No. 676,011. Patented June 11, 1901.

P. B. SPAULDING.

OIL GAS BURNER.

(Application filed July 23, 1900.)

(No Model.)

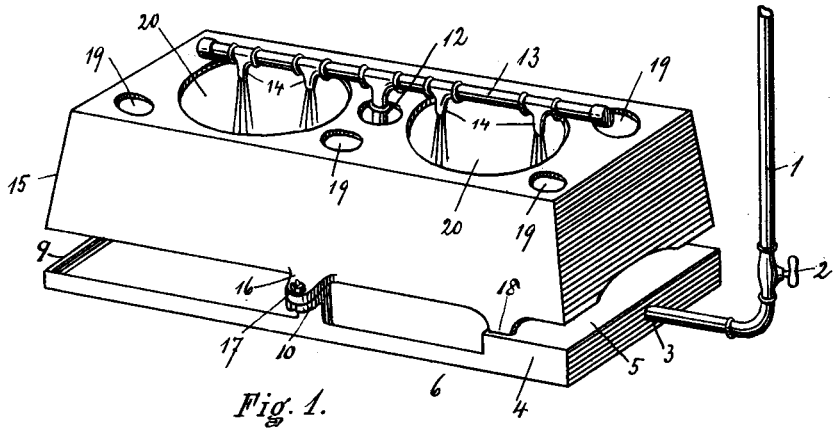


Fig. 1.

Fig. 2.

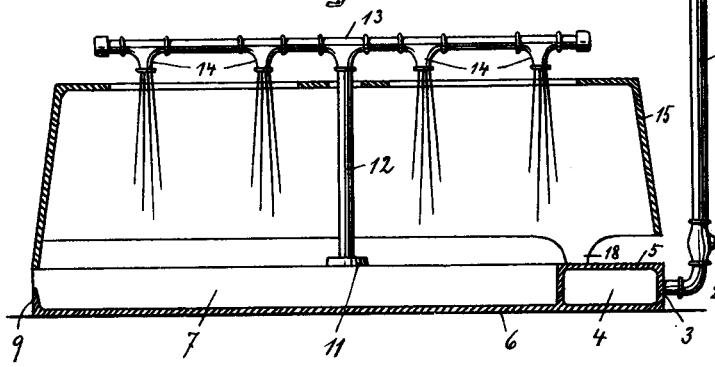
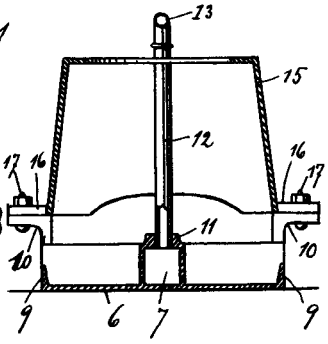


Fig. 3.



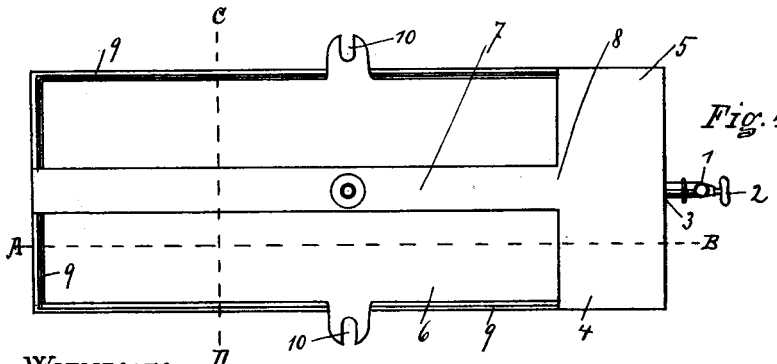


Fig. 4.

WITNESSES.
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UNITED STATES PATENT OFFICE.

PHILO B. SPAULDING, OF NEW HARTFORD, NEW YORK.

OIL-GAS BURNER.

SPECIFICATION forming part of Letters Patent No. 676,011, dated June 11, 1901.

Application filed July 23, 1900. Serial No. 24,490. (No model.)

To all whom it may concern:

Be it known that I, PHILO B. SPAULDING, a citizen of the United States of America, and a resident of New Hartford, Oneida county, New York, (whose post-office address is New Hartford, Oneida county, New York,) have invented certain new and useful Improvements in Oil-Gas Burners, of which the following is a specification.

My invention relates to an oil-gas burner; and it consists in the combination and arrangement of the parts hereinafter pointed out and claimed.

The object of my invention is to employ the vapor of oil for use inside of fire-boxes of stoves or other heating devices by means in which I employ about eight per cent. of oil and ninety-two per cent. of air and produce an oil-vapor which may be burned economically for domestic and other uses.

In the drawings, Figure 1 is a perspective view of my improved burner. Fig. 2 is a vertical longitudinal section thereof through the base and hood, the line A B, Fig. 4, indicating the plane of the section through the base. Fig. 3 is a cross-sectional view through the burner, the line C D, Fig. 4, indicating the plane of the section through the base. Fig. 4 is a top plan view of the base portion, the hood being removed and pipes broken away.

In the drawings similar numerals refer to corresponding parts in the several views.

I supply the oil through pipe 1 from an elevated tank, the flow of oil being controlled by stop-cock 2 and the pipe being connected at 3 with the generator. I provide generator 4, which in this instance is placed horizontal; but it may be of any desired form and supported vertically in the air-hood or generating-chamber, or it may be located substantially vertical to the base and form, if desired, a part of the end of the hood. My generator consists in rectangular space. (Best illustrated in the drawing Fig. 2.) I provide in the generator-base 6 a lead or conduit 7, opening into or leading out of generator 4 at 8 and which runs substantially the remaining length of the base in the center thereof and opening directly from the generator, as best illustrated in Fig. 4. In this instance the lead or conduit is substantially square, as best illustrated in Fig. 3. The conduit, however, could be in any other shape or form and, if desirable, instead of being rectangular may be in the form of an inverted V, so that the flame may strike on its apex and be deflected downward and outward. I surround the base 6 by an upward projecting flange 9, which forms in the base and on each side of the lead or conduit 7 a depression which will catch and retain the oil when the burner is started. On opposite sides of the base 6 I provide ears 10, which are slotted, so as to permit without strain the expansion or contraction of the base, which is preferably formed of cast-iron cast on a core or cores for forming the generator and lead or conduit. Leading out of the conduit 7 at 11 I provide a vertical stand-pipe 12, which has at its upper extremity a cross-head 13, in turn provided with oil or gas burners 14. In practical operation one or more burners may be employed on either side of the stand-pipe 12. The cross-head in this instance is tubular, with its outward ends closed.

On the base 6 I mount air-hood 15, provided with projecting ears 16 on its oppositely-disposed sides, which register with the slotted ears 10 on the base and which are likewise slotted, so that the air-hood may be secured to the base by bolt and nut 17 and both the air-hood and base made to expand or contract without undue strain. In this instance the hood 15 is rectangular in form and substantially of the same dimensions as the base. On either side of the walls of the hood I provide legs 18, which rest upon the base or on the horizontal surface of the generator and serve to secure stability in the hood and to prevent undue strain on the projecting ears of the hood and the base and to permit free expansion and contraction of the base. The hood is mounted on the base in such a way as to leave ample space between the base and the bottom of the hood for the passage of air. The hood is shown as having vertical converging sides. In the top of the hood are provided air-holes 19 in sufficient numbers as may be desired and are provided for the free passage of air, as also are the large burner-openings 20, which permit at the starting of the burner the oil to drop onto the conduit below and after the burner is in op-

eration permits the flames to be projected freely downward through the openings onto the top of the conduit 7. The spaces in the top of the hood and between its lower edge and the base permit the free passage of air through the hood or generating-chamber and permit the heat to rise freely.

By turning the stop-cock the oil is admitted into the generator, whence it passes directly through the conduit up through the stand-pipe into the cross-head through the burners, whence it falls onto the upper surface of the conduit and drips into the depressions of the base, where it is lighted. The heat caused thereby strikes the conduit on three sides and also heats the generating-chamber, so that gas is generated more rapidly than in any device of this character which I have seen or heard of, and by this means the vapor is rapidly generated and passed to the burners, where it is consumed and maintains the heat upon the conduit and generating-chamber.

My device, as shown in the drawings and described, is adapted for use in the fire-box of an ordinary cooking-stove, a range, a heater, or any similar structure.

Modifications of construction will readily suggest themselves without constituting a departure from the spirit of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

An oil-burner consisting in the combination of the base formed with the upwardly-projected edge flanges and the generating-chamber and straight conduit, said chamber arranged transversely across an end of said base and joining said flanges and projected above the plane of the top surface of the base, said conduit projected above the plane of the top surface of the base and at one end opening into said chamber and from thence extending longitudinally of the base at a distance from both side flanges thereof, whereby the top and sides of the chamber and conduit are exposed to the flame and initial-lighting-oil receptacles are formed between said flanges and the side walls of said chamber and conduit, a pipe rising from said conduit and having burner-pipes above the conduit, and the hood having openings and arranged so that the flame is directed down onto the conduit and chamber, substantially as described.

Signed by me at Utica this 20th day of July, 1900.

PHILO B. SPAULDING.

Witnesses:
VERNON W. LEE,
PETER P. SMITH.