

(No Model.)

2 Sheets—Sheet 1.

W. A. STAPP & C. P. HAMILTON.
FLUID FUEL BURNER.

No. 565,126.

Patented Aug. 4, 1896.

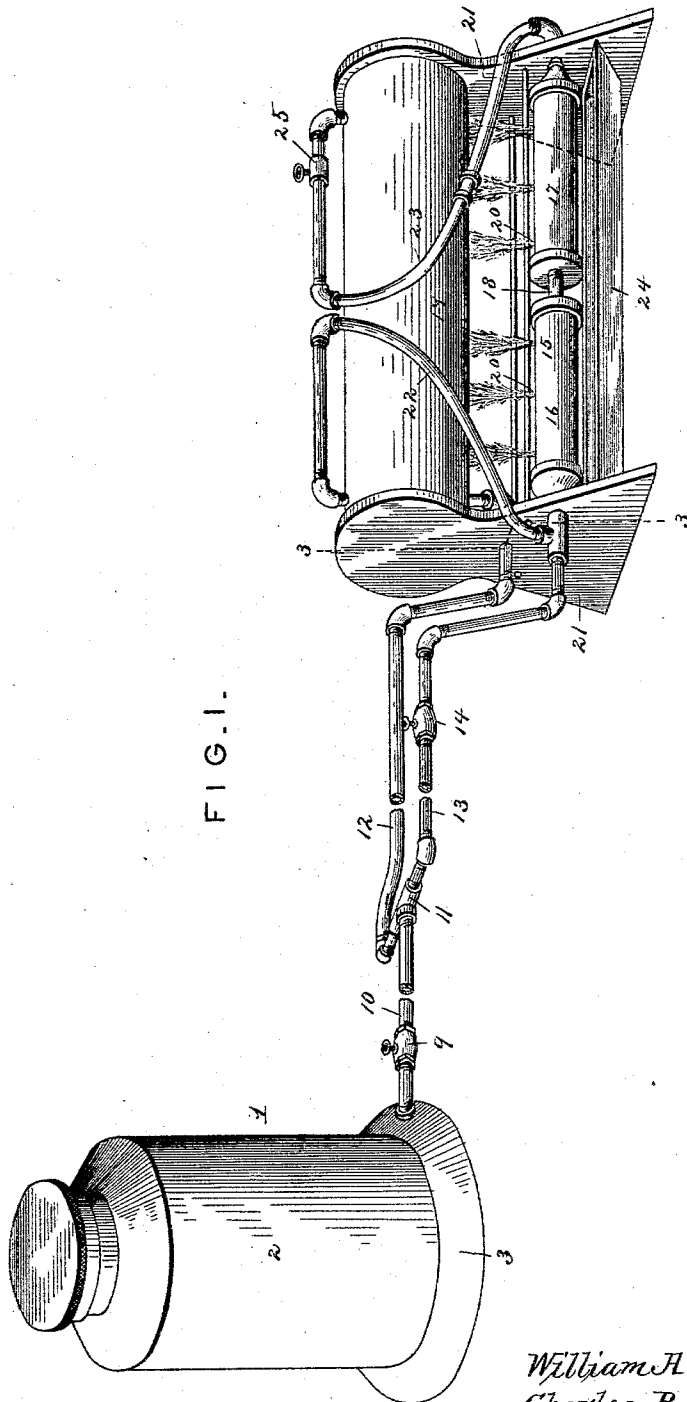


FIG. 1.

Witnesses

Harry L. Amer.
[Signature]

By their Attorneys,

CA Snow & Co.

Inventors

William A. Stapp and
Charles P. Hamilton.

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FIG. 2.

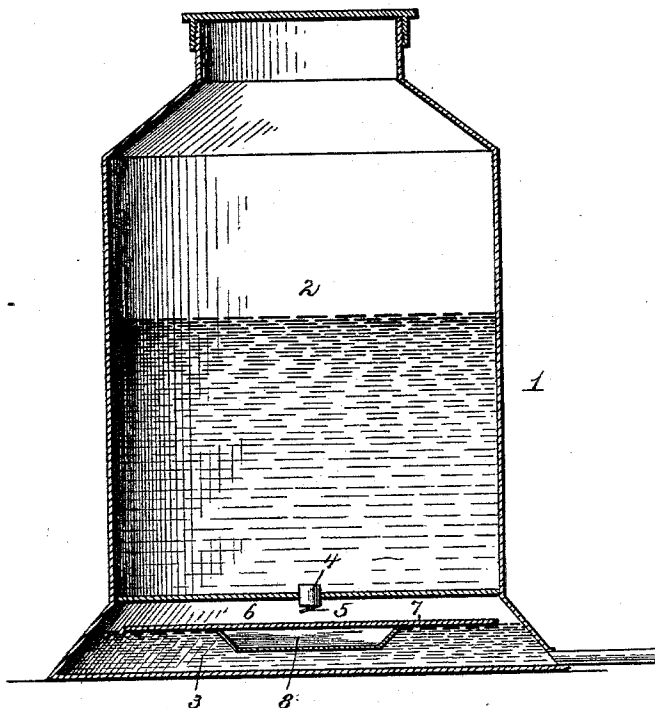
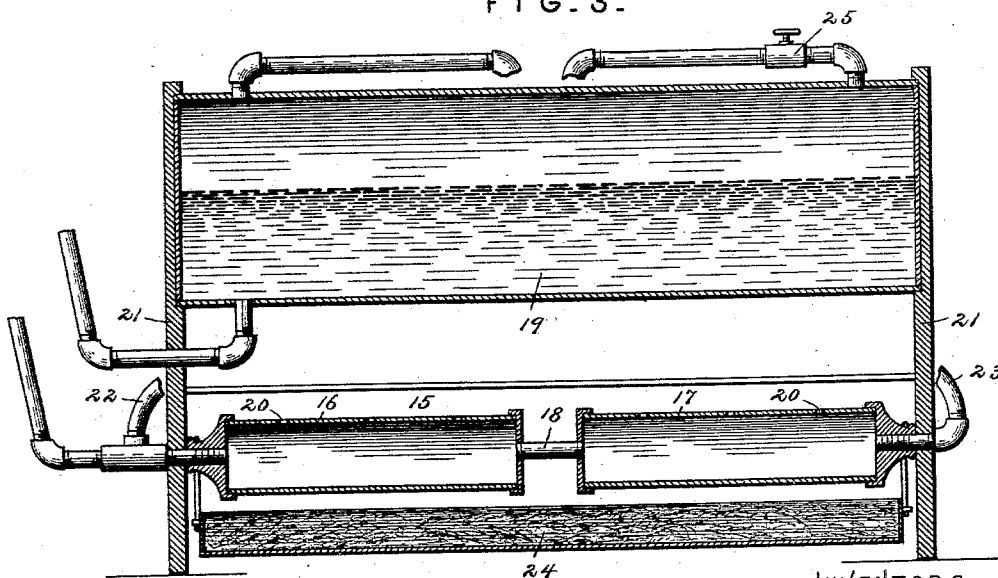


FIG. 3.



INVENTORS.

William A. Stapp and
Charles P. Hamilton.

Witnesses

Harry L. Amer.

By their Attorneys,

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UNITED STATES PATENT OFFICE.

WILLIAM A. STAPP AND CHARLES P. HAMILTON, OF TYLER, TEXAS.

FLUID-FUEL BURNER.

SPECIFICATION forming part of Letters Patent No. 565,126, dated August 4, 1896.

Application filed September 29, 1894. Serial No. 524,504. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM A. STAPP and CHARLES P. HAMILTON, citizens of the United States, residing at Tyler, in the county of Smith and State of Texas, have invented a new and useful Fluid-Fuel Burner, of which the following is a specification.

Our invention relates to fluid-fuel burners, and the objects in view are to provide a simple and efficient device adapted to feed the fuel as required for the support of combustion and avoid flooding and hence the danger of explosion, and, furthermore, to provide a compact arrangement of parts whereby the device may be arranged in the fire-box of an ordinary stove or range.

Further objects and advantages of our invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claim.

In the drawings, Figure 1 is a perspective view of an apparatus embodying our invention. Fig. 2 is a vertical central section of the reservoir. Fig. 3 is a central longitudinal section of the burner-tube and retort and connected parts.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 indicates the reservoir, having an upper compartment 2, which communicates with a lower compartment 3 by means of a passage 4, which in the construction illustrated consists of a tube. This passage is provided with a downwardly-opening valve 5, and arranged in the lower compartment 3 is a float 6, adapted, when raised by the inflowing fluid, to strike said valve, and by closing the same cut off the inlet of fuel. This float comprises a plate 7, to the under side of which is affixed an air-chamber 8.

Communicating with the lower compartment of the reservoir, and provided with a globe-valve 9, is a supply-pipe 10, divided by means of a T-coupling 11 to form the branches 12 and 13. The branch 13 is provided with a second globe-valve 14, and this branch communicates directly with one end of the burner-tube 15. The burner-tube is preferably constructed of two tubular sections 16

and 17, the adjacent heads of which are connected by means of an interposed bar 18.

The retort 19 is arranged vertically above the burner-tube with its axis parallel with that of the burner-tube, whereby the escape of burning fuel from the burner-openings 20 causes a direct contact of the flame with the retort. This retort is supported at its extremities by means of the standards or brackets 21, which are adapted to rest upon the grate or other fixed part of a stove or range. The branch 12 of the supply-pipe extends through one of the standards 21 and communicates directly with the retort, whereby, when the globe-valve 9 is open and the valve 14 is closed, the fuel flows through the branch 12 into the retort. Suitable tubular conveyers 22 and 23 communicate with the ends of the retort at its top, and after passing longitudinally of the retort to a point adjacent to the center thereof they are carried downward and communicate with the outer extremities of the sections of the burner-tube. The conveyer 22 communicates with the branch 13, adjacent to its point of connection with the burner-tube, and the conveyer 23 communicates directly with the opposite end of the burner-tube.

The top of the lower compartment of the reservoir is arranged in a horizontal plane corresponding approximately with the axis of the retort, and therefore when the fuel in the retort reaches the level of its axis the passage by which communication is had between the upper and lower compartments of the reservoir is closed, thus preventing the overflow of the fuel.

In operation the valve 14 is opened to allow a quantity of fuel to flow from the reservoir into the member 16 of the burner-tube, and when the latter becomes filled and overflows the surplus is received by the wick-pan 24, which is located directly under the burner-tube. The fuel in the wick-pan is then ignited and the valve 14 is closed, and when the heat produced by the combustion in said pan becomes sufficient to vaporize the fuel in the retort the gas is fed through the conveyers 22 and 23 to the burner. The conveyer 23 is preferably provided with a valve

25, whereby one of the members of the burner-tube may be cut out. The arrangement of the conveyers, as above described, places them in the field of the heat from the burner, and thus the fuel becomes superheated before reaching the point of ignition.

A special feature of the invention consists in the specific relative positions of the burner-sections and retort with the connections between the same and with the reservoir by which the retort is supplied with fuel.

From the above description it will be seen that direct communication between the reservoir and the burner is provided by means of a branched supply-pipe to enable the burner to be charged previous to starting the apparatus, but said branch is provided with a controlling-valve to cut off the supply through this medium when the initial ignition-pan has been charged. The fuel is supplied to the retort from a compartment of the reservoir which is located in such a plane with relation to the retort as to prevent the retort from being filled beyond a certain point, the supply being automatically cut off when said point is reached, and communicating with the top of the retort, to which point the liquid fuel can never rise, are the conveyers, which communicate, respectively, with one of the burner-sections and with the above-mentioned branch pipe communicating with the other burner-section. Thus the branch pipe through which liquid fuel is supplied to the burner-section is also utilized as a medium for conveying vaporized fuel after the burner has been started. This specific relative ar-

range of parts produces a compact apparatus capable of easy regulation and having means for preventing overflow.

It will be understood that various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

The herein-described vaporizer and burner having independent tubular burner-sections 16 and 17, a cylindrical retort arranged above and parallel with the burner-sections, a supply-pipe 10 having branches 12 and 13 communicating, respectively, with the retort at its bottom and with one of the burner-sections, a controlling-valve in the main portion of the supply-pipe and a similar valve 14 arranged in the branch 13, and vapor-conveyers 22 and 23 communicating with the retort at its top, the former communicating with the branch 13 between the burner-section and the valve 14, and the other conveyer communicating directly with the other burner-section and having a controlling-valve, substantially as specified.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

WILLIAM A. STAPP.

CHARLES P. HAMILTON.

Witnesses:

H. A. CAMERON,

BERT H. SMITH.