May 29, 1951 A. F. REILLY 2,555,294

LIGHTER WICK

Filed Jan. 27, 1948

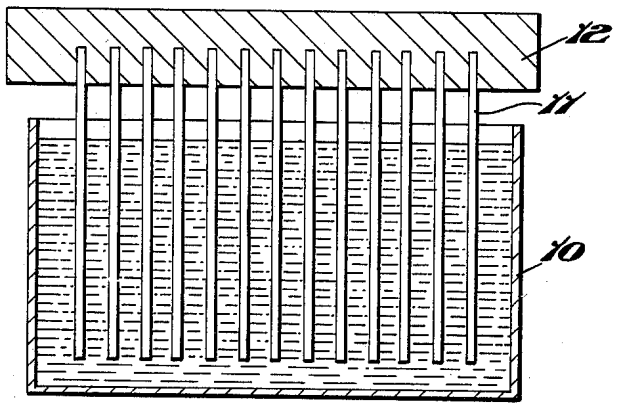

Fig. 1.

Fig. 2.

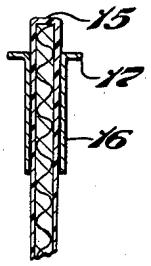

Fig. 3.

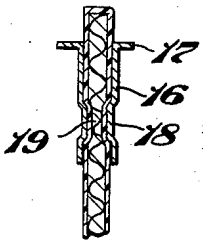

Fig. 4.

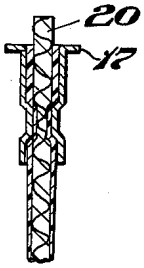

Fig. 5.

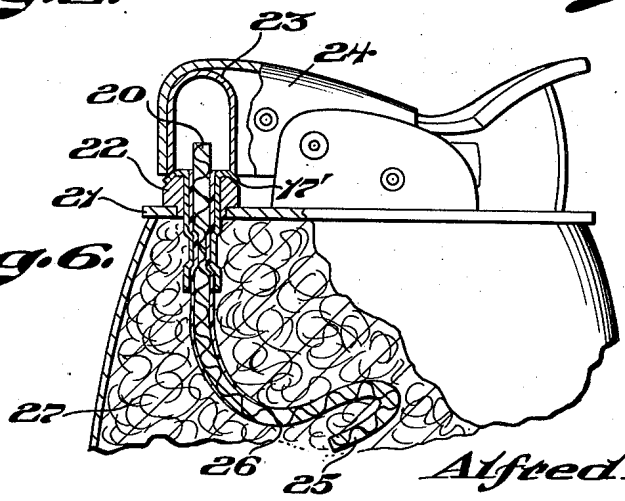

Fig. 6.

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UNITED STATES PATENT OFFICE

2,555,294

LIGHTER WICK

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Application January 27, 1948, Serial No. 4,554

2 Claims. (Cl. 67—69)

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This invention relates to a pyrophoric lighter, and more particularly to the control of the fluid or fuel which is fed to the ignition point.

In a pyrophoric lighter it is usual for a wick to extend through some supporting structure mounted on the top wall of the fuel tank, and if this wick is not tight in this supporting structure, there may be a leak of the fuel from the fuel tank. Also, if there is a considerable exposed surface of the wick within the tank, fuel in excess of that which it is desired is picked up and transmitted to the ignition to cause too large a flame.

One of the objects of this invention is to provide a means of limiting the amount of fuel which will be picked up from the fuel tank and transmitted to the ignition point.

Another object of this invention is to provide this control by a coating on the wick which will prevent the coated portion of the wick from picking up fuel and transmitting it to the point of ignition.

Another object of this invention is to utilize the coating which is placed upon the wick so as to provide a tight joint between the wick and the supporting structure through which it extends.

Another object of this invention is to provide an arrangement so that the wick itself may be constricted sufficiently to limit the transmission of fuel through it.

Another object of this invention is to utilize, by the method of coating, an arrangement so that the coating may be tapered whereby it may be more easily inserted into the tube, and then drawn up tight at substantially the desired point where it is desired to seal the wick in the tubing.

With these and other objects in view, the invention consists of certain novel features of construction as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings:

Figure 1 illustrates the dipping of a plurality of wicks into a coating solution;

Figure 2 is a sectional view illustrating in a somewhat exaggerated manner the coating as it finally hardens upon one of the wicks illustrating the tapered effect or varying thickness of the coating on the wick;

Figure 3 illustrates the wick as inserted in a tube which is in turn positioned in the top wall of the lighter;

Figure 4 is a view illustrating the tube after it has been compressed so as to firmly mount the wick in the tube and to partially restrict the wick;

Figure 5 is a view similar to Figure 4 but illustrating the top end of the coating removed, such for instance as may occur after ignition of the wick; and

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Figure 6 is an elevation partly broken away to more clearly show the wick and its tube mounted in a pyrophoric lighter.

In proceeding with this invention, I dip a plurality of wicks into the coating solution and then suspend these wicks to dry so that the coating solution will move downwardly upon each of them, which provides a tapered thickness of coating, the same hardening in this shape. The wick will then be drawn into a tube, such as shown in Figure 3, with its largest end outwardly, and the arrangement is such that a good tight fit will be provided in the tube. Thereafter, the tube will be crimped so as to firmly mount the wick in position, and then the whole will be mounted in a pyrophoric lighter. Lighting of the wick will burn off the coating at its outer end leaving the coated portion in the tube and extending to a point short of the end of the wick, whereby the amount of wick exposed will govern the pick-up of such an amount of fuel as is desired to be transmitted to the point of use.

With reference to the drawings, 10 designates a tank into which a plurality of glass wicks 11 are dipped by the wicks being mounted in a block 12 and being lowered into the tank a certain distance. The wicks are then suspended and allowed to dry after being lifted from the tank, which will cause a coating designated 13 to occur on the wick to a point about up to the point 14, the coating gradually increasing in thickness from this point to the end 15. This coating will be of some sort of material which will prevent the wick from picking up the fuel in the fuel tank. A clear lacquer or a colored lacquer has been found to be satisfactory for this use.

A tube 16 of some ductile material is provided having a flange 17, and the wick, coated as above described, is drawn into this tube with the large end 15 upwardly. (See Figure 3.) The taper will cause the wick to become tighter and tighter as drawn further into the tube, and the sizing is such that at the point shown in Figure 3 the wick will be sufficiently tight to exclude air or prevent fuel in the tank from extending along the inside of the tube outwardly. The tube is then crimped as at 18 so as to firmly secure the wick in the tube which also confines the wick structure so as to limit the passage of fuel therethrough as shown at 19.

The tube and wick are mounted in the pyrophoric lighter which has a top wall 21 and a wick-supporting member 22, by forcing the tube into this portion 22, and thereafter removing the coating from the portion 20, such as by burning. A snuffer 23 serves to engage the flange which is bent downwardly as at 17' so as to form a good tight seal therewith. The snuffer is moved to and from wick covering position by the lever 24.

The end portion 25 up to a location substan-

tially 26 is left uncoated and it is this portion only that will pick up fuel from the fuel tank 27. If less fuel is desired to be picked up, the uncoated portion will be made shorter. If a greater amount is to be picked up, the exposed portion will be greater. This will be governed in accordance with the character of fuel used.

Claims to the sleeve with the restriction are the subject of my co-pending application Serial No. 213,770 filed March 3, 1951.

I claim:

1. The method of forming a tight joint between a lighter wick and its supporting tube which comprises coating the wick with a surrounding covering having a tapered wall to provide a progressively increasing diameter by dipping and hanging the same to dry, then drawing said wick into the supporting tube, smallest end first, until said taper fits tightly therein.

2. In a lighter, a fuel chamber having a top wall, a tube of substantial length extending through said top wall, a wick extending through

said tube and beyond the same at its opposite ends and a coating on said wick, which coating is tapered as to thickness with its thickest wall adjacent the outer end of the tube.

ALFRED F. REILLY.

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