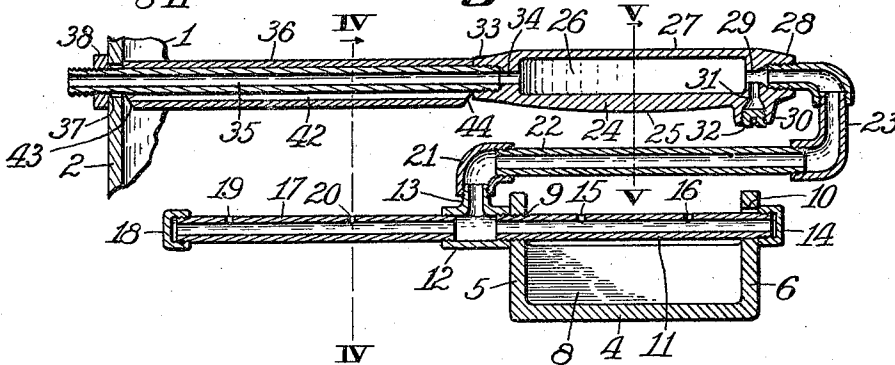


Fig. 4.

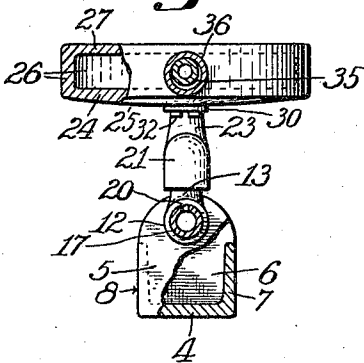


Fig. 5.

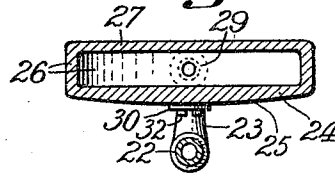


Fig. 6.



WITNESS:

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UNITED STATES PATENT OFFICE.

FRANKLIN P. SPANGLER, OF INDIANAPOLIS, INDIANA.

OIL-BURNER.

1,296,708.

Specification of Letters Patent.

Patented Mar. 11, 1919.

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To all whom it may concern:

Be it known that I, FRANKLIN P. SPANGLER, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Oil-Burner, of which the following is a specification, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon.

This invention relates to the type of oil-burner that is designed for converting oil or volatile liquid by means of heat into gas or gaseous vapor to be consumed by means of the burner whereby to obtain heat, the invention having reference more particularly to an oil-burner of the above-mentioned character that is adapted to be used in various types of stoves or ranges.

An object of the invention is to provide an oil-burner which shall be of simple and inexpensive construction; and which shall not be liable to derangement or to cause trouble in operation because of deposits of carbon in the oil or gas passages thereof.

Another object is to provide an improved oil-burner for stoves, furnaces or ranges which shall be so constructed as to be unitary and adapted to be readily applied to various types of stoves or ranges which may have been constructed for utilizing coal, wood or other kinds of fuel.

A further object is to provide an improved safety oil-burner which shall be of such design as to be strong, self-supporting, adapted for utilizing the grade of oil commonly known as kerosene which may be cheaply obtained generally throughout the country, and permit heating and cooking at small cost and without danger or damage or injury due to explosions.

With the above-mentioned and other objects in view, the invention consists in an oil-burner provided with a generator having a broad and flat bottom and arranged above the oil-burner, and a super-heater arranged between the oil-burner and the generator, the oil-burner being provided with a priming-pan which preferably is rigidly secured to the oil-burner to support it. The invention consists also in an improved supplying-pipe in which the oil may be heated in passing to the generator. Also, the invention consists further in the novel parts and combinations and arrangements of parts as hereinafter particularly described and further defined in the accompanying claims.

Referring to the drawings,—Figure 1 is a perspective view of a cooking-stove or range equipped with the new oil-burner as an illustration of the application of the invention to supply heat for cooking purposes, being one of the various uses to which the burner may be put; Fig. 2 is a top plan of the oil-burner arranged in the fire-box of the range; Fig. 3 is a vertical central section of the new burner unitarily constructed; Fig. 4 is a fragmentary section on the line IV—IV on Fig. 3; Fig. 5 is a fragmentary section on the line V—V on Fig. 3; and, Fig. 6 is a bottom plan view of a part of the combined oil-supplying and heating-pipe.

Similar reference characters on the different figures of the drawings indicate corresponding elements or features of construction herein referred to in detail.

In the drawings the numeral 1 indicates a range or cooking-stove and 2 the rear end of the fire-pot or box having the usual fire-grate 3 on which to burn the required fuel. When it is desired to apply the oil-burner the fire-grate may remain in place and conveniently support the oil-burner in proper position.

The priming-pan required for putting the oil-burner into operation is constructed as a supporting base for the oil-burner and comprises a flat bottom 4, end walls 5 and 6 and side walls 7 and 8 connected together and to the bottom. The end walls 5 and 6 preferably are taller than the side walls and have apertures 9 and 10 therein respectively, the aperture 9 preferably being screw-threaded. A burner-pipe 11 is horizontally arranged in the apertures 9 and 10 and extends through the end walls, being preferably screwed into the aperture 9 or otherwise rigidly secured to the priming-pan or base. A pipe-fitting is connected to one projecting end of the burner-pipe and preferably has contact with the outside of the wall 5. When two burners are desired in a range or stove the pipe-fitting is in the form of a T 12 and is arranged with the side neck 13 thereof vertical. The opposite end of the burner-pipe 11 has a cap 14 thereon which preferably is in contact with the outside of the wall 6, so that the burner-pipe may be secured in place, or more firmly locked, by means of the T and the cap. The uppermost portion of the wall of the burner-pipe 11 has one or more jet-holes 15 and 16 therein. A burner-pipe 17 is connected to the T

12 and has a cap 18 on its end, and the uppermost portion of the wall of the burner-pipe has one or more jet-holes 19 and 20 therein. An elbow 21 is connected to the neck or side branch 13 and is supported thereby. A superheater-pipe 22 is horizontally arranged above the burner-pipe 11 and connected at one end to the elbow and supported thereby, a return L or "gooseneck" fitting 23 being connected to the opposite end of the superheater-pipe so as to extend upwardly and partially over the superheater-pipe.

An improved generator is provided which comprises a disk-shaped bottom 24 which preferably has a convex under side 25, a circular wall 26 on the bottom and a top or cover 27 upon the wall. The wall of the generator has a boss 28 thereon provided with an outlet port 29, the boss being connected to and supported by the fitting 23 so as to support the generator horizontally with the bottom 24 above the superheater-pipe 22. The boss 28 preferably has a bottom extension 30 provided with an outlet port 31 which in the present case is closed by a plug 32. The generator thus is adapted to be conveniently arranged in an upright heating-stove and permitting the plug to be transferred to the main portion of the boss 28 so that a pipe can be connected to the extension 30 if desired. The wall 26 has a boss 33 thereon provided with an inlet port 34 so as to be arranged opposite to the port 29, and a supply-pipe 35 is connected to the boss and in the present case is arranged horizontally above the burner-pipe 17 to obtain the benefit of the flame from the burner-pipe but is protected from excessive heat by an armor or casing 36 which directly serves the purpose of a spreader for the flame. The supply-pipe 35 is inserted through a hole 37 into the wall 2 of the range or stove and preferably has a lock-nut 38 thereon arranged against the outside of the wall; in such case the casing 36 being in contact with the inside of the wall and also with the boss 33 to firmly secure the apparatus which is principally supported by the priming-pan upon the fire-grate 3. A feed-pipe 39 is connected with the supply-pipe 35 and is supplied with oil from a reservoir 40 through a regulating valve 41. The casing 36 is greater in diameter than the supply-pipe 35 and hangs on the latter so as to provide an air space 42 in the lower portion of the casing, the ends of the casing preferably having notches 43 and 44 to admit atmospheric air thereto, for protecting the under portion of the supplying-pipe from excessive heat to prevent deposits of carbon from the oil passing through the supplying-pipe, while obtaining an advantage derived by moderately heating the oil before it enters the generator.

In practical use the oil is let into the

supply-pipe 35 after a small quantity of combustible fluid or other substance has been placed in the priming-pan and ignited so as to produce a flame whereby the bottom 24 of the generator is heated. As the oil enters the generator it spreads out thinly upon the bottom 24, and there becoming rapidly heated is converted into gaseous fluid which flows out through the port 29, and then through the superheater-pipe 22 in which it becomes superheated in its passage to the burner pipes to be ignited as it escapes from the jet-holes. The flame from the burner-pipe 11 is partially spread by the superheater-pipe 22 which is heated by the flame, and the flame is further spread out by the bottom of the generator, so that an advantageous flame is obtained with a high degree of heat above the generator. The flame from the burner-pipe 17 not only heats the supply-pipe 35 through the casing 36 and the air-chamber 42 but is spread out by the casing sufficiently to be utilized in the rear portion of the range or stove.

Having thus described the invention, what is claimed as new is—

1. An oil-burner including a generator comprising a side wall, a bottom connected to the side wall and having a convex under side, and a top connected to the side wall, one portion of the side wall being provided with a projecting supply-port boss, the opposite portion of the wall being provided with a projecting dual outlet-port boss.

2. An oil-burner including two burner-pipes, a superheater-pipe arranged above one and connected with both of the burner-pipes, a generator arranged above and connected with the superheater-pipe, and a supply-pipe arranged above the remaining one of the burner-pipes and connected with the generator.

3. In an oil-burner, the combination of a priming-pan comprising two wall portions having each an aperture therein, the aperture in one of said portions being screw-threaded, a burner-pipe arranged in and extending through said apertures, one portion of the burner-pipe being screwed through said screw-threaded aperture, a cap connected to one end of said burner-pipe, a T-fitting connected to the opposite end of said burner-pipe, an elbow connected to said T-fitting, and a conduit connected to said elbow and supported thereby above said burner-pipe.

4. In an oil-burner, the combination of a priming-pan, two burner-pipes connected together end to end, one of the burner-pipes being secured to the priming-pan, a superheater-pipe arranged above said one of the burner-pipes and having connection with both, a hollow generator arranged above the superheater-pipe and connected therewith, a supply-pipe arranged above the remaining

one of the burner-pipes and connected with the generator, and a casing loosely encircling the supply-pipe.

5 5. In an oil-burner, the combination of a priming-pan comprising a flat bottom and a side wall, two opposite portions of said wall having each an aperture therein, a burner-pipe arranged in and extending through said apertures, a cap connected to one end of
10 said burner-pipe, a pipe-fitting connected to the opposite end of said burner-pipe, an elbow connected to said pipe-fitting, a conduit connected at one end to said elbow and supported thereby, a return-elbow connected

to the opposite end of said conduit and sup- 15
ported thereby, a generator comprising a bottom and a side wall and also a top, one portion of the side wall of said generator being connected to and supported by said return-elbow, and a supply-pipe connected 20
to the opposite portion of the side wall of said generator.

In testimony whereof, I affix my signature in presence of two witnesses.

FRANKLIN P. SPANGLER.

Witnesses:

E. T. SILVIUS,

F. M. ROEDER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."