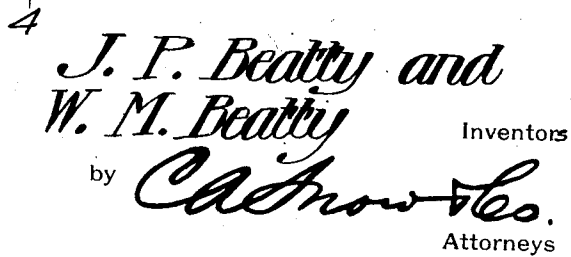


**1,046,946.**

2 SHEETS--SHEET 1.



### Witnesses

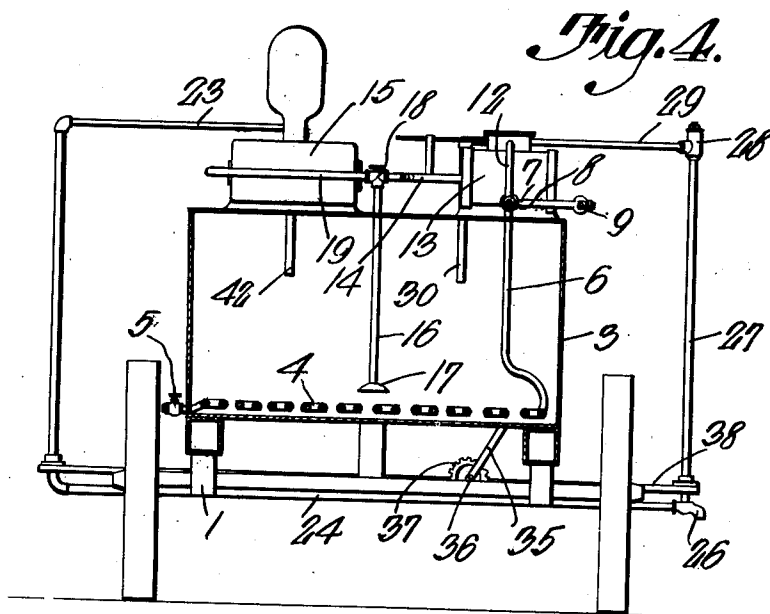
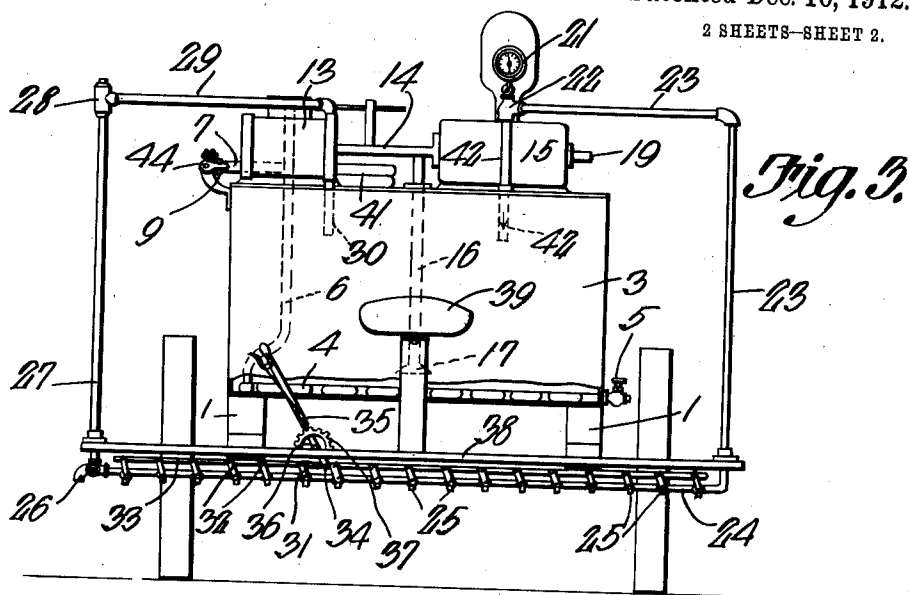
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ROAD OIL HEATER AND DISTRIBUTER.  
APPLICATION FILED MAR. 8, 1912.

1,046,946.

Patented Dec. 10, 1912.

2 SHEETS—SHEET 2.



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Witnesses

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# UNITED STATES PATENT OFFICE.

JOHN P. BEATTY AND WILLIAM M. BEATTY, OF CHARLOTTE, NORTH CAROLINA.

## ROAD-OIL HEATER AND DISTRIBUTER.

1,046,946.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed March 8, 1912. Serial No. 682,482.

*To all whom it may concern:*

Be it known that we, JOHN P. BEATTY and WILLIAM M. BEATTY, citizens of the United States, residing at Charlotte, in the county of Mecklenburg, State of North Carolina, have invented a new and useful Road-Oil Heater and Distributer, of which the following is a specification.

The present invention relates to improvements in road oil heaters and distributors, the primary object of the invention being the provision of an apparatus adapted to be drawn by a traction or road machine, the exhaust steam from the traction engine or road machine being utilized in the present apparatus for heating the asphaltum or oil used for distribution upon the road and also for operating a steam pump for maintaining the desired pressure to properly spray the liquid asphaltum or road oil transversely of the road as the traction engine or road machine draws or pulls the present apparatus over the road.

A further object of the present invention is the novel form and arrangement of road oil heater and distributor in which the liquid asphaltum or road oil is properly heated so as to be in the best possible fluidity for distribution, a novel arrangement or form of distributing nozzle being operably connected to the force pump, the same being provided with a return conduit which leads the surplus back into the tank of the apparatus, so that there can be no clogging of the asphaltum or oil within the distributing nozzle during the operation of the apparatus, this construction providing a complete circulation of the heated asphaltum or road oil to prevent the coagulation thereof within the nozzle and distributing pipes.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings—Figure 1 is a top plan view of the complete road oil heater and distributor. Fig. 2 is a side elevation thereof. Fig. 3 is a rear elevation thereof. Fig. 4 is

a section taken on the line 4—4 of Fig. 2 looking in the direction of the arrows.

Referring to the drawings, the numeral 1 designates a wheeled truck which is provided with the coupler or draw bar connection 2, whereby the apparatus may be properly connected to a road or traction engine to be drawn thereafter.

Mounted upon the truck 1 is a reservoir or tank 3 which has mounted within the same and close to the bottom thereof the heating coil 4, provided with the valved blow off 5. The upright pipe 6 is the inlet pipe to the coil 4 and has its upper end connected through the valve 8 to the short pipe 7, which itself leads through the throttle valve 9 to the conduit 10, the flexible connection or conduit 11 being connected to the forward end of the conduit 10 to receive the steam from the traction or road engine, such conduit 11 being connected either directly with the boiler or with the exhaust from the engine thereof. By this means it will be seen that the temperature within the reservoir or tank 3 may be regulated by the admission of the steam to the coils 4 and that the liquid asphaltum or oil within the tank may be properly heated to the desired fluidity for distribution.

Leading from the short pipe 7 is a pipe 12 which leads to the steam cylinder of the engine 13, which is provided with a connecting rod 14 to operate the pump 15, the engine and pump being of the ordinary construction, whereby a pump and engine is combined in the most compact form.

The pipe 16 which leads from near the bottom of the tank and is provided with the suction head 17 is in communication with the three-way valve casing 18, from which leads the conduit or pipe 19 to the pump 15. By this means the liquid asphaltum or oil is drawn from the bottom of the reservoir or tank 3 adjacent to the coil 4 and is thereby drawn into the pump 15 to be distributed or circulated through the pipe 20 and three-way valve 22 through the directing or conveying conduit 23. This conduit 23 extends downwardly and has leading therefrom below the platform 38 carried by the truck 1, a conduit 24 which has disposed in spaced relation throughout the length thereof, the distributing nozzles or faucets 25, while at the extreme end of the conduit 24 from the conduit 23, is the drain cock 26. Leading

upwardly from the drain cock 26 and in communication with the conduit 24 is the circulating pipe or conduit 27, in whose upper end is disposed the relief valve casing 28, which has leading therefrom the conduit or pipe 29 whose terminal 30 is disposed to project through the top into the tank 3, thus providing a means whereby the liquid asphaltum or road oil is permitted a complete circulation from the pump 15 back to the tank. By reason of the relief valve 28, a maximum discharge pressure at the nozzle 25 is determined.

The nozzles or faucets 25 are respectively provided with individual valve actuating levers 31, whose extreme ends 32 are pivotally connected to the oscillatory rod 33, which is disposed transversely below the platform 38 and has operably connected thereto the lower end 34 of the manually controlled lever 35. The lever 35 is mounted at 36 upon the platform 38 and is provided with a pawl and segment 37, whereby the same may be locked at any position to regulate the flow of the liquid asphaltum or oil through the respective nozzles or faucets 25. This lever 35 is disposed in ready access to the operator who is seated upon the seat 39 when operating to distribute the liquid asphaltum or oil through the nozzles 25 upon the road.

In order to utilize the pump 15 and also the engine 13 to fill the tank 3 from any form of reservoir or barrel, the hose 41 is provided and is connected to the coupling 42' of the three-way valve casing 18, the said valve being so arranged when the tank is being filled, that the same closes the conduit 16 but permits the flow of the oil through the conduit or pipe 19 to the pump 15, thence through the conduit 20 and as the valve in the casing 22 is closed to prevent the oil from passing into the conduit 23, the oil will flow downwardly through the conduit 42 into the tank or reservoir 3. By this means the same power that is utilized to distribute oil through the nozzles 25, is utilized to fill the tank or reservoir 3.

By use of the valve 8, the flow of steam to the coils 4 is regulated, while by use of the throttle valve 9 controlled by the short lever 43 and actuating rod 44, the speed of the engine 13 is regulated as desired.

From the foregoing description taken in connection with the drawings, it is evident that when the tank 3 is properly filled with the liquid asphaltum or road oil, the steam from the traction or road engine is permitted to enter the coils 4 and thereby heat the same to produce the proper fluidity of the oil or liquid asphaltum, and after the same has been heated to the desired temperature, the steam is admitted to the engine 13, which operates the pump 15, the valve 18 being operated to close the coupling 42' and open the suction pipe 16, while the valve

22 is operated to close the conduit 42 and open the upper end of the conduit 23, a complete circulation of the liquid asphaltum or road oil through the conduit 23, nozzle conduit 24 and return conduits 27 and 29 being provided. Thus a continuous circulation of the liquid asphaltum or oil is provided and the proper distribution thereof from the nozzles 25 is readily accomplished.

By means of the drain cock or faucet 26, the pipes 23, 24 and 27 may be properly drained when the apparatus is out of operation or when it is desired to patch certain portions of the road, the liquid asphaltum or oil may be drained from the cock 26 into buckets or other receptacles.

By the arrangement of the valve controlled nozzles 25, the single lever 35 being disposed in operable relation to the party sitting in the seat 39, the desired amount of liquid asphaltum or road oil may be sprayed upon the road and regulated to an exactness according to the nature of the soil desired to be impregnated.

By the arrangement of the engine and pump utilizing the steam from the road or traction engine, the tank 3 may be filled when desired with the liquid asphaltum or road oil, and the contents of the tank may be heated to the desired fluidity, while the circulation of the asphaltum or road oil may be properly directed to the nozzles 25, and returned, the surplus being returned to the tank 3, preventing any undue coagulation of the same within the pipe 24 and nozzles 25.

What is claimed is:

1. In a machine of the character described, a truck, a tank mounted thereon, a steam pump, a pipe connecting the interior of said tank with the inlet of the pump, a pipe leading from the pump exteriorly and laterally of the tank and extending downwardly, transversely and upwardly and entering the tank at the top at the opposite side thereof, the lower intermediate portion of said pipe being provided with a plurality of distributing outlets, a three-way valve disposed in said pipe in advance of said intermediate portion, an auxiliary conduit leading from said three-way valve into the tank, a plurality of valve controlled nozzles one to each of said distributing outlets, a relief valve mounted in the conduit for determining the maximum discharge pressure of the nozzles, and manually controlled means for actuating the valves of the nozzles.

2. In a machine of the character described, a truck, a tank mounted thereon, a steam pump, a main pipe connecting the interior of said tank with the inlet of said pump, a pipe leading from the pump exteriorly and laterally of the tank and extending downwardly, transversely and upwardly, and entering the tank at the top at the opposite

side thereof, the lower intermediate portion of said pipe being provided with a plurality of distributing outlets, an auxiliary pipe leading into the tank from said main pipe at a point in advance of said intermediate portion, a plurality of valve controlled nozzles one to each of said distributing outlets, a relief valve mounted in the main pipe for determining the maximum discharge pressure of the nozzles, and manually controlled

means for actuating the valves of the nozzles.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

JOHN P. BEATTY.

WILLIAM M. BEATTY.

Witnesses:

W. M. MOORE,

J. B. POWELL.