W. M. HIBBITT.

SAFETY FEED DEVICE FOR HYDROCARBON BURNERS.

APPLICATION FILED JAN. 5, 1909.

989,359. Patented Apr. 11, 1911.

Fig. 1.

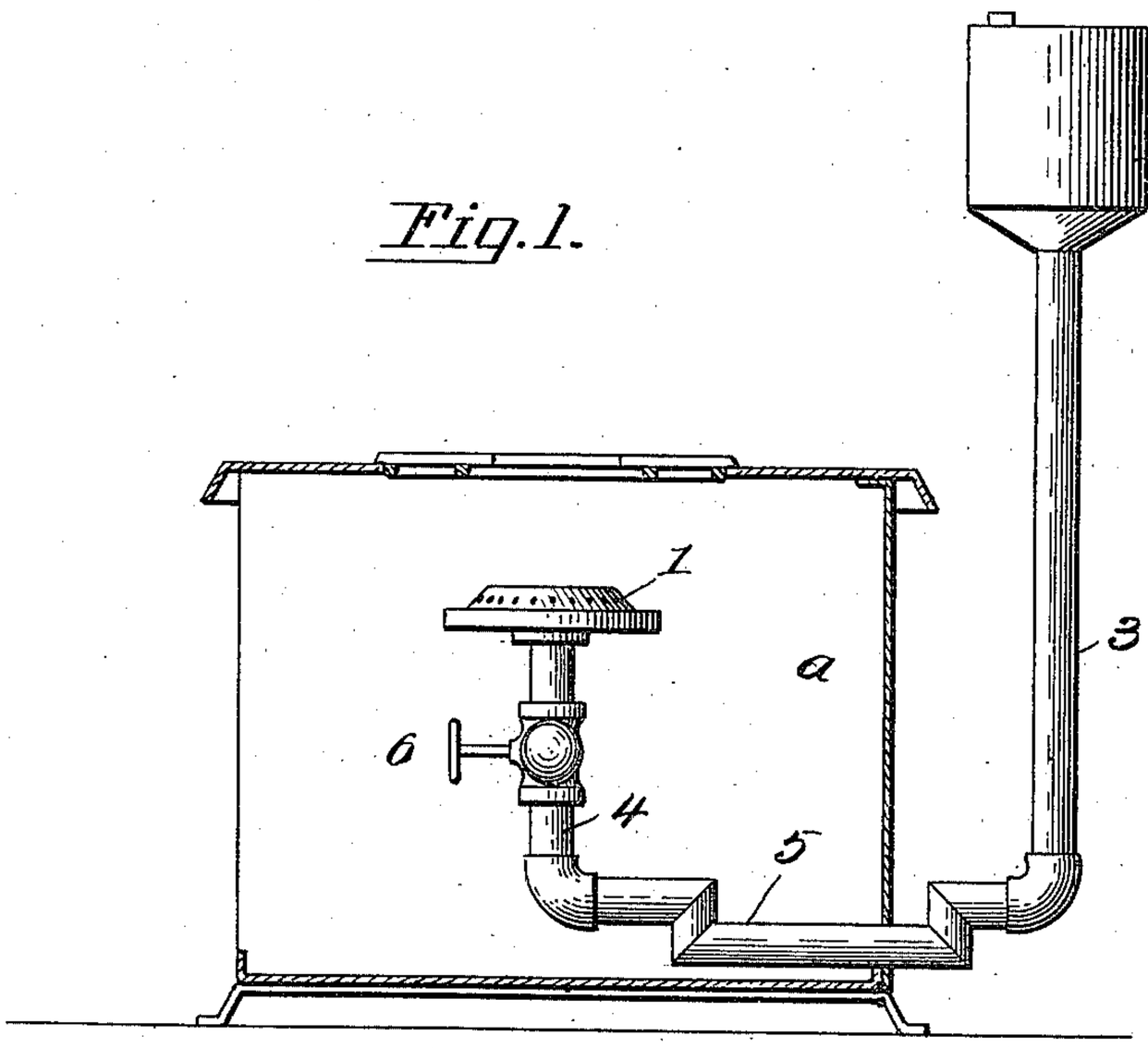
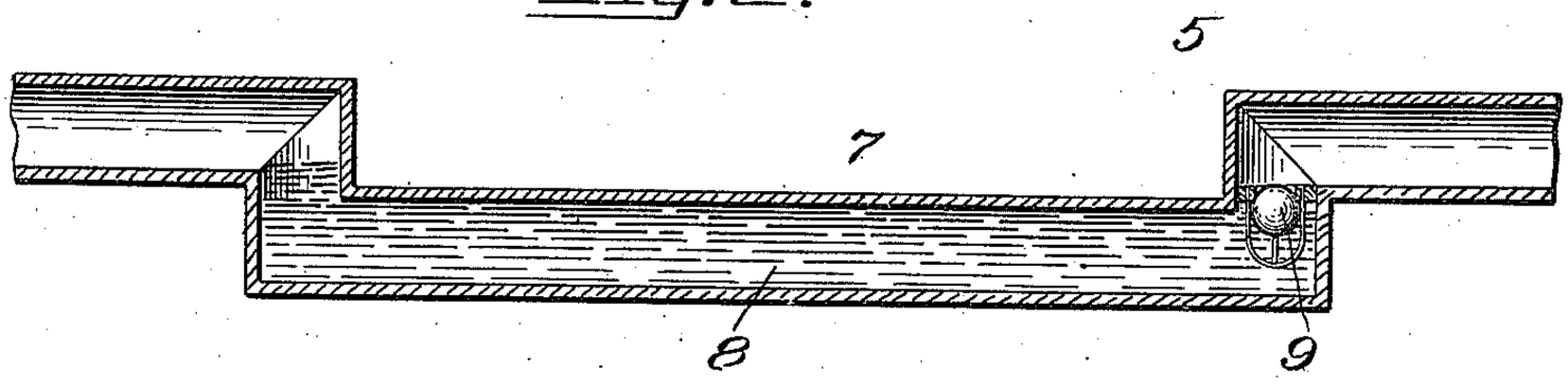


Fig. 2.



Witnesses
F. C. Gibson.
J. W. Garner

Inventor
Walter M. Hibbitt.

By Victor J. Evans
Attorney

UNITED STATES PATENT OFFICE.

WALTER M. HIBBITT, OF LEBANON, TENNESSEE.

SAFETY FEED DEVICE FOR HYDROCARBON-BURNERS.

989,359. Specification of Letters Patent. Patented Apr. 11, 1911.

Application filed January 5, 1909. Serial No. 470,758.

To all whom it may concern:

Be it known that I, WALTER M. HIBBITT, a citizen of the United States, residing at Lebanon, in the county of Wilson and State of Tennessee, have invented new and useful Improvements in Safety Feed Devices for Hydrocarbon-Burners, of which the following is a specification.

This invention is an improved safety feed device for hydrocarbon burners adapted to keep the liquid hydrocarbon in the pipe immediately adjacent the burner separated from the liquid hydrocarbon in the reservoir and the pipe immediately connected to the reservoir so that flame can not possibly pass from the burner through the feed pipe to the reservoir, the said device being also adapted to regulate the passage of the liquid hydrocarbon from the reservoir to the burner and prevent an excess quantity from being fed to the burner.

With these and other objects in view, the invention consists essentially in a liquid hydrocarbon feed duct for a burner, said duct having a depressed trap portion to contain a quantity of mercury and being further provided with a check valve to close against back pressure as hereinafter described and claimed.

In the accompanying drawings:—Figure 1 is a sectional view of a gasolene stove showing the burner thereof provided with a safety feed device constructed in accordance with my invention, the burner, the separate feed device and the reservoir being shown in elevation. Fig. 2 is a vertical longitudinal sectional view of that portion of my improved safety feed device which contains the trap and check valve.

My improved safety feed device is for use in connection with any form of burner supplied by gravity with liquid hydrocarbon fuel from a reservoir. For the purposes of this specification, I show the said safety feed device in use in connection with the burner 1 of a gasolene stove, the stove being indicated at *a*, the reservoir at 2, the pipe which immediately leads from the reservoir at 3, the pipe which is immediately connected to the burner at 4 and my improved safety pipe or duct at 5. The usual valve for the burner is indicated at 6. In accordance with my invention my improved feed duct or device 5 is provided with a depressed offset portion 7 which constitutes a trap for the reception of a sufficient quantity of mercury or other suitable material 8 to fill the horizontally depressed portion 7. At the end of the said trap, nearest the pipe 3 which leads directly from the reservoir is a check valve 9 which is submerged in the mercury.

In the operation of the invention, the gasolene or other liquid hydrocarbon passes from the pipe 3 to the burner pipe through the trap formed by my improved safety device, the mercury which fills the trap causing the liquid hydrocarbon to pass drop by drop therethrough at the surface of the mercury, the drops of the liquid hydrocarbon having to displace the mercury in order to pass in obedience to the pressure from the reservoir along the surface of the mercury from the feed pipe to the burner pipe. Hence the mercury effectually prevents the liquid hydrocarbon from flowing in an excessive quantity from the feed pipe to the burner pipe. Although the liquid hydrocarbon thus passes drop by drop from the feed pipe to the burner pipe it may accumulate in the latter in the quantity required to keep the burner supplied, but in the event of fire in the burner pipe, flame is effectually prevented from passing back to the feed pipe through the safety device by reason of the presence of the mercury or other fluid seal in the trap of the safety device. Furthermore in the event of fire in the burner pipe or at any point between the burner and the trap the consequent production and pressure of gas in that portion of the pipe will cause the check valve 9 to close so that the check valve will coact with the mercury or other fluid seal to prevent the passage of fire from the burner pipe to the feed pipe.

What is claimed is:—

The combination with an oil reservoir, of a feed pipe leading from its bottom, a burner head having a centrally depending stem, a cut-off valve located within said stem, a trap comprising a relatively long horizontal tubiform portion and upright relatively

short tubiform arms connected with the stem and said feed pipe, a quantity of mercury entirely filling the said trap, and a check valve mounted in the upright arm of the said trap contiguous the feed tube and held submerged in the quantity of mercury, substantially as described.

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

WALTER M. HIBBITT.

Witnesses:
JOHN A. SPEARS,
E. H. DE POY.