

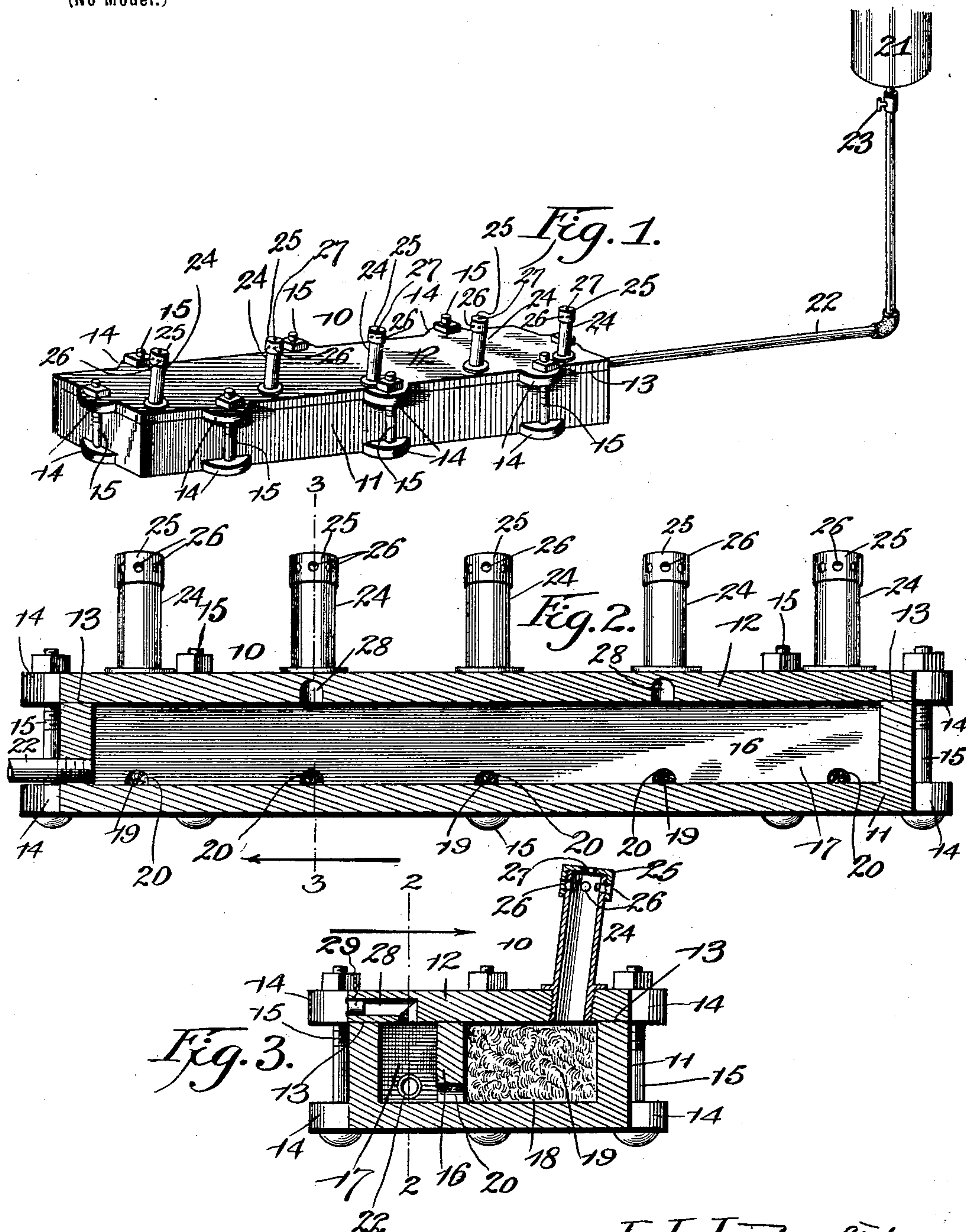
No. 630,893.

Patented Aug. 15, 1899.

J. J. JORDAN & C. THIELE.  
HYDROCARBON BURNER.

(Application filed May 19, 1899.)

(No Model.)



Witnesses

*A. Roy Appenand*  
*H. J. Beuchamp*

By *Their* Attorneys.

*J. J. Jordan and*  
*Charles Thiele, Inventors*

*C. A. Snow & Co.*



# UNITED STATES PATENT OFFICE.

JOHN J. JORDAN AND CHARLES THIELE, OF KYLE, TEXAS.

## HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 630,893, dated August 15, 1899.

Application filed May 19, 1899. Serial No. 717,490. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN J. JORDAN and CHARLES THIELE, citizens of the United States, residing at Kyle, in the county of Hays and State of Texas, have invented a new and useful Hydrocarbon-Burner, of which the following is a specification.

Our invention relates to improvements in burners for consuming oil as fuel to generate heat for cooking, warming, and domestic purposes; and the object in view is to provide a simple construction by which liquid fuel is supplied and distributed uniformly to a series of jet-pipes, so that each pipe will receive its proper share of fuel, and also to provide means by which the pressure of gas that may be generated by vaporization of the fuel in the burner may be vented automatically to obviate explosion of the burner or damage to the structure in which said burner is located.

It is well known that in certain sections of this country, as in the prairie regions of the West, wood and coal are not readily obtainable for fuel except at considerable cost, while there is a plentiful supply of cheap hydrocarbon fuel.

Our invention is designed to provide a means by which the hydrocarbon fuel may be utilized in any kind of cooking or heating stove for domestic and warming purposes, and thereby effect a saving in the cost of the fuel and overcome the necessity for removal of ashes, as well as eliminating the dirt incidental to the use of solid fuel.

To attain the objects of our invention, it consists in the novel combination and arrangement of parts, which will be hereinafter fully described and claimed.

In the drawings, Figure 1 is a perspective view of a hydrocarbon-burner constructed in accordance with our invention. Fig. 2 is a longitudinal sectional view through the burner in a plane indicated by the dotted line 2 2 of Fig. 3 and taken through the feed-chamber and looking toward the jet-pipes. Fig. 3 is a vertical transverse section on the plane indicated by the dotted line 3 3 of Fig. 2. Fig. 4 is an enlarged detail view of one of the jet-pipes.

The same numerals of reference are used to indicate like and corresponding parts in each of the several figures of the drawings.

The burner 10 of our invention consists of a metallic box or casing 11, having a removable cover 12. This box or casing is shown by the drawings as of generally rectangular construction, and its bottom and side walls are cast in a single piece of metal to provide a shallow chamber or compartment. The shape and dimensions of the casing 11 are not material, because the same may be varied within the provisions of the skilled mechanic to suit the character of the stove or other structure in which the burner is to be employed. The cover 12 conforms to the shape of the box or casing 11, and it is fitted thereto by a ground joint 13 for the purpose of making a gas-tight joint between said casing and the cover. The edge of the casing, at the open side thereof, is planed or ground in any of the ways familiar to those skilled in the art, and that part of the cover which engages with the open side of the casing is manipulated or treated to make it conform accurately to the edge of the casing, after which the cover is fitted to said casing and secured thereto by suitable fasteners. As one means for uniting the cover and casing detachably together we have shown the flanges 14 as being made integral with the casing and cover, and through perforations in said flanges are passed the securing bolts or screws 15. The shallow compartment of the casing 11 is provided with an integral partition 16, which is disposed longitudinally of the casing and is made or cast as an integral part thereof. This longitudinal partition is disposed near one side wall of the casing, so as to form a narrow oil-chamber 17, and between the opposite wall of the casing and said partition is the feed-chamber 18, the cross-sectional area of which greatly exceeds the area of the chamber 17. The feed-chamber 18 is filled with a fireproof packing 19—such, for example, as asbestos or mineral wool—and this packing serves to obstruct the flow of gas as it circulates from the chamber 17 through the chamber 18 on its way to the jet-tubes. The partition 16 within the box or casing is provided at the bottom with a series of transverse ports 20, which permit the fuel to pass from the chamber 17 into the chamber 18, so as to permeate the packing and flow to the series of jet-pipes.



The fuel is contained in a supply-tank 21, which is situated externally to the stove in which the burner is located and occupies an elevated position above the plane of the burner in order to feed the fuel by gravity, and this tank is connected with the burner by means of a supply-pipe 22, the upper end of which is fastened to the tank in any suitable way, while its lower end is united to the burner at one end thereof and in a position to discharge the liquid fuel to the oil-chamber 17. The pipe 22 is equipped with the cock or valve 23 of any suitable construction and located adjacent to the tank, and by proper adjustment of this cock the quantity of fuel to be supplied to the burner is capable of regulation.

The burner of our invention is equipped with a plurality of jet-pipes 24, which are attached to the cover 12, so as to communicate with the feed-chamber 18, and these jet-pipes are disposed on the opposite side of the burner 10 from the oil-chamber 17, so that the fuel is vaporized in the chamber 17, passes through the ports 20, thence through the packing in the chamber 18, and finally to the series of jet-pipes. Each jet-pipe is provided with a lower threaded end which is screwed into a tapped opening of the cover 12, and said jet-pipe is provided with a cap 25, which has a screw-threaded connection with the pipe for the purpose of readily removing the cap therefrom. Each cap 25 is provided with a plurality of radial holes 26, and in the upper end of the cap is formed a vertical central aperture 27.

The jet-pipes 24 are arranged in a series longitudinally of the burner for the purpose of distributing the series of flames within the fire-box of a cooking-stove or the fire-pot of a heating-stove, and as each jet-pipe has a plurality of radial ports, as well as a vertical port, it will be seen that the flame is distributed uniformly throughout the stove for the purpose of thoroughly heating the interior thereof.

To minimize the danger of explosion, the cover 12 is provided with two or more vent-ports 28, each of which is of angular form, so that one end of the port will open into or communicate with the chamber 17 of the burner. The opposite end of each angular vent-port is designed to open through one edge of the cover, and said outer end of the port contains a plug 29, which is secured to the cover by a suitable joint, preferably of a fusible nature. Under normal conditions in the service of the burner the plugs will be retained in position by the material which forms the joint to close the ports against the leakage of the vaporous fuel; but should the burner become clogged in any way and the fuel be retained under pressure within the chamber 17 the plugs are adapted to be forced from the vents, so as to open the latter for the free escape of the vaporous fuel directly from the chamber 17.

One of the important features of our invention consists in arranging the series of ports 20 in the partition and the series of jet-pipes 24 in the same transverse planes of the burner, and thus the fuel is adapted to pass through the port 20 from the chamber 17 and through the packing directly to the burner. This relation of the jet-pipes to the series of ports is advantageous because the fuel will flow directly to the jet-pipes, and thus there will be an equable distribution of the fuel to the series of jet pipes or tubes.

In service the burner is located in a stove of any suitable character and the tank is supplied with hydrocarbon fuel. By opening the valve the fuel is permitted to flow by gravity into the chamber 17, and when the burner becomes heated the liquid fuel is vaporized and passes through the chamber 17, the ports 20, the packing 19, and the jet-pipes to the perforated caps. These caps serve to distribute the flame uniformly throughout the burner, and the radial openings thereof direct the flame over the breast of the fire-box, while the vertical openings direct the flame against the bottom of a cooking vessel which may be fitted on the stove.

Changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what we claim is—

1. A hydrocarbon-burner consisting of a casing provided with a longitudinal partition which subdivides the casing into compartments and is provided with a series of ports, a series of jet-pipes fixed to said casing to communicate with one compartment thereof, a packing in the chamber with which communicate the jet-pipes and the ports of said partition, and means for supplying fuel to the other compartment of the casing, substantially as described.

2. A hydrocarbon-burner comprising a casing provided with a longitudinal partition which subdivides the chamber into compartments and having a series of transverse ports at its lower edge, a series of jet-pipes attached to the casing to communicate with one chamber thereof and arranged in the vertical planes of the transverse ports in said partition, each jet-pipe provided with a radially-perforated cap, a packing in the chamber with which communicate the jet-pipes and the ports of said partition, and a fuel-pipe communicating with the other chamber of said casing, substantially as described.

3. A hydrocarbon-burner comprising a casing provided with a removable cover provided with vent-ports, the safety-plugs retained in said ports by a suitable alloy and adapted to be displaced by pressure of the gas generated within said casing, a longitudinal partition which subdivides the casing into compartments and provided with transverse ports, a



packing in one compartment of the casing, a  
fuel-pipe communicating with the other com-  
partment of the casing, and jet-pipes at-  
tached to the casing to communicate with the  
5 compartment containing the packing, sub-  
stantially as described.

In testimony that we claim the foregoing as

our own we have hereto affixed our signatures  
in the presence of two witnesses.

JOHN J. JORDAN.  
CHARLES THIELE.

Witnesses:

OTTO GROOS,  
E. McCALL.