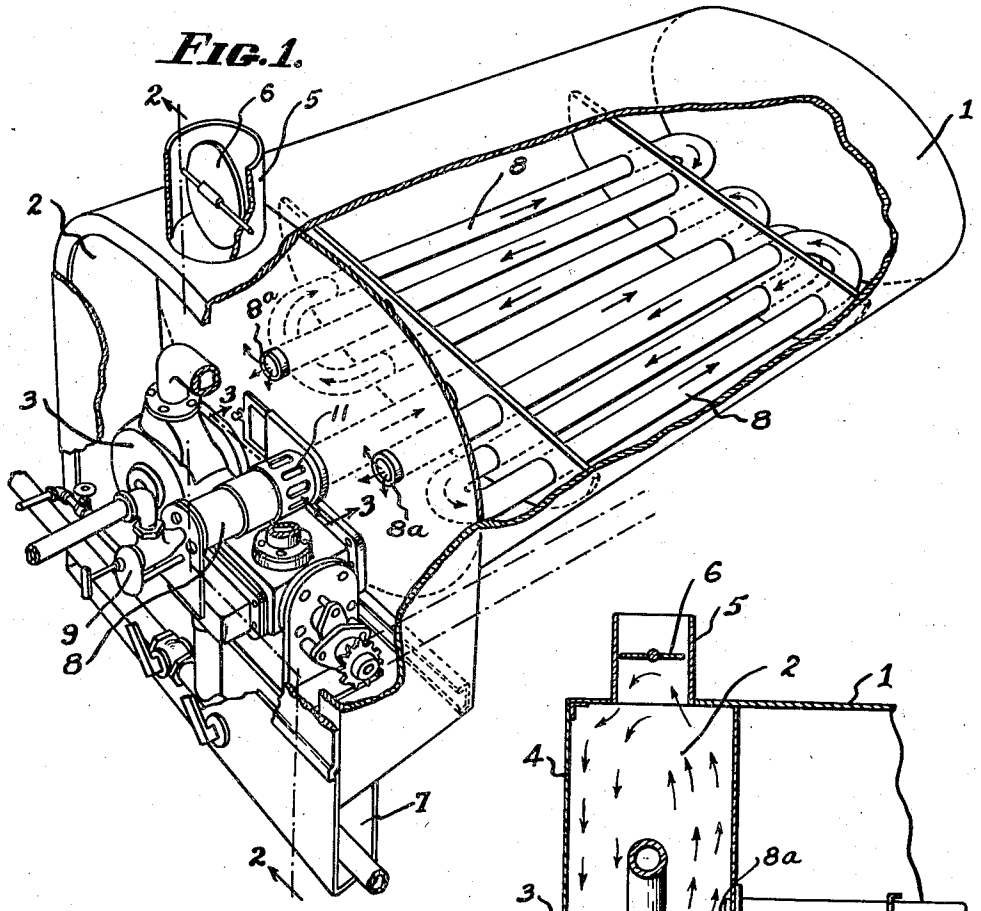
Nov. 8, 1938. H. HAUPT 2,136,242

APPARATUS FOR DISTRIBUTING LIQUIDS ON ROADS

Original Filed July 19, 1933

FIG. 1.



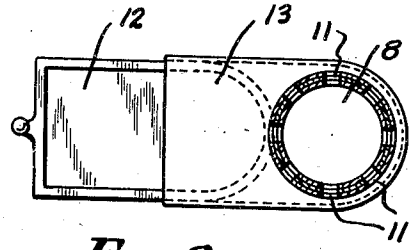


FIG. 3.

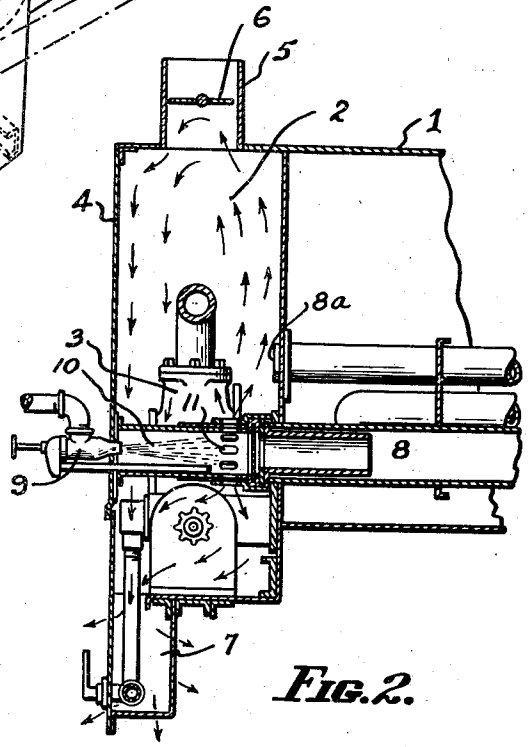


FIG. 2.

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UNITED STATES PATENT OFFICE

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APPARATUS FOR DISTRIBUTING LIQUIDS ON ROADS

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Original application July 19, 1933, Serial No. 681,152. Divided and this application March 4, 1937, Serial No. 129,009

6 Claims. (Cl. 126—343.5)

This application is a division of the co-pending application filed July 19, 1933 by myself and bearing Serial No. 681,152 for Apparatus for distributing liquids on roads.

My invention relates to liquid distributing apparatus, and more especially to apparatus of that character which is mounted on a truck or the like to be moved along and over a roadway or street for distributing liquid materials on the road or street surface to act as a binder or surfacing material or both for the other materials of the road or street. My invention is especially concerned with apparatus of the character just described in which provision is made for forcibly discharging the liquid through the discharging means and in which provision is made for heating the liquid.

An object of my invention is to provide efficient means for heating the liquids used throughout the complete apparatus. Such liquids, for example, are usually bituminous materials, such as asphalts of various kinds, or tar. Such materials are liquid only when heated and it is an object of my invention to keep these liquids in heated and suitable condition not only in the tank from which they are taken, but in all the passages of the pressure discharging system of the apparatus.

It is a further object of my invention to provide means for heating the discharging means of the apparatus without at the same time heating the tank. Because of the tendency of the materials used in my device to freeze at a relatively high and normal temperature, it is necessary at times to thaw out the discharging apparatus when the tank itself is empty in order to place the discharging mechanism in condition for operation in filling the tank, one of its numerous functions. The different functions of the discharging apparatus are fully described in my copending application filed July 19, 1933 and bearing Serial No. 681,152.

It is also an object of my invention to provide heating means for both the chamber containing the discharging means and the tank for holding the material, which may be so manipulated, without the necessity of turning off the heating burner itself, as to heat the chamber containing the discharging means alone without the danger of overheating an empty tank.

These and other objects of my invention which will be set forth hereinafter or will be apparent to one skilled in the art upon reading these specifications, I accomplish by that certain construction and arrangement of parts of which I shall now describe a preferred embodiment.

The type of apparatus to which my present invention refers is the type shown in my copending application Serial No. 681,152 filed July 19, 1933 in which the material to be distributed is contained in a tank at one end of which is an enclosed chamber containing the discharging mechanism. A flue having a burner projecting heat into one end thereof, passes first through the chamber and then through the tank and finally discharges into the chamber. This flue has apertures in the walls within the portion projecting through the chamber and contains a damper which permits stopping off the flue between the chamber and the tank. I also preferably employ a damper within a stack located at the top of my chamber and vents in the bottom thereof. In normal operation when the tank is full of material and the distributor functioning the damper within the flue is open so that the hot gases from the burner flow completely through the flue, heating the chamber and the tank and discharges out into the upper portion of the chamber and out through the stack past the damper in its open position. When I desire to increase the heat in the chamber and diminish or shut off the heat in the tank, I close the damper in the flue between the chamber and the tank and if I desire a very great amount of heat in the chamber I also close the damper in the stack. This prevents the hot gases from the burner passing into the portion of the flue within the tank and forces the hot gases through the apertures in the flue and directly into the chamber. Due to the damper in the stack being closed, the hot gases are forced to circulate through the chamber and out through the openings in the lower end thereof.

Reference is now made to the drawing which forms a part of the specification and in which:

Figure 1 is a perspective view, partly diagrammatical, illustrating the general embodiment of the tank and the chamber of my invention.

Fig. 2 is a partial vertical longitudinal section taken on the section line 2—2 of Fig. 1.

Fig. 3 is a section taken on the section line 3—3 of Fig. 1 and showing the damper within the flue.

In the practice of my invention, I provide the tank 1 for holding the bituminous material to be discharged upon the road. At one end of the tank 1 is a chamber generally shown at 2 within which is contained my distributing device comprising a pump, a motor and a set of valves gener-

ally shown at 3. In Fig. 1 of the drawing, this chamber is shown with the back cover 4 removed but in normal operation it is enclosed as illustrated in Fig. 2. I provide a stack 5 at the top of the chamber 2 within which is positioned a closable damper 6 which is operated by the usual damper handle well known in the art and not shown in the drawing. At the lower portion of the chamber 2 I provide apertures or outlets 7 through which the hot gases in the chamber 2 may discharge as will be described later.

Running through the chamber 2 and into and through the tank 1 is a flue 8 which terminates at 8a within the chamber 2. At one end of the flue 8 and discharging thereinto, I provide a burner 9 discharging hot gases 10 into the flue. The burner 9 is of the usual kind well known in the art, one embodiment of which is fully described in my co-pending application Serial No. 681,152 filed July 19, 1933. In the wall of the flue 8 and within the chamber 2, are apertures 11 which at all times permit a certain amount of gases to escape into the chamber 2. Positioned across the flue 8 at a point between the apertures 11 and the tank 1, I provide a sliding damper 12 held in position by a casing 13. This damper 12 is so constructed and positioned that in its closed position it will shut off the flue 8 at a point between the chamber 2 and the tank 1, while in its open position as illustrated in Fig. 3, it will permit unobstructed flow of the gases from the burner 9 throughout the total length of the flue 8.

In the normal operation of my apparatus the dampers 6 and 12 are positioned as is illustrated in Figs. 1 and 3 and the hot gases from the burner 9 flow throughout the length of the flue 8 and out through the terminal 8a of the flue 8 and out through the stack 5 past the open damper 6. Some of the hot gases will, of course, flow through the apertures 11 and maintain the temperature of the chamber 2 at a high enough degree to prevent freezing of the material in the distributing mechanism 3. When it is desirable to heat the chamber 2 alone without at the same time heating the tank 1, the damper 6 is closed and the damper 12 is closed as is illustrated in Fig. 2. In this position the hot gases 10 from the burner 9 are prevented from flowing through the portion of the flue 8 which is within the tank 1 and are forced out through the apertures 11 directly into the chamber 2. Due to the damper 6 in the stack 5 being closed, these gases are forced to follow the arrows as indicated in Fig. 2 and exhaust through the apertures 7 at the bottom of the tank.

I do not wish to limit myself to any special form of dampers or tank or chamber construction since numerous forms which will accomplish my novel purpose will be apparent to one skilled in the art and my drawing and description are merely for the purpose of illustration and not limitation.

It is to be understood that different forms may be made without departing from the spirit of my invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In apparatus of the character described, a tank, a heating chamber at one end of said tank, and having fluid distributing means contained therein, a flue running through said tank and said chamber for heating the same, a burner discharging heated gases into said flue at the chamber terminal thereof, said flue being provided with apertures within said chamber and a damper in said flue between said apertures and the point of entrance of the flue into said tank, so that the closing of the damper will increase the flow of heated gases through the apertures into the chamber.

2. In apparatus of the character described, a tank, a heating chamber, fluid distributing means in said chamber, a flue having a portion running through said chamber and another portion through said tank for heating the same, a burner discharging heated gases into said flue portion running through said chamber, said flue being provided with at least one aperture within said chamber, and means associated with said flue for closing the same between said aperture and the point of entry into said tank.

3. In apparatus of the character described, a tank and a heating chamber, fluid distributing means in said heating chamber, a flue running through said chamber and said tank for heating the same, a burner discharging heated gases into said flue at the chamber terminal thereof, the other terminal of said flue discharging into said chamber, said flue being provided with at least one aperture within said chamber, means associated with said flue for closing the same between said aperture and the point of entry into said tank, a stack having a closable damper connected to the top of said chamber, and said chamber being provided with an outlet port in the bottom thereof.

4. In apparatus of the character described, a tank, a heating chamber, fluid distributing means in said chamber, a flue having a portion running through said chamber and another portion through said tank for heating the same, a burner discharging heated gases to said flue portion running through said chamber, said flue terminally discharging into said chamber and being provided with at least one aperture in the portion running through said chamber, means associated with said flue for closing the same between said aperture and the point of entry into said tank, and a stack having a closable damper connected to the top of said chamber.

5. In apparatus of the character described, a tank, a heating chamber, fluid distributing means in said chamber, a flue having a portion running through said chamber and another portion through said tank for heating the same, a burner discharging heated gases to said flue portion running through said chamber, said flue terminally discharging into said chamber and being provided with at least one aperture in the portion running through said chamber and means associated with said flue for closing the same between said aperture and the point of entry into said tank.

6. In apparatus of the character described, a tank, a heating chamber, fluid distributing means in said chamber, a flue having a portion running through said chamber and another portion through said tank for heating the same, a burner discharging heated gases to said flue portion running through said chamber, said flue terminally discharging into said chamber and being provided with at least one aperture in the portion running through said chamber.

HERBERT HAUPT.