

No. 646,211.

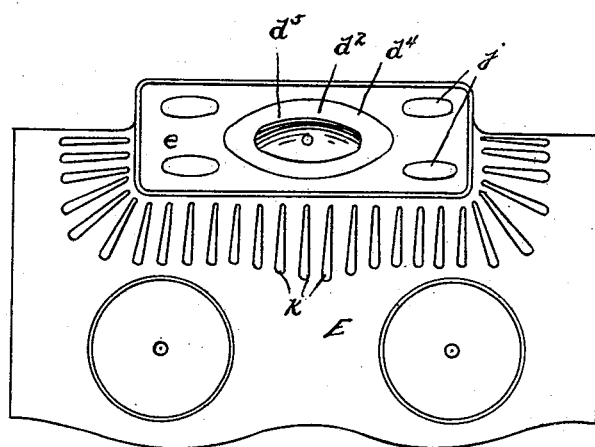
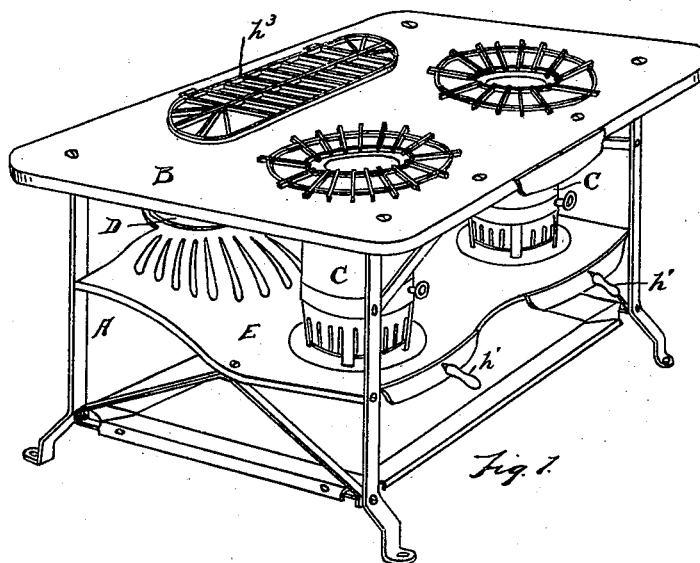
Patented Mar. 27, 1900.

F. P. GLAZIER.
HYDROCARBON BURNING STOVE.

(Application filed June 15, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES
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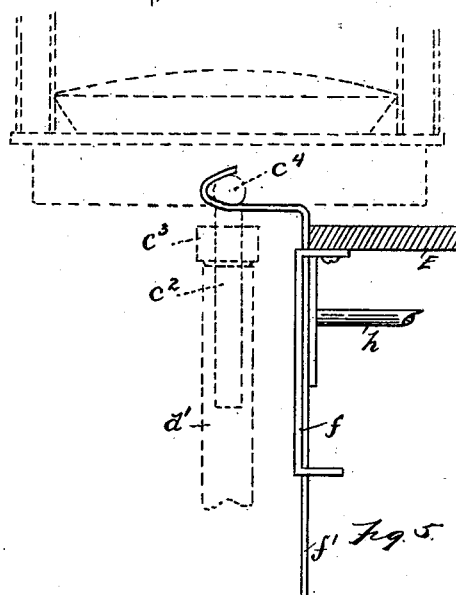
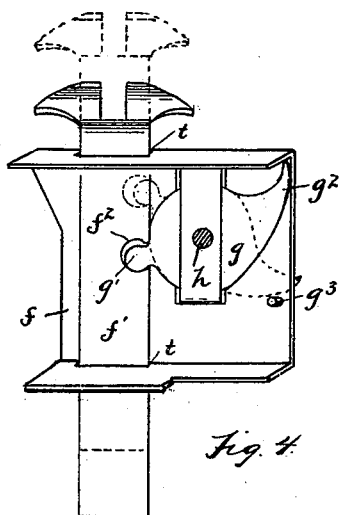
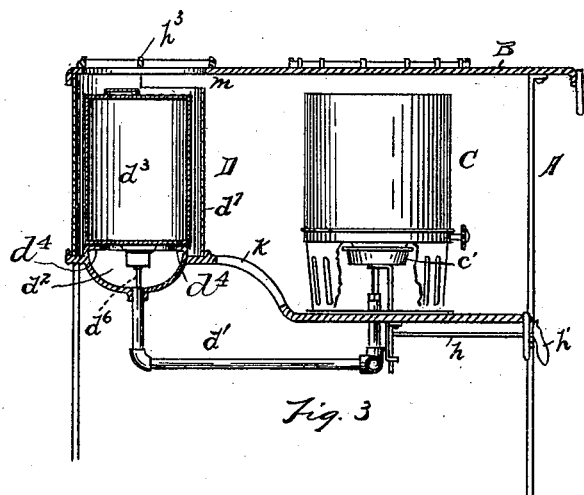
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WITNESSES

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UNITED STATES PATENT OFFICE.

FRANK P. GLAZIER, OF CHELSEA, MICHIGAN.

HYDROCARBON-BURNING STOVE.

SPECIFICATION forming part of Letters Patent No. 646,211, dated March 27, 1900.

Application filed June 15, 1899. Serial No. 720,608. (No model.)

To all whom it may concern:

Be it known that I, FRANK P. GLAZIER, a citizen of the United States, residing at Chelsea, county of Washtenaw, State of Michigan, have invented a certain new and useful Improvement in Hydrocarbon-Burning Stoves; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to stoves for burning liquid hydrocarbon; and it has for its object improvements which relate to the control of the flame or fire in such stoves.

It also relates to improvements in the protection of the hydrocarbon-tank, the improvements being of such a nature that the tank of fuel can be placed in close proximity to the combustion parts of the stove, and thereby the stove can be made much more compact than heretofore.

In the drawings, Figure 1 is a perspective showing a two-burner stove with the fuel-tank under the top of the stove and immediately back of the burners. Fig. 2 is a plan view of the diaphragm which supports the burners and the fuel-tank. Fig. 3 is a cross-section from front to rear, showing one burner and the fuel-tank. Fig. 4 is a front view of the lifting device which controls the access of fuel to the flame. Fig. 5 is a side view of the same lifting device.

A indicates the frame of the stove; B, the top plate; C C, the burners, and D the hydrocarbon-tank.

The burner of the stove (shown in the drawings) is one of that character in which the hydrocarbon is admitted into a heated trough-like structure, which is located just below two cylindrical perforated tubes or chimneys, between which a column of hydrocarbon-vapor rises and mingles with air that enters through the perforations of the chimneys into the combustion-chamber between them. The trough-like structure is sometimes called a "burner" in distinction from the chimneys, although it is perhaps more properly called a "generator."

In carrying out the invention of this appli-

cation the annular trough-like structure c' is held during the time combustion is going on at an elevation such that the fuel from the tank D will flow freely into it through the pipe d' from the regulating-fountain d^2 . By "regulating-fountain" is meant a shallow cup-like structure at the bottom of that part of the shelf or diaphragm E on which the tank d^3 rests. The tank d^3 rests on a part of the shelf E which is higher than that part of the shelf E on which the burners rest. In shape the elevated part of the shelf E conforms to the fountain or tank d^3 , and its shape may be varied as desired. Centrally located on the elevated part e of the shelf is a cup or depression, spoken of as the "regulating-fountain" d^2 , and from the lowermost part of the depression leads the pipe d' . The top of the cup or depression d^2 is partially closed in by an inward-extending flange d^4 , the object of which is to prevent the accidental spattering over of the liquid hydrocarbon. The opening d^5 through the flange is oblong and extends to each side of the mouth of the pipe d' far enough to allow the tank d^3 to be placed on its seat in either of two positions. In one position the valve-stem d^6 will strike the bottom of the cup on one side of the mouth opening into the pipe d' , and in the other position the valve-stem will strike the bottom of the cup on the other side of the mouth-opening. The tank d^3 is a receptacle closed entirely except at one opening through the bottom. This opening is at the end of a short neck and is closed by a valve that opens inward, and the valve is provided with a stem d^6 , that extends downward below the bottom of the tank. The valve-stem d^6 is placed at one side of the middle line from front to rear of the fountain d^3 in order that when the tank is placed on its seat the valve-stem may strike the bottom of the cup at the side of the mouth and not drop into the mouth of the pipe d' . When the valve-stem strikes the bottom of the cup d^2 , the valve is opened and the liquid runs from the tank into the cup so long as air can pass into the top of the tank through the valve. As soon, however, as the regulating-fountain fills to a height sufficient to seal the outlet from the tank d^3 the liquid ceases to run.

The only novel feature which exists in the structure of the tank just described is in the

peculiar construction of the regulating-fountain and in placing the valve to one side of the middle line of the tank d^3 , so that it can be reversed in position or rather placed in position on its seat without giving attention to the way in which it is placed thereon.

The oil in the regulating-fountain d^2 rises just high enough to give full feed of oil in the generating-trough c' when the generating-trough c' is at its lowermost position. The generating-trough c' is provided with a tubular feed-stem c^2 , that is inserted in the up-turned end of the pipe d' . The engagement between the pipe c^2 and the pipe d' is through a packing-ring c^3 , and the pipe c^2 is capable of sliding movement or connection through the packing-ring c^3 , and the sliding movement is produced by means of a lifting device next to be described.

To the frame E of the stove is secured a hanging bracket f , provided with holes t t , through which passes a vertical sliding bar or rod f' . On the bracket f is pinned a lever g . In the drawings it is shown as resembling a two-toothed wheel, one tooth g' engaging in a notch f^2 in the slide f' and the other tooth g^2 serving to engage against the stop g^3 . The lever is actuated by turning the shaft h by means of a hand-lever h' . The upper end of the sliding bar f' is forked and hooked, and the hook engages the cross-pipe c^4 with the vertical pipe c^2 between the branches of the fork, and the engagement between the cross-pipe c^4 and the vertical pipe c^2 holds the generating-trough from escaping either up or down or sidewise from its proper position; but the burner-trough and the pipe c^2 can be moved vertically from its lowermost position, where it is at a proper elevation to be flooded with liquid hydrocarbon, to its uppermost po-

sition, where all the fuel will drop by gravity from the trough into the pipes below it, and the friction of the slide and the actuating-lever in their several bearings allows the burner to be lifted to its uppermost position or lowered to its lowest position or stopped at any intermediate point.

The tank d^3 is guarded from the heat by a wall d' , that is spaced from the tank on all sides, and a circulation of air through this space is provided for by openings j through the shelf on which the tank rests, and a further circulation of air is provided between the guard d' and the burner by cutting a number of holes k through the rising part of the shelf and a long slit or opening m over the top of the guard d' and at its front side. Above the tank is a grid h^3 , which permits free egress of air and which is easily removed when it is desired to remove or replace the tank d^3 .

What I claim is--

1. In combination with the generating-trough of a hydrocarbon-burner, a lifting device provided with a forked hook engaging the burner, a bracket through which the stem of the forked hook reciprocates, and means for actuating the lifting device, substantially as described.

2. In a hydrocarbon-burning stove, a burner-supporting shelf bent upward to form an elevated tank-seat, said shelf being provided with a series of perforations k , bounding said tank-seat, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

FRANK P. GLAZIER.

Witnesses:

CHARLES F. BURTON,
JOHN N. GOODRICH.