

(No Model.)

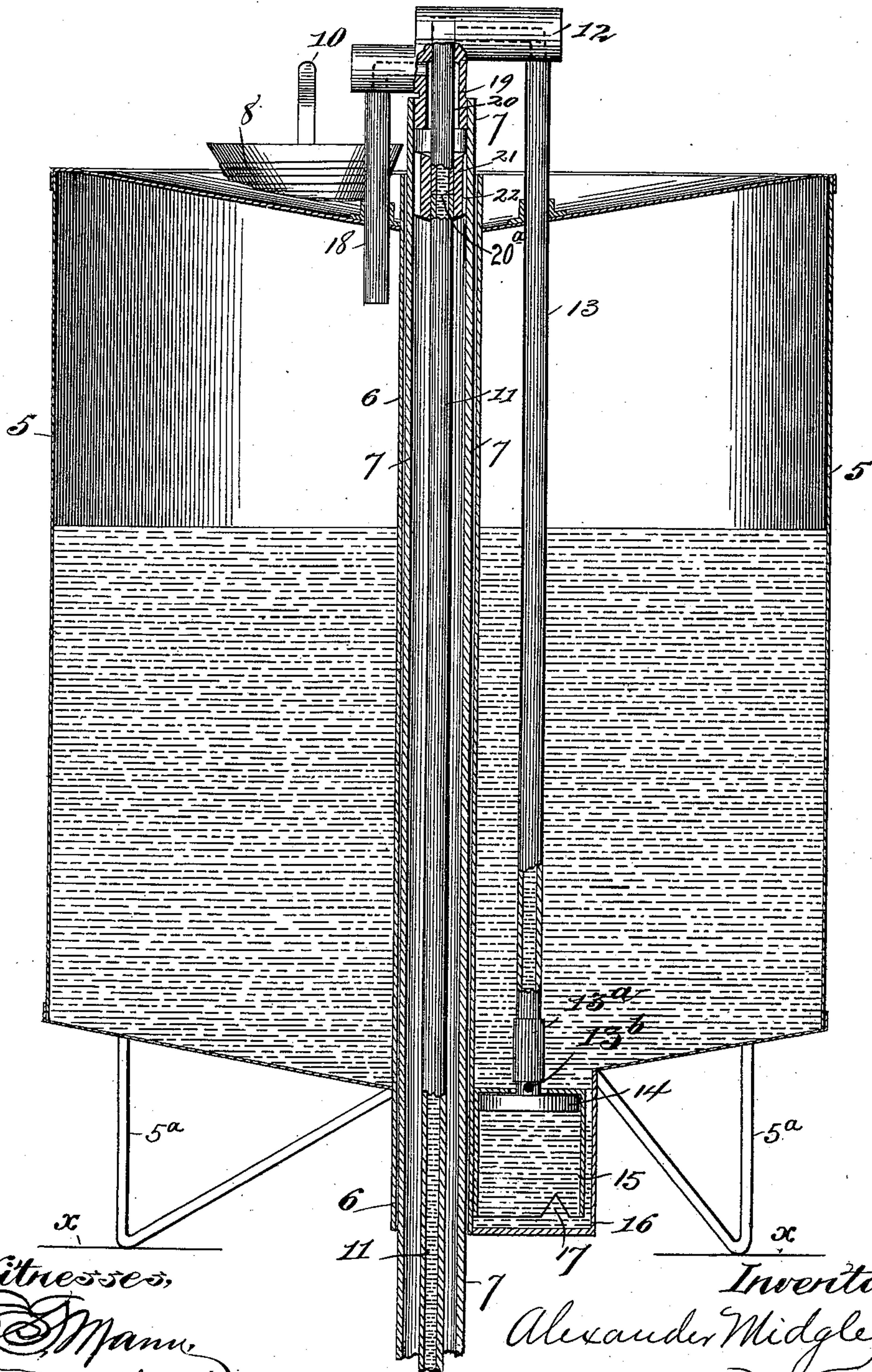
2 Sheets—Sheet 1.

A. MIDGLEY.
SAFETY TANK FOR GASOLENE STOVES.

No. 563,500.

Patented July 7, 1896.

Fig. 1.



Witnesses,

J. E. Mann

Frederick Goodwin

Inventor,

Alexander Midgley

By Offield Towle & Luthie
Attys.

(No Model.)

2 Sheets—Sheet 2.

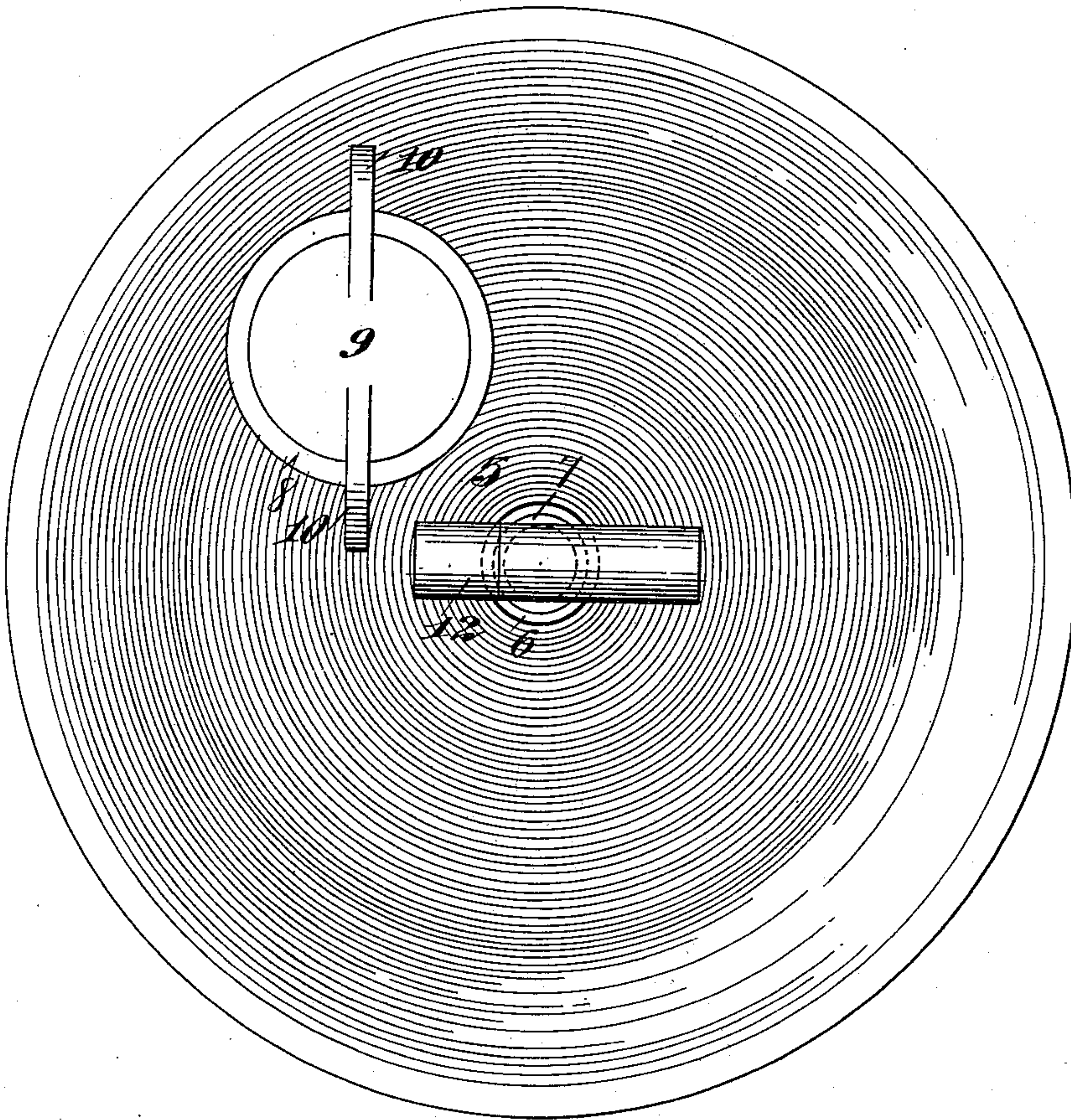
A. MIDGLEY.

SAFETY TANK FOR GASOLINE STOVES.

No. 563,500.

Patented July 7, 1896.

Fig. 2.



Witnesses,

J. D. Mann
Frederick Goodwin

Inventor,

Alexander Midgley
By *Offield, Towle & Luthieum*
Attys.

UNITED STATES PATENT OFFICE.

ALEXANDER MIDGLEY, OF CHICAGO, ILLINOIS, ASSIGNOR OF THREE-FOURTHS TO F. W. STEVENS, ORRIN P. CHAMBERLAIN, AND FRED. A. ALLEN, OF SAME PLACE.

SAFETY-TANK FOR GASOLENE-STOVES.

SPECIFICATION forming part of Letters Patent No. 563,500, dated July 7, 1896.

Application filed January 17, 1895. Serial No. 535,242. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER MIDGLEY, of Chicago, Illinois, have invented certain new and useful Improvements in Safety-Tanks for Gasolene-Stoves, of which the following is a specification.

This invention relates to a tank or reservoir for containing a supply of gasolene for gasolene-stoves; and the object of the invention is to provide a tank which shall afford the highest degree of safety in the use of this recognized dangerous liquid. To this end I construct a tank from which the oil is fed upon the principle of siphonage, the oil being drawn from the bottom of the reservoir and conducted through a suitable pipe to its top and thence discharged downwardly again through a stand-pipe rigidly connected with the stove and projected through the reservoir to or above the top thereof. I have also provided means for breaking the siphon at its bow or junction of the legs. I have also provided means whereby the screw cap or cover for the filling-opening is locked while the can is in position to supply the oil. By means of my invention the spilling of oil by the removal of the can for replenishing is absolutely prevented, while a sufficient head or supply of the oil is left in the stand-pipe to run the burners until the can can be refilled. I also prevent by my construction the filling of the can without the breaking of the siphon and the raising of the can from its operative position.

In the accompanying drawings, Figure 1 is a sectional elevation through the stand-pipe. Fig. 2 is a plan view of the top of the can, showing the parts mounted thereon.

In the drawings, let 5 represent the can, which in the form shown is cylindrical, with the top and bottom slightly conical. This can has supporting-legs 5^a, which are adapted to rest on a suitable frame or stand, (indicated by the lines *x*.) The heads of the can are centrally perforated, and the tube 6 is secured in these perforations and serves as a guide for a stand or feed pipe 7, which is to be rigidly secured with the stove and the upper end of which projects above the top of the can, as seen in Fig. 1.

The upper cap or cover of the can is pro-

vided with a screw-threaded nipple 8, to which is fitted a threaded plug 9, having the thumb-pieces 10, by means of which it is unscrewed, and which also serve as members of a stop or locking device.

Within the stand-pipe 7 a supply-tube 11 depends to a point below the bottom of the can, where it opens into the tube 7. Said supply-pipe communicates through an apertured cross-head 12 with the tube 13, which latter passes through the upper head of the can and extends parallel to the tube 7, having a piston 14, working within a cylinder 15, arranged in a subchamber or well formed by the casing 16. The stem of the cross-head has an enlarged bore, and a pipe 20 passes through this bore and communicates with the longitudinal aperture of said cross-head at its upper end, the lower end of said pipe being seated upon the upper end of the pipe 11. The joint is indicated by the heavy line 20^a, Fig. 1. The pipes 11 and 13, depending pipe 20, and cross-head 12 constitute the siphon. The lower end of the cylinder 15 is open and is provided with a notch 17 of such height that when the piston is lowered the apex of the opening formed by the notch will be above the upper surface of the piston. A vent for the air contained in the tube 7 is provided by the pipe 18, which communicates with the depending member 19 of the cross-head, the latter being adapted to enter the upper end of the pipe 7 tightly. A plug 21, which is tightly fitted to the bore of pipe 7, is provided with scores 22 to permit the escape of air from the pipe through the enlarged bore of the depending portion 19 of the cross-head and into and through the pipe 18 into the space above the oil. The plug 21 forms a support for the pipe 11 and a guide for the pipe 20.

The operation is as follows: When the can is in position for use, the tube 7 projects through the tube 6 and embraces the portion 19 of the cross-head tightly, and the latter being formed integrally with the escape-pipe 18 and cross-head 12 these parts, together with depending pipe 20, are raised to the position shown in Fig. 1. The tube 13, forming one leg of the siphon, is also raised, thus

moving the piston 14 upwardly within the chamber. Said pipe 13 has an enlargement 13^a, which quite accurately fits the aperture in the head of the cylinder 15, while the tube 13 is provided with an aperture 13^b in its side wall, through which the oil may enter the tube. While the enlarged section 13^a is passing upwardly through the aperture a sufficient quantity of oil will move upwardly through the tube 13 to establish a flow of oil through the siphon and discharge it into the stand-pipe 7 below the bottom of the can, and after such flow is established it will be maintained through the aperture 13^b so long as the siphon is not broken by the removal of the can. The air in the pipe 7 will escape through the passage 18 into the can above the oil and permit an immediate supply to the burners.

It will be observed that when the can is in position and the oil is being supplied through the siphon the screw-cap 9 cannot be removed, because the thumb-pieces 10 contact with the cross-head 12. When it is desired to fill the can, it is lifted up, whereupon the siphon will be broken by the separation of the pipes 20 and 11 and of the pipe 7 from the sleeve 19, and when the can is raised clear of the stand-pipe the cross-head will drop until arrested by the tube 6, thus passing below the plane of the thumb-pieces of the screw-cap, whereupon the latter may be removed for filling. Of course the oil will fill the tube 7 to the level of the oil in the can, which will provide a sufficient head of oil to supply the burners during the replenishing of the can.

Obviously some of the details of construction may be considerably varied. For example, the means for establishing a flow of oil through the siphon may be varied without departing from the spirit and scope of this invention. Likewise the vent for the air confined in the stand-pipe may be changed, and the locking of the cap for the filling-opening may be accomplished in other ways than by the engagement of its thumb-pieces with the cross-head, although I prefer the arrangement shown, because the lifting of the can is prerequisite to the unscrewing of the cap.

I have shown the stand-pipe passing through a central opening in the body of the reservoir. Obviously, this stand or discharge pipe might be carried up outside of the reservoir. I have also shown one of the legs of the siphon as being fixed within the stand-pipe and the other leg as being supported by the reservoir, and this arrangement I prefer, because when the can is lifted or removed from its operative position with reference to the discharge-pipe the siphon is thereby broken, and when the can is placed in position for use the leg of the siphon carried thereby is raised, thus locking the screw-cap of the filling-opening. I do not, however, confine my invention to these precise details of construction.

I claim—

1. A supply tank or reservoir having pipes extended therethrough and communicating at their upper ends to form a siphon, one of said pipes communicating with the reservoir near its bottom and having a piston attached thereto and said pipe being slidably connected with the reservoir, substantially as and for the purpose described.

2. The combination with a tank or reservoir, of a discharge or stand pipe and a siphon composed of pipes forming the branches or legs thereof, one of which legs is supported by the reservoir and communicates with the interior of the reservoir near its bottom and the other of said legs being arranged within the stand or discharge pipe and adapted to be put in communication with its fellow by the placing of the tank in position for use, substantially as described.

3. The combination with a liquid tank or reservoir, of a stand-pipe or discharge-pipe adapted when in position to extend above the level of the liquid in the reservoir and a siphon for discharging the liquid comprising in combination two pipes, one of which is slidably connected with the reservoir and provided with a piston, a cylinder in which said piston works and to which the liquid is admitted above said piston when the latter is in its lowest position and the other leg of the siphon being arranged in the discharge-pipe and adapted to be put into communication with and separated from its fellow by the placing and removal of the reservoir respectively, substantially as described.

4. The combination with a gasoline-tank, of a siphon for discharging the liquid therefrom comprising a pipe constituting one leg of the siphon, and having a piston secured thereto, a cylinder in which said piston works, a liquid-chamber concentric to said cylinder, a second pipe constituting the other leg of said siphon and extending through said reservoir, and discharging below the bottom thereof, a discharge-pipe surrounding said leg and also extending through the reservoir and adapted to communicate with the leg of the siphon carrying the piston whereby when the reservoir is put in place said leg is lifted thus reciprocating the piston and forcing the oil upwardly through said leg to establish a flow, substantially as described.

5. The combination with a tank or reservoir, of a discharge or stand pipe and a siphon composed of pipes forming the branches or legs thereof, one of which legs is supported by the reservoir and communicates with the interior of the reservoir near its bottom and the other of said legs being arranged within the stand or discharge pipe and adapted to be put in communication with its fellow by the placing of the can in position for use, and a vent or escape for the air contained within the stand or discharge pipe, substantially as described.

6. The combination with a gasoline tank or reservoir, of a siphon having the legs or

branches thereof separable and one of said legs being movable with reference to the reservoir, a pump the piston whereof is connected with said movable leg, and a stand or discharge pipe surrounding the other leg and adapted to engage the movable leg whereby to reciprocate the pump-piston to establish a flow of oil, substantially as described.

7. In a gasolene-tank, the combination with a discharge-pipe, of a siphon having its legs separable and one of its legs being adapted to be lifted by the placing of the reservoir upon

the stand-pipe, a filling-opening in the head of the can and a screw cap or cover therefor adapted to engage the movable member of the siphon when the latter is raised and in operative position and to be released when the tank is removed from the stand-pipe, substantially as described.

ALEXANDER MIDGLEY.

Witnesses:

C. C. LINTHICUM,
N. M. BOND.