

J. W. VAN DEVENTER.
HYDROCARBON BURNER.
APPLICATION FILED MAR. 26, 1913.

1,066,686.

Patented July 8, 1913.

3 SHEETS—SHEET 1.

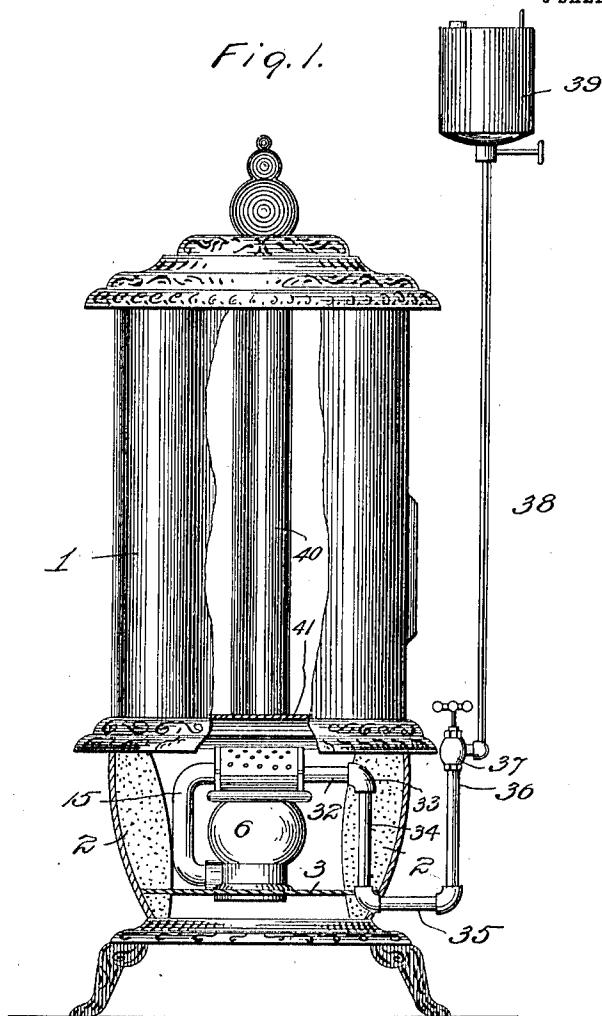
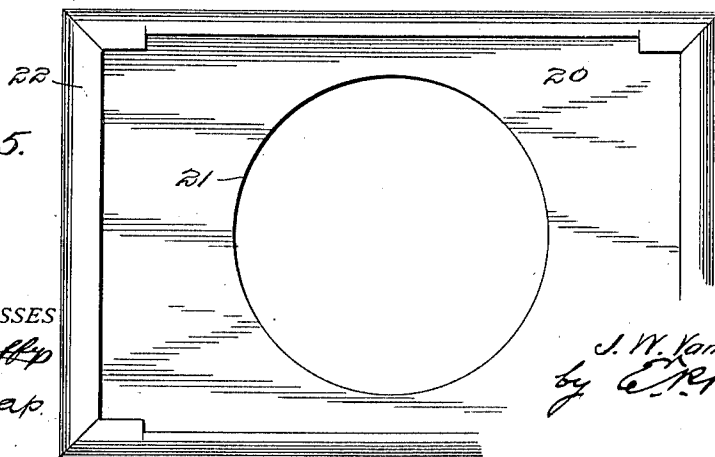


Fig. 5.



WITNESSES
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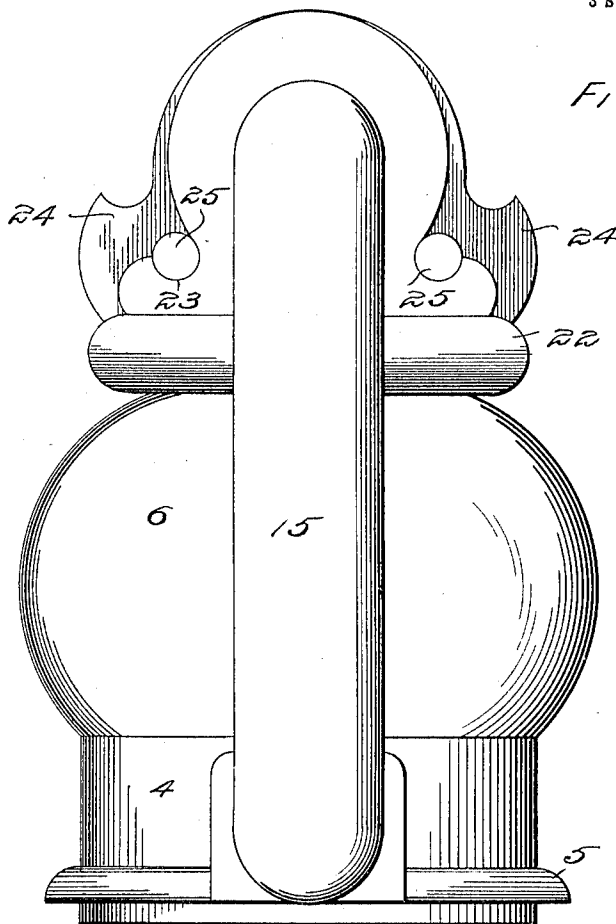
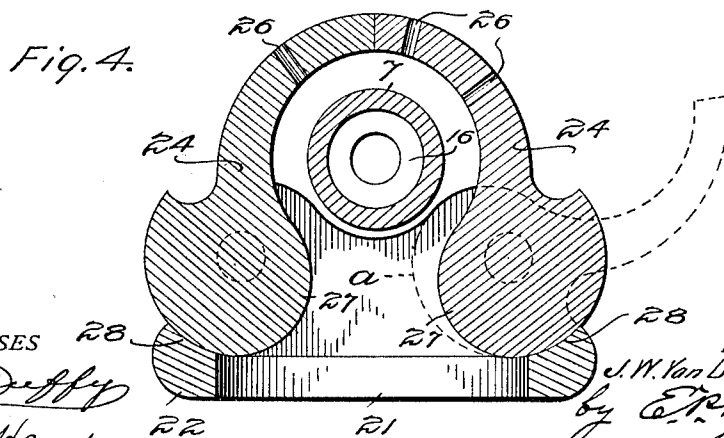


Fig. 2.



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3 SHEETS-SHEET 3.

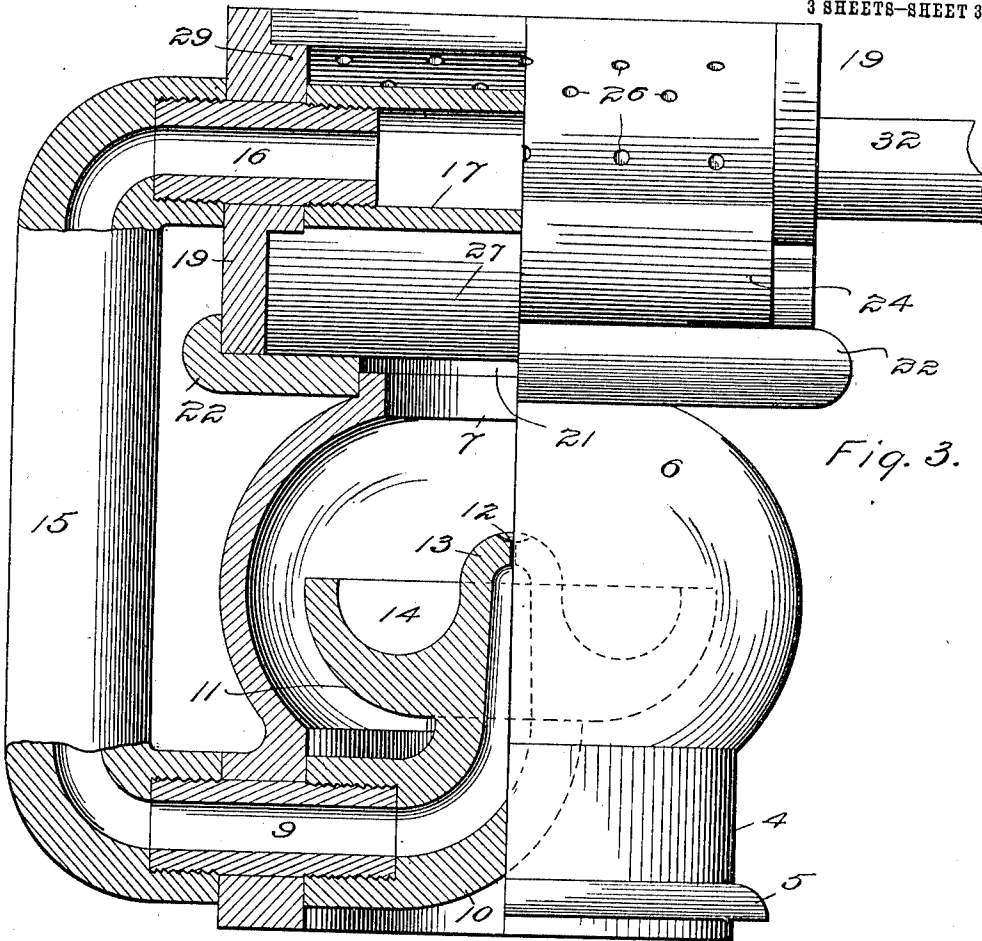
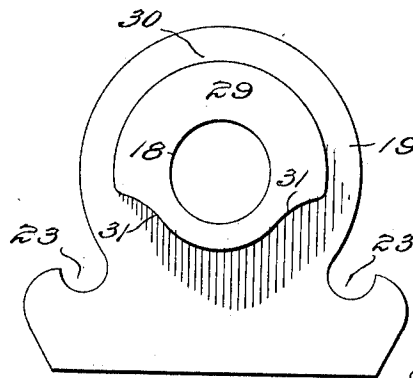


Fig. 3.

Fig. 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

JUDSON W. VAN DEVENTER, OF ST. PETERSBURG, FLORIDA.

HYDROCARBON-BURNER.

1,066,686.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JUDSON W. VAN DEVENTER, a citizen of the United States of America, residing at St. Petersburg, in the county of Pinellas and State of Florida, have invented certain new and useful Improvements in Hydrocarbon-Burners, of which the following is a specification.

This invention relates to hydro-carbon burners and one of the principal objects of the invention is to improve the efficiency of hydro-carbon burners generally and to provide reliable and efficient means for producing a steady, uniform flame.

Another object of the invention is to provide a hydro-carbon burner which will consume or throw off the carbon or soot and thus insure perfect combustion.

Still another object of the invention is to provide a hydro-carbon burner which will not fluctuate and which will give a uniform intense heat for cooking or heating purposes.

These and other objects may be attained by means of the construction illustrated in the accompanying drawings, in which:

Figure 1 is a view in elevation and partial vertical section of a heating stove provided with a hydro-carbon burner made in accordance with my invention; Fig. 2 is an enlarged view in elevation of the burner removed from the stove; Fig. 3 is a view in partial elevation and partial vertical section of the burner; Fig. 4 is a transverse vertical section of the hood or upper portion of the burner; Fig. 5 is a top plan view of the base portion of the hood; and Fig. 6 is a view in elevation of the hood with the heat regulating members removed.

In the accompanying drawings, my invention is shown applied to a heating stove, but it will be understood that the same may be used in connection with cooking stoves or furnaces without alteration, excepting in some minor detail as to the regulation of the draft devices.

Referring to the accompanying drawings by reference characters, the numeral 1 in Fig. 1 designates a heating stove and in the usual fire pot, there is a lining of asbestos 2 and a supporting plate 3 for the hydro-carbon burner. Supported upon the plate 3 is the burner provided with an open circular air chamber 4 which fits an opening in the base 3 and is provided with a supporting

flange 5. Above the air chamber 4 is a dome 6 having an open top 7. Leading into the air chamber at one side thereof is a threaded pipe connection 9. Connected to the inner end of the pipe connection 9 is the lower curved end 10 of the burner, the upper end of which is provided with an upwardly curved annular surface 11 which serves as a deflector for the air passing up through the air chamber 4, said deflector serving to insure a uniform air supply at all points around the burner jet 12 which is formed in the center of a projection 13 which surmounts the starting cup 14 formed integral with and surrounding said projection.

Connected to the outer end of the connection 9 is a gas pipe 15 which is curved at its upper end and connected by a fitting 16 to a horizontal tube 17, said tube being inclosed within and extending through an opening 18 in a hood comprising the end plates 19 and the heat regulators 24. The hood is open at its lower end and rests upon a base or tray 20 having a central opening 21 and a rectangular flange 22 extending around the same. The hood rests upon the base or tray 20 and forms a connection with the flange 22. The hood is open at its upper side and the two ends are each provided with a bearing 23.

The heat regulators 24 are each provided with a projecting trunnion 25 supported in the bearing 23 at the ends of the hood. The heat regulators 24 are thus pivoted to form the top of the hood and may be swung upon their pivotal points or trunnions 25 to give more or less intensity to the heat and for other regulating purposes. These regulators are provided with a series of perforations 26 and their lower ends are curved or cam shaped as at 27. These curved cam members are made to contact with the upper curved surface 28 of the flange of the hood and projecting inward from the opposite ends of the hood 19 are bosses 29 having curved upper surfaces 30 and oppositely curved bottom surfaces 31 as shown in Fig. 6. Connected to the gas pipe 17 is an inlet oil pipe 32 and connected to the pipe 32 by means of an elbow 33 is a vertical pipe 34 which extends through the asbestos packing 2 in the stove. Connected to the pipe 34 by means of an elbow is a horizontal pipe 35 which leads out through the stove and is provided with a vertically disposed con-

necting pipe 36 provided with an inlet valve 37. Communicating with the inlet valve is the supply pipe 38 which communicates with a supply tank 39 for the hydro-carbon fuel.

5 An air pipe 40 is disposed immediately above the burner and may be raised upon a suitable base 41.

The operation of my invention may be briefly described as follows: The fuel is fed from the inlet valve through the pipes until it reaches the retort pipe 17. The starter cup 14 having been supplied with alcohol or other burning fluid heats the fuel in pipe 17 and converts it into gas from which it is fed around through the pipe 15 and connections into the burner and is ignited as gas at the jet 12. Owing to the fact that the feed pipe leading to the retort pipe is insulated by asbestos the gas is not formed until it reaches the retort or converter 17 and hence a constant flow of oil may be fed to the retort and thus insure a constant and steady unfluctuating flame. The heat regulating devices may be moved upon their pivotal points to give a greater volume of heat by permitting the flame to pass out between the heat regulators. It will be noted that by the dotted line *a* in Fig. 4 that when the heat regulators are thrown down or opened, the cam-shaped portions 27 move inwardly and thus form a slightly restricted passage for the air. For certain purposes the heat regulators may be reversed and thus change the intensity of the draft and regulate the heat to be radiated from the burner.

From the foregoing, it will be obvious that my invention is comparatively simple in construction, will give a steady unfluctuating flame which can be regulated as desired for various heating or cooking purposes and that the burner may be quickly installed in any heating or cooking stove

with but slight modifications in the arrangement of the draft devices.

I claim:

1. A hydro-carbon burner comprising a base, an air chamber resting on the base, a spherical chamber above the air chamber, a burner jet in said spherical chamber, said jet being provided with a curved air deflector surrounding it, and means for regulating the heat comprising a hood and curved regulating members pivotally mounted on the hood and adapted to be opened and closed to regulate the heat.

2. A hydro-carbon burner comprising an air chamber supported upon a base, a spherical chamber above the air chamber, a burner jet in said spherical chamber, a curved air deflector surrounding said jet, a heat regulator comprising a hood, curved members pivotally mounted on the hood and adapted to be opened and closed to regulate the heat, and a fuel supply pipe leading through a non-conducting packing to said hood.

3. A hydro-carbon burner comprising a base, an air chamber resting on the base, a spherical chamber above the air chamber, a burner jet in said spherical chamber, a curved air deflector surrounding said jet, a starting cup surrounding said jet, a hood, and curved members pivotally mounted on the hood and adapted to be opened and closed to regulate the heat, and a fuel supply pipe provided with a non-conducting packing, said pipe extending to the hood, and a retort pipe within the hood.

In testimony whereof I affix my signature in presence of two witnesses.

JUDSON W. VAN DEVENTER.

Witnesses:

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