

No. 616,069.

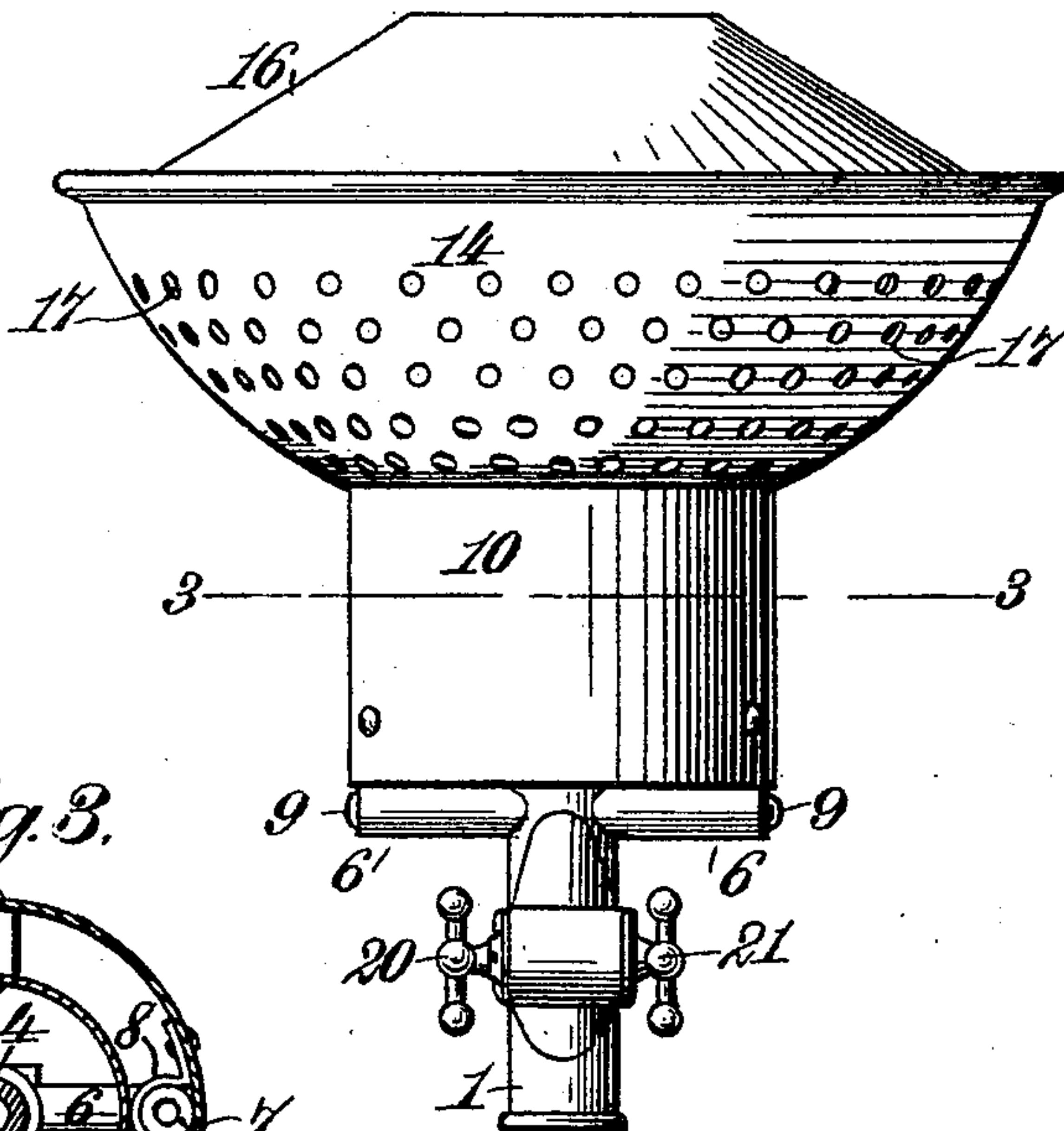
Patented Dec. 20, 1898.

F. BARNHART.  
GAS BURNER AND HEATER.

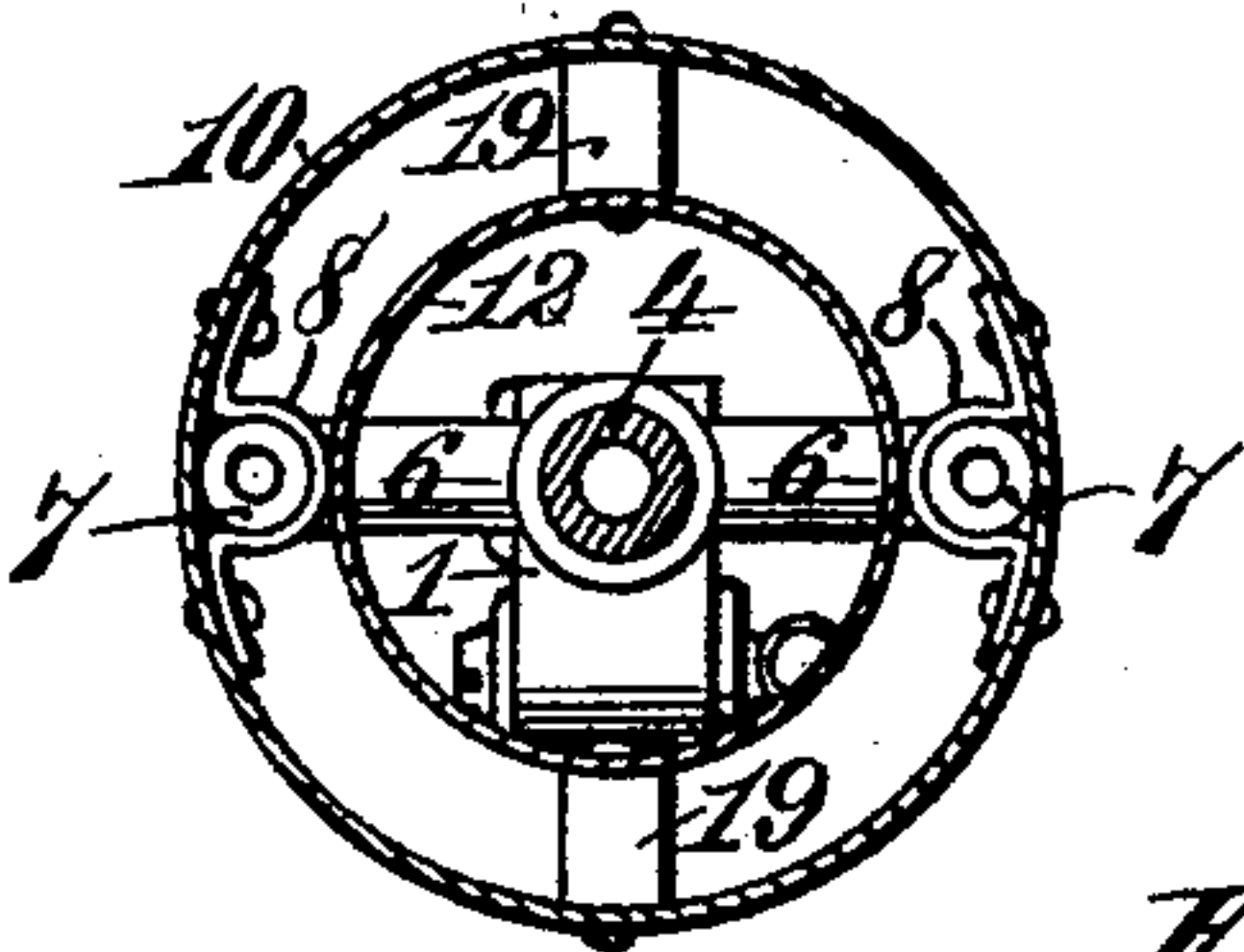
(Application filed Feb. 10, 1898.)

(No Model.)

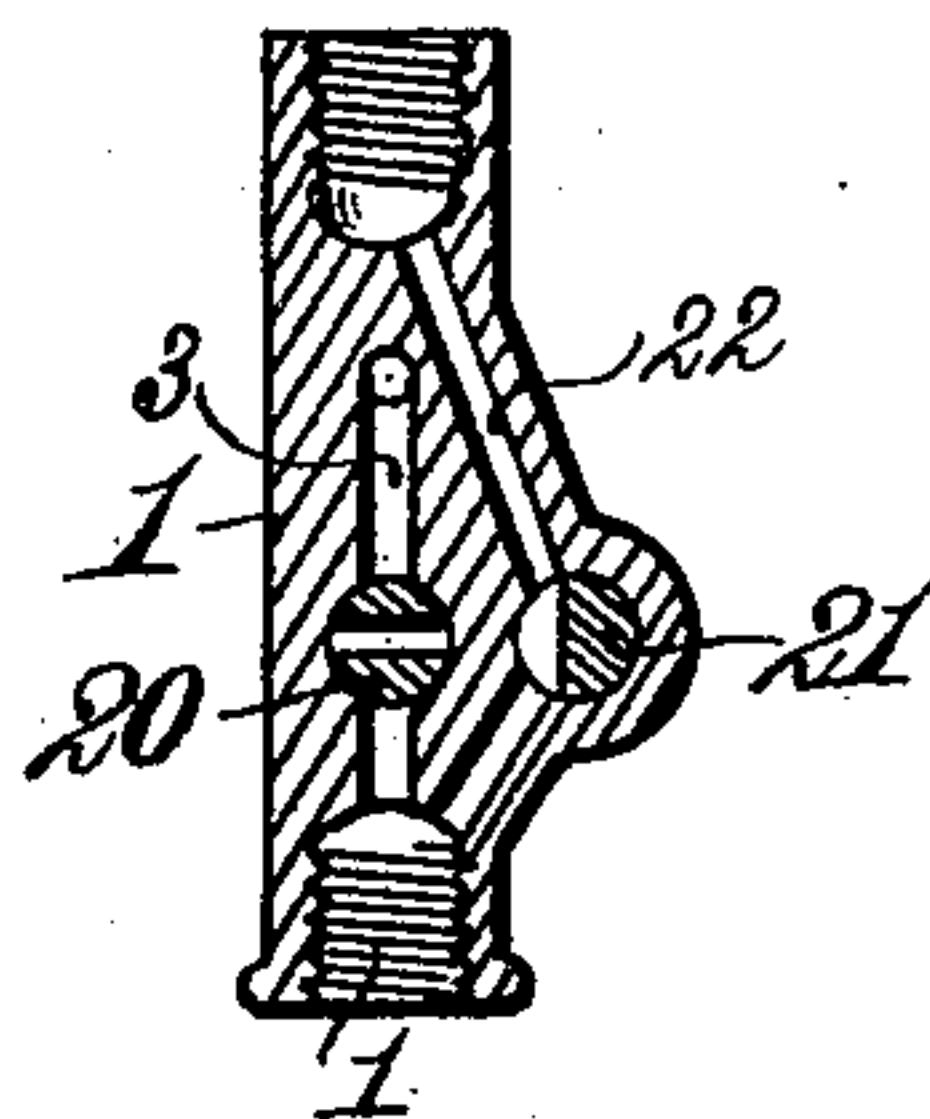
*Fig. 1.*



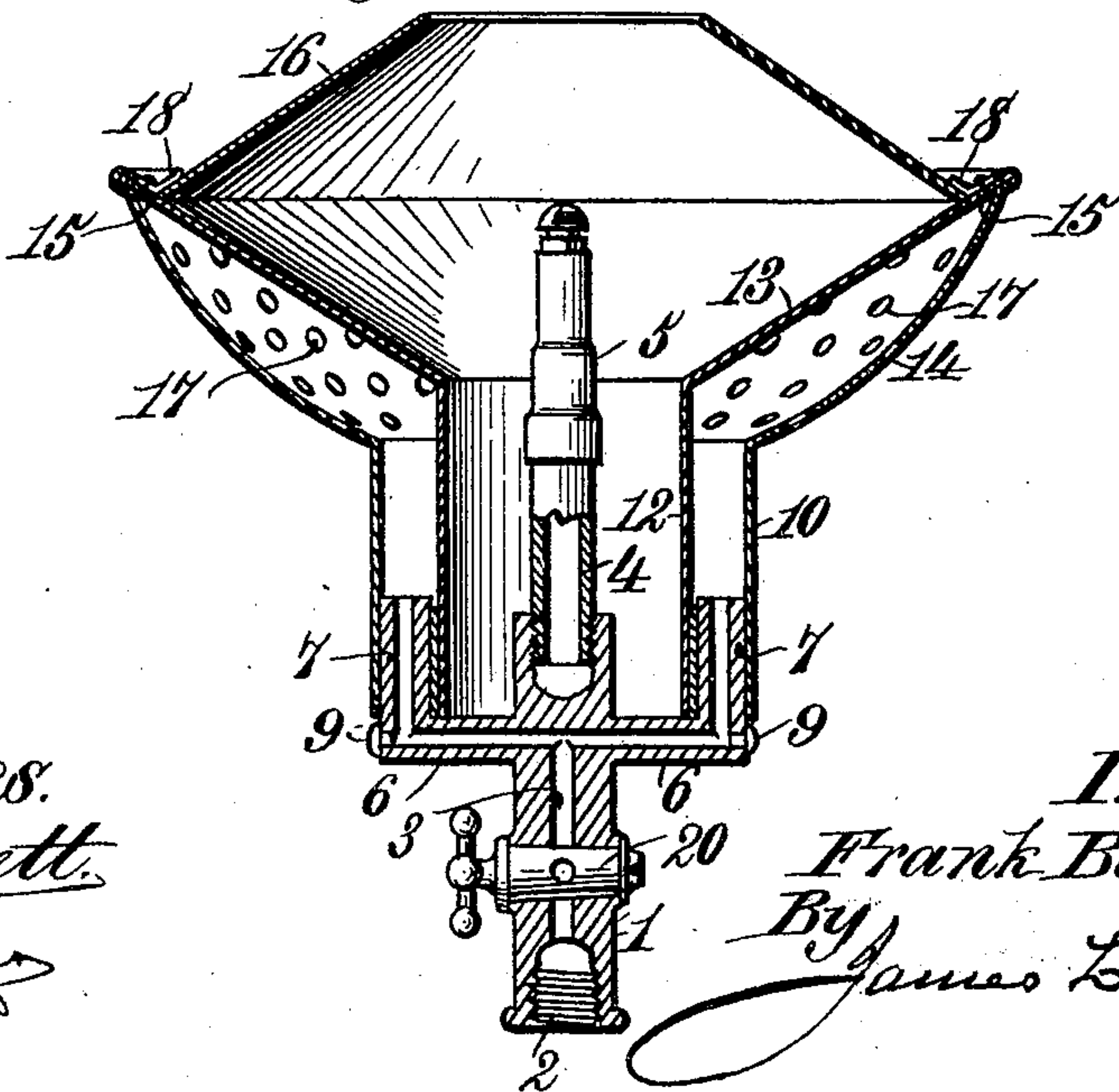
*Fig. 3.*



*Fig. 4.*



*Fig. 2.*



Witnesses.  
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# UNITED STATES PATENT OFFICE.

FRANK BARNHART, OF WARREN, PENNSYLVANIA.

## GAS BURNER AND HEATER.

SPECIFICATION forming part of Letters Patent No. 616,069, dated December 20, 1898.

Application filed February 10, 1898. Serial No. 669,853. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK BARNHART, a citizen of the United States, residing at Warren, in the county of Warren and State of Pennsylvania, have invented new and useful Improvements in Gas Burners and Heaters, of which the following is a specification.

This invention relates to burners and heating attachments therefor designed to heat an apartment or room; and the chief object of the present invention is to provide a new and improved gas burner and heater which can be used simultaneously without the illumination or light from the burner being in any manner obstructed or interfered with by the heater itself.

The invention also has for its object to provide a novel, simple, efficient, and economical illuminating-gas burner and heater attachment which are both, in connection with a burner base or body, connected with the gas-supply and having independent conduits controlled by independent gas cocks or valves for independently supplying the burner and the heater in such manner that the burner may be used for illuminating purposes, as usual, and the heater for warming an apartment or room.

To accomplish these objects, my invention involves the features of construction, the combinations or arrangements of parts, and the principles of operation hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a side elevation of an illuminating-gas burner and a heater assembled together and constructed in accordance with my invention. Fig. 2 is a vertical central sectional view of the same. Fig. 3 is a horizontal sectional view taken on the line 3 3, Fig. 1; and Fig. 4 is a detail vertical sectional view of the burner base or body.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein the numeral 1 indicates the supporting base or body of the burner, having a screw-socket 2 at its lower end to screw upon the usual nipple of a gas-fixture. The base or body is formed with a central gas-passage 3, and at its upper end this base or body is screwed or otherwise detachably

connected with a gas-pipe 4, having a screw-threaded upper end to receive a burner 5 of any construction suitable for the purpose in hand. In the drawings I have represented an ordinary burner-tip, but wish it clearly understood that any type of burner may be applied to or used in connection with the gas-pipe 4 for illuminating purposes, such as giving the desired light in an apartment or room.

The burner base or body 1 is constructed with horizontal tubular extensions 6, having at their outer ends perpendicular tubular extensions 7, designed to fit into sockets 8, riveted or otherwise attached to the lower end of a heater-shell, the specific construction of which I will hereinafter explain in detail.

The outer ends of the gas-passages in the horizontal tubular extensions 6 are closed by removable plugs 9, which render it possible to conveniently clean these gas-passages, as will be obvious.

The heater proper is in the form of a cylindro-conoidal body, composed of inner and outer concentric walls 10 and 12, which are perpendicular and branch off in an outward and upward direction into inclined inner and outer walls 13 and 14, which at their upper edges are closed by an annular plate or portion 15, serving as the base of support for a cone 16, of any suitable material. In the drawings the cone is represented in position on the heater and an ordinary small burner-tip 5 is shown as applied to the gas-pipe 4; but when the small burner-tip 5 represented in the drawings is employed for heating purposes the cone 16 can, if desired, be removed. When a Welsbach mantle-burner or any other burner sufficiently high is employed for illuminating purposes, the cone 16 can remain in position, and it will serve in a measure to steady the light.

The outer inclined wall 14 of the heater-shell is foraminous or constructed with numerous perforations 17 of any form, shape, or configuration desired, so that the heated air within the heater-shell can freely escape through such perforations.

The parts composing the heater-shell are made of comparatively thin sheet metal of any known kind, but preferably of that kind which can be nickel-plated to produce an attractive, neat, and ornamental appearance.



The central space in the heater-shell through which the perpendicular gas-pipe 4 passes constitutes an air-chamber to keep the flame of the gas burner or burners supplied with oxygen, and since the air is superheated a very white light is produced, while by the construction and arrangement of parts shown illuminating and heating effects are obtained without extra connection.

10 The gas-burner *per se*, or rather the burner tip or tips, may be the well-known Welsbach burner, or a Niagara burner, or an Argand burner with a mica chimney. An ordinary chimney may be used in connection with the burner, and, if desired, a globe may be used in connection with the chimney, as is well known in gas and lamp burners. By removing the cone access is obtained to the gas-burner *per se*.

20 The lower end of the heater-shell is open nearly its full extent to the external atmosphere, and at suitable points tie blocks or studs 19 may be inserted for the purpose of firmly holding the two parts of the shell together.

25 The flow of gas through the straight central gas-passage 3 supplies the gas necessary for the heater, this gas passing through the tubular extensions 6 and 7 into the heater-shell. The gas-passage 3 is controlled by a valve 20. The burner base or body is also constructed with a by-pass 22, controlled by a valve 21, by which gas may be made to flow direct to the gas-pipe 4 for supplying the burner or burners 5. The valves 20 and 21 may be of any construction suitable for the purpose in hand, and they are independently operated, so that the flow of gas to the gas-burner and to the heater is independently controllable.

40 My invention provides a very simplified illuminating-gas burner and heating attachment therefor, wherein independent gas-con-

duits controlled by valves deliver gas to the gas-burner proper and to the interior of the heater, whereby it is possible for the gas-burner to be used for illuminating purposes without the light being obstructed or interfered with by the heater, and likewise the heater is efficient and useful without respect to the gas-burner, which features are advantageous and result in the production of a very satisfactory article of this type.

Having thus described my invention, what I claim is—

1. The combination, in a gas burner and heater, of a burner base or body having means to connect with a gas-supply, a gas-pipe rising from the burner base or body, tubular extensions projecting from the burner base or body, a hollow heater-shell mounted upon said tubular extensions, and independent valves controlling the flow of gas to the said gas-pipe and to the interior of the said heater-shell, substantially as described.

2. The combination, in a gas burner and heater, of a burner base or body having means to connect with a gas-supply and provided with horizontal and upright tubular extensions, a gas-pipe leading from the burner base or body, a hollow heater-shell detachably mounted upon the said upright tubular extensions, a cone mounted on the upper end of the heater-shell, and independent valves carried by the burner base or body for controlling the flow of gas to the said gas-pipe and to the interior of the said heater-shell, substantially as described.

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

FRANK BARNHART.

Witnesses:

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JAMES W. WIGGINS.