

W. P. C. STOUT & H. H. ANDRESS.
BURNER.

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1,059,502.

Patented Apr. 22, 1913.

Fig. 1.

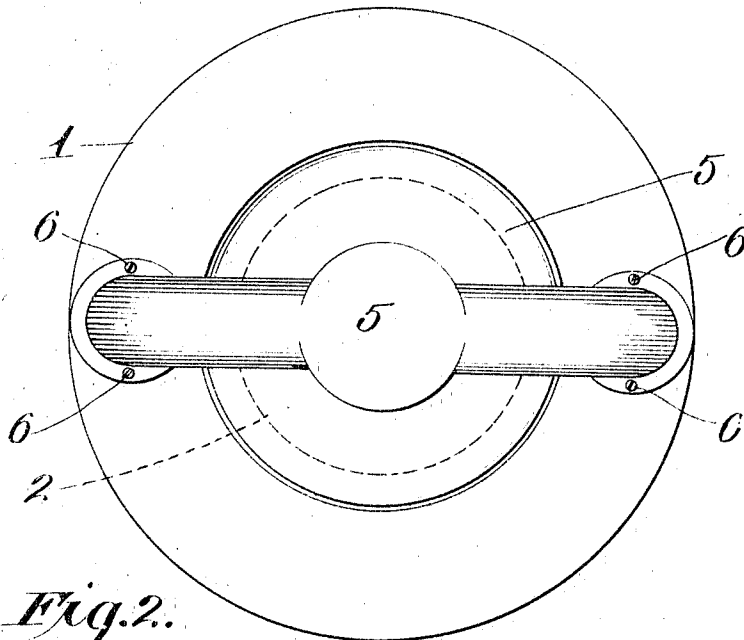


Fig. 2.

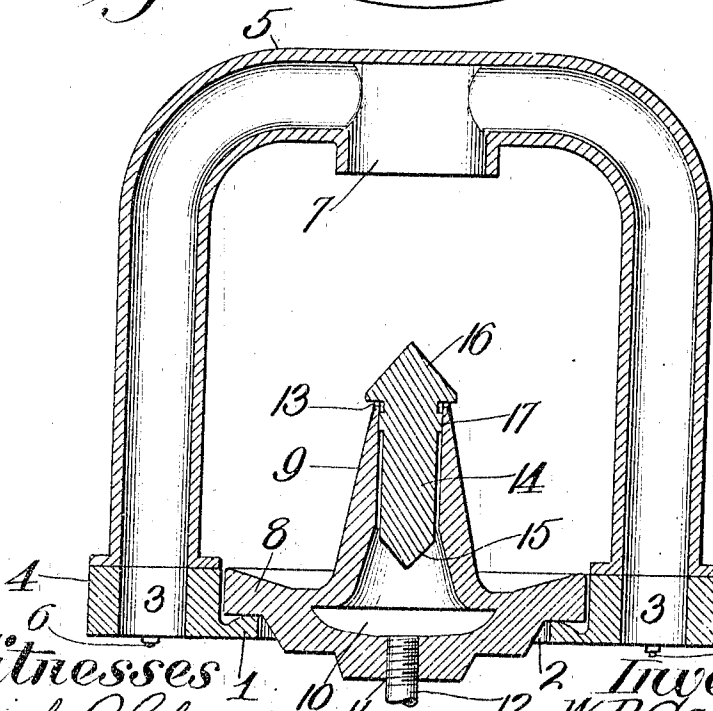
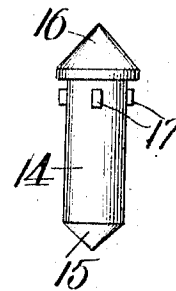


Fig. 3.



Witnesses
Frank R. Glon
A. C. Rodgers.

Inventors:
W. P. Case Stout.
H. H. Andress
By George Y. Thorpe Atty.

UNITED STATES PATENT OFFICE.

WAREHUM P. CASE STOUT AND HERBERT H. ANDRESS, OF KINSLEY, KANSAS.

BURNER.

1,059,502.

Specification of Letters Patent.

Patented Apr. 22, 1913.

Application filed April 8, 1912. Serial No. 689,365.

To all whom it may concern:

Be it known that we, WAREHUM P. CASE STOUT and HERBERT H. ANDRESS, citizens of the United States, residing at Kinsley, in the county of Edwards and State of Kansas, have invented certain new and useful Improvements in Burners, of which the following is a specification.

This invention relates to burners and more especially to devices of that class whereby vapor is generated from oil and mixed with air to form a combustible gas which in burning produces an intense heat, our primary object being to produce a simple and efficient burner whereby consumption of the gas is attained without producing visible smoke or soot.

With this general object in view the invention consists in certain novel and peculiar features of construction and combination of parts as hereinafter described and claimed and in order that it may be fully understood reference is to be had to the accompanying drawing, in which—

Figure 1, is a plan view of a burner embodying our invention. Fig. 2, is a central vertical section of the same. Fig. 3, is a side view of a spreader forming a part of the burner.

In the said drawing, 1 indicates a base plate which will be circular as shown for heating stoves or furnaces and usually of oblong form of cook stoves, it being understood that the contour of the base plate will depend on the configuration of the combustion chamber in which it is located. This plate is provided with an opening 2, and at diametrically opposite sides of said opening with draft openings 3, surrounded by upstanding circular flanges 4.

5 is a draft arch of any suitable height resting upon flanges 4 and bolted as shown at 6 or otherwise secured to the base plate, the legs of the arch being adapted to receive the arch which enters openings 3. At its center the arch is provided with a discharge opening 7 for discharging air downward toward the center of opening 2.

A generator rests upon plate 1 and depends through the opening thereof and consists of a saucer-shaped base 8 provided centrally with an upstanding cone 9, the saucer having a chamber 10, communicating with the interior of the cone and also having an opening 11 wherein is screwed or otherwise secured an oil supply pipe 12. The upper

portion of the interior of the cone is of cylindrical form so that the surrounding portion of the cone wall shall taper upwardly, and the upper extremity of the cone is provided with a series of radial notches 13 constituting gas jet orifices.

A device for cooperating with the generator in vaporizing the oil supplied thereto and for use in spreading the gas radially as it passes through said orifices, consists of a cylindrical body 14, a tapered lower end 15, a conical head 16, and a plurality of outwardly projecting spacing lugs 17. This device is slipped down into the cone until the head 16 rests upon the cone, the lugs 17 by contact with the wall of the cylindrical portion of the cone centering the stem 14 within the cone, the diameter of the stem being almost equal to the interior diameter of the upper part of the cone so as to provide a narrow annular or circular space up through which the oil will flow and within which it will be transformed into vapor which will escape through the orifices 13 and at such point through mixture with the descending air be transformed into a combustible gas. The base plate will be of such size and form as to completely partition off the combustion chamber of the stove or furnace in which it is used so that all of the air which reaches the burner shall pass up through the legs of the arch and downwardly through the discharge opening 7 thereof.

In practice a small quantity of oil will be poured onto the saucer shaped base of the generator and ignited to raise the cone to vaporizing temperature and also heat the arch so that the air which passes up through the same and downward toward the generator shall be heated. As soon as the generator is heated to the required degree, oil is permitted to flow through pipe 12 into chamber 10 and as it rises therein and in the narrow annular or circular space surrounding the stem of the spreader it is vaporized and the vapor passes up through the cone and between the lugs 17 and radially outward through the jet orifices 13 where it mixes with the heated air from the air-draft arch and is instantly converted into a combustible gas which burns fiercely and with no visible smoke or soot, the flame and heat maintaining the generator at vaporizing temperature and the arch at a temperature which will insure the supply of heated air to the burner.

as long as the same is in operation. The flame is extinguished by simply closing the valve, not shown, controlling the passage of oil to the supply pipe 12. It will be noted
5 that the spreader being conical will cause the air descending upon it to travel downwardly and outwardly in all directions so that the flame shall impinge directly upon the cone and base as well as the legs of the
10 draft tube.

From the above description it will be apparent that we have produced a burner possessing the features of advantage enumerated as desirable in the statement of invention and we wish it to be understood that
15 we reserve the right to make such changes as properly fall within the spirit and scope of the invention as defined by the appended claims.

20 We claim:

1. A burner, comprising a base plate having a plurality of openings, a draft tube communicating at its lower end with one of said openings and adapted to discharge air
25 downward toward the other opening, a generator supported by the plate and closing the opening last referred to and provided with a central chamber and upstanding hollow cone communicating at its lower end
30 with said chamber, and provided at its

upper end with radial notches, and a conical spreader resting on the upper end of the cone and adapted for deflecting air discharged upon it by the draft tube, radially outward and downward. 35

2. A burner, comprising a base plate having a plurality of openings, a draft tube communicating at its lower end with one of said openings and adapted to discharge air downward toward the other opening, a generator supported by the plate and closing the opening last referred to and provided with a central chamber and an upstanding hollow cone communicating at its lower end
40 with said chamber, and provided at its upper end with radial notches, and a conical spreader resting on the upper end of the cone and adapted for deflecting air discharged upon it by the draft tube, radially outward and downward, and provided with
45 a cylindrical stem depending into the cone and with lugs for centering said stem within the cone. 50

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

WAREHUM P. CASE STOUT.
HERBERT H. ANDRESS.

Witnesses:

M. A. WILSON,
H. J. WILSON.

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