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VOLATILE FLUID LIGHTER

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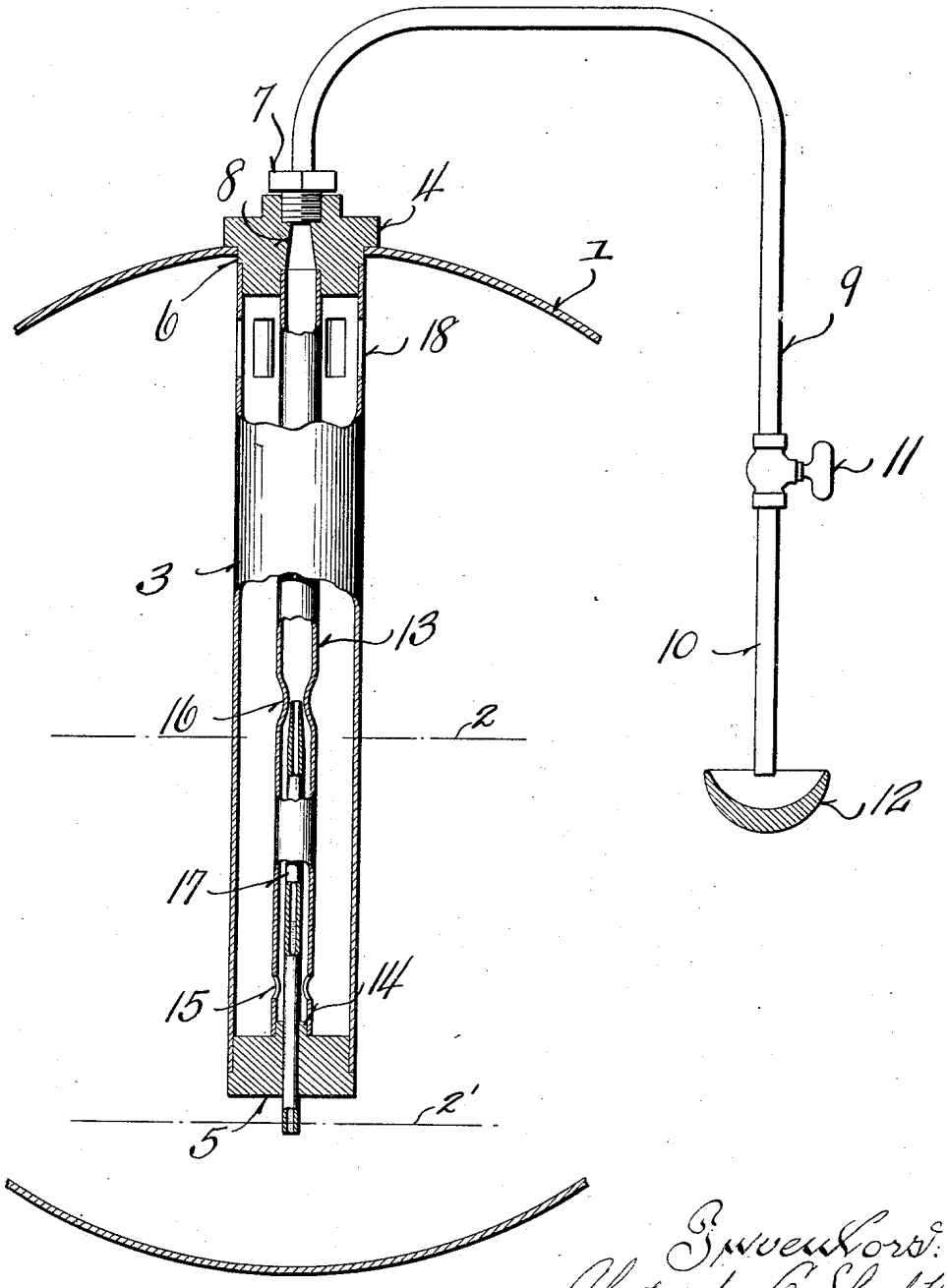

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UNITED STATES PATENT OFFICE

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VOLATILE-FLUID LIGHTER

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This invention relates to volatile fluid lighters.

Objects of this invention are to provide a device for use on gasoline or similar stoves, which furnishes means for lighting and initially heating the burner, such burner being usually equipped with a generator tube. The primary object of this invention is to provide a novel form of apparatus which is so constructed that it may be connected or positioned within a gasoline tank and supply gas, that is to say, carbureted air, adapted to be lighted by a match with the same facility as an ordinary gas burner, and which, after it is lighted, will draw a richer mixture from the apparatus and heat the burner, and also light it, thereby avoiding all danger of spilling or flooding, which has heretofore existed in the gasoline burners as usually constructed.

Further objects of this invention are to provide a device which is extremely simple, which has a relatively small number of easily produced parts and which is easily insertible within a gasoline supply tank.

An embodiment of the invention is shown in the accompanying drawing, in which:

The single figure is a view somewhat diagrammatic, showing in section a portion of the tank and apparatus connected thereto.

Referring to the drawing, it will be seen that the gasoline supply tank is indicated by the reference character 1, and it is usual to fill these tanks to approximately between the level indicated at 2 and 2'. The gasoline tank is provided with an aperture, through which a sleeve 3 is inserted, such sleeve being closed at its upper end by means of a flanged head 4, and closed at its lower end by means of the head 5. The sleeve is preferably inset with reference to the cylindrical surface of the head 4, so that it will be flush with such cylindrical surface to thereby facilitate the initial insertion of the tube. This head is welded, brazed or otherwise secured to the tank and to the sleeve 3. Similar processes may be employed for securing the head 5 in place, although, obviously, other processes or other means could be used. The head 4 is provided with a fitting 7 screwed thereto and communicating with the upwardly converging opening 8. This fitting communicates with the pipe 9 which leads to the discharge tube 10. Communication with the discharge tube is controlled by the valve 11. If desired, the tube 9 may be flexible, so that the device can be used for any of several burners. It also may be rigid, as shown in the drawing, and the tube 10 may be positioned above a cup 12. The burner is not shown in the drawing, as the construction is well-known.

Within the tube 3, a smaller central tube 13 is positioned, and opens at its upper end into the passageway 8. At its lower end it is carried by a reduced portion 14 of the head 5, and is provided adjacent such lower end with apertures 15. The tube 13 is contracted intermediate its ends, as shown at 16, to form a Venturi tube. Within the tube 13 a smaller fuel tube, or nozzle 17 is positioned, and opens at its bottom end through the head 5. The upper end of the nozzle is positioned in the Venturi tube, or portion 16. The upper portion of the tube 3 is provided with a plurality of apertures 18, located above the liquid level 2.

In operation, the air under pressure in the upper portion of the tank passes downwardly through the openings 18, enters the tube 13 through the openings 15, passes upwardly, and when the valve 11 is open, passes outwardly through the discharge, or ignition pipe 10. During this passage, the somewhat enriched air in the upper portion of the tank is additionally enriched due to the suction produced in the top of the nozzle 17, so that after a few seconds, a relatively rich mixture is discharged from the pipe 10. The resulting flame from the pipe 10 is used to heat the burner and generator tube (not shown), and after sufficient heating, is used to light the burner, when the burner is turned on.

It is apparent that a lessening of the danger of fire over the usual form of priming cup construction is provided by this volatile fuel lighter; there is no liquid gasoline discharged by the apparatus. Instead, the burner may be lighted with the same facility as ordinary gas. In addition to this, this mixture is relatively thin at starting and danger from fire is reduced, and after a few seconds the flow

then becomes richer and gives, consequently, more heat at the flame. Clearly, this apparatus may be provided with a flexible pipe in the place of pipe 9, if desired, so that any number of burners may be heated and lighted with a single apparatus.

Attention is directed to the fact that the normal liquid level within the pipe 17 or nozzle, is at a point intermediate its ends, consequently, the solid stream of fuel cannot flow through the pipe 17, thus eliminating the danger of flooding.

It will be seen that a very simple and highly serviceable device has been provided by this invention, which is easy to operate and which may be cheaply constructed.

While the expression "gasoline" is used in the claim, it to be understood that this expression is not intended as a limitation, as any suitable volatile fuel may be employed.

Although the invention has been described in considerable detail, such description is intended as illustrative rather than limiting, as the invention may be variously embodied and as the scope of such invention is to be determined as claimed.

We claim:

A volatile fuel lighter for a gasoline stove having a tank adapted to contain gasoline, a fitting extending into the upper portion of said tank, a sleeve carried by said fitting and projecting downwardly into said tank below the fuel level and having openings above the fuel level, a lower head closing the bottom of said sleeve, a nozzle passing through said lower head and projecting upwardly within said sleeve, a tube located within said sleeve and surrounding said nozzle and having a constricted portion adjacent the upper end of said nozzle and opening adjacent its lower end into the space within said sleeve, and a pipe communicating with the upper end of said tube, said pipe being provided with a cut-off valve.

In testimony that we claim the foregoing we have hereunto set our hands at Milwaukee, in the county of Milwaukee and State of Wisconsin.

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