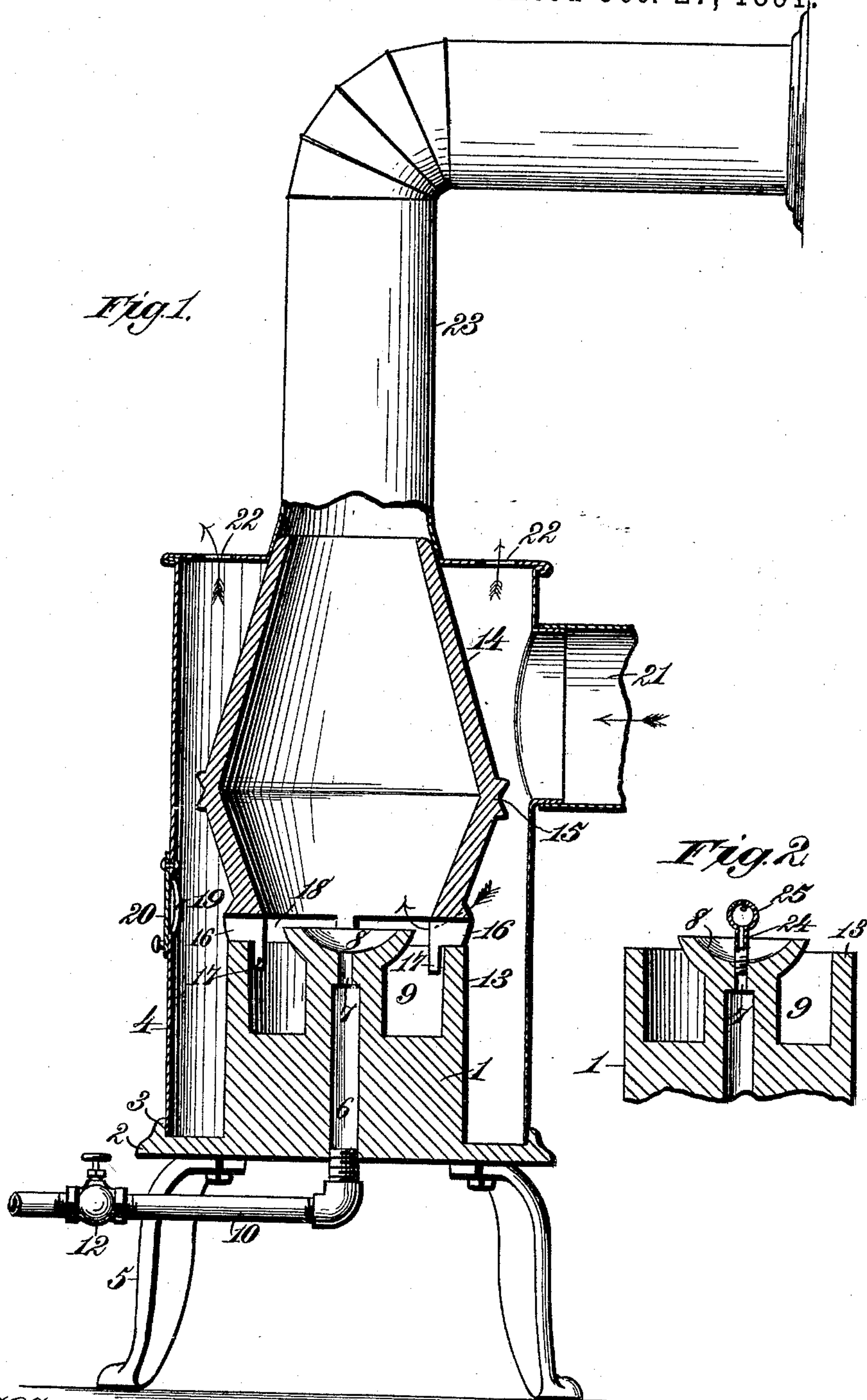


(No Model.)

G. B. WOODARD.
HEATING STOVE.

No. 462,186.

Patented Oct. 27, 1891.



Witnesses,
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UNITED STATES PATENT OFFICE.

GEORGE B. WOODARD, OF OLEAN, NEW YORK.

HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 462,186, dated October 27, 1891.

Application filed May 4, 1891. Serial No. 391,574. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. WOODARD, a citizen of the United States, residing at Olean, in the county of Cattaraugus and State of New York, have invented new and useful Improvements in Heating-Stoves, of which the following is a specification.

This invention has for its object to provide a novel, simple, economical, and efficient stove for heating apartments by means of hydrocarbon fluids in such manner that the flame from a burner heats to a high temperature a metallic hood, upon which air is delivered and heated to flow into the apartment, while portions of the heated air are directed into the hood to support combustion.

The invention also has for its object to provide a novel construction of burner, whereby the oil-drippings flow from a burner-tip into a surrounding chamber or receptacle for the purpose of providing a subsidiary flame.

To accomplish these objects my invention consists in the features of construction and the combination or arrangement of devices hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a vertical sectional view, partly in side elevation, of my improved heating-stove; and Fig. 2 is a detail view showing a modified construction of burner.

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 metallic burner-body, having at its base portion a laterally-projecting flange 2, provided with a rim 3 for the purpose of sustaining and retaining in proper position a cylindrical shell or casing 4, which rests upon the flange and is confined thereupon by the rim.

The burner-body is preferably provided with attached legs or feet 5 for the purpose of supporting it in a slightly-elevated position, and at the center of the burner-body is formed a vertical passage-way 6, terminating at its top portion in a jet-orifice 7 of reduced diameter. The burner-body is formed at the center with the upwardly-projecting cup-shaped burner 8, containing a concavity in its upper side and surrounded by an annular

receptacle or chamber 9 for providing a subsidiary flame, as will hereinafter appear. The lower extremity of the passage-way 6 communicates with an oil-supply pipe 10, having a regulating-valve 12 and adapted to connect with an elevated reservoir containing the oil or hydrocarbon fluid, so that the latter is supplied to the burner under pressure.

The vertical annular portion 13 of the burner-body, which constitutes the outer wall of the receptacle or chamber 9, serves to support a hood 14, which is expanded near the middle of its length, as at 15, and tapers toward each extremity, so that the hood is of double conical form. The lower conical portion is provided at its base with a series of pendent feet 16, adapted to rest upon the upper edge of the vertical wall 13, and having at their inner sides the depending fingers or arms 17, which engage the inside of the vertical wall, and thereby retain the hood in a perpendicular position upon the burner-body. The pendent feet 16 serve to elevate the lower edge of the hood from the upper edge of the burner-body, and inasmuch as these feet are separated from each other a series of lateral spaces or passages 18 are provided in proximity to the burner for the passage of air from the interior of the shell or casing 4 to the flame of the burner for supporting combustion.

The shell or casing is provided at one side with an orifice 19, closed by a suitable door 20 for the purpose of introducing a torch or other device to light the burner, and the opposite side of the shell or casing is provided with a cold-air flue 21, adapted to communicate in any suitable manner with the external atmosphere for the purpose of conducting air into the shell or casing and delivering such air upon the conical upper portion of the hood, whereby such air is heated by the hood and flows through orifices 22 in the top wall of the shell or casing into the apartment to be heated. The lateral spaces or passages 18 in proximity to the burner serve to conduct portions of the heated air to the flame for the purpose of supporting combustion. By heating the air prior to its entrance to the burner the generation of smoke is in a large measure reduced. The upper contracted extremity of the hood is connected with a flue

or smoke-pipe 23 for the purpose of carrying off the products of combustion.

The regulating-valve in the oil-supply pipe controls the supply of oil to the burner, and in operation the oil will accumulate in the concavity formed in the upper end of the burner and overflow into the surrounding receptacle or chamber 9. The accumulating oil in this receptacle or chamber becomes ignited, and thereby provides a subsidiary flame, which materially increases the heating capacity of the stove and renders the apparatus more useful, desirable, and efficient in practical operation.

The burner-body and the hood are preferably composed of cast-iron as being the material most suitable for the conditions required, in that the metal can be quickly heated and generates considerable heat for heating the inflowing cool air, which is thus utilized in heating the apartment wherein the stove is arranged.

The construction of the double conical hood is such that it can be quickly and conveniently removed and replaced for the purpose of readily cleaning the burner or giving it such other attention as occasion may demand.

In Fig. 2 I have exhibited the orifice 7 in the burner as provided with a tube 24, having a spherical perforated head 25, and, if desired, this modified construction of burner may be used.

The shell or casing may be composed of sheet metal or any other material that will fulfill the conditions required; but sheet metal is preferable, in that it is rapidly heated and can be practically used, since it is not exposed to the direct action of the flame from the burner.

Having thus described my invention, what I claim is—

1. The combination, in an oil-stove, of a cast-iron burner-body formed integral with an oil passage-way, and a burner having a concavity in its upper side and surrounded by a receptacle or chamber into which oil from

the concavity of the burner overflows for providing a subsidiary flame, a hood having lateral air-inlet spaces or passages in proximity to the burner and provided with feet detachably engaging the upper end portion of the burner-body, and a shell or casing surrounding the burner-body and hood, having hot-air-discharge orifices at its top portion and provided with a cold-air flue adapted to communicate with the external atmosphere for delivering air upon the heated hood, substantially as described.

2. The combination, in an oil-stove, of a burner-body having a central oil-burner, a metallic hood detachably engaged with the upper end portion of the burner-body and provided with lateral air-inlet spaces or passages for the inflow of heated air to support combustion, and a shell or casing surrounding the burner-body and hood, having hot-air-delivery orifices and provided with a flue for communicating with the external atmosphere to deliver such air upon the heated hood for its passage to the burner and to an apartment, substantially as described.

3. The combination, in an oil-stove, of a burner-body having a lateral flange at its base and provided at its upper portion with an oil-burner, a double conical hood detachably engaged with the upper portion of the burner and provided with lateral air spaces or passages for the inflow of heated air to support combustion, and a shell or casing surrounding the burner-body and hood, having hot-air-discharge orifices at its top portion and provided with a cold-air flue adapted to communicate with the external atmosphere for delivering such air upon the heated hood, substantially as described.

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

GEORGE B. WOODARD. [L. S.]

Witnesses:

ALBERT H. NORRIS,

JAMES A. RUTHERFORD.