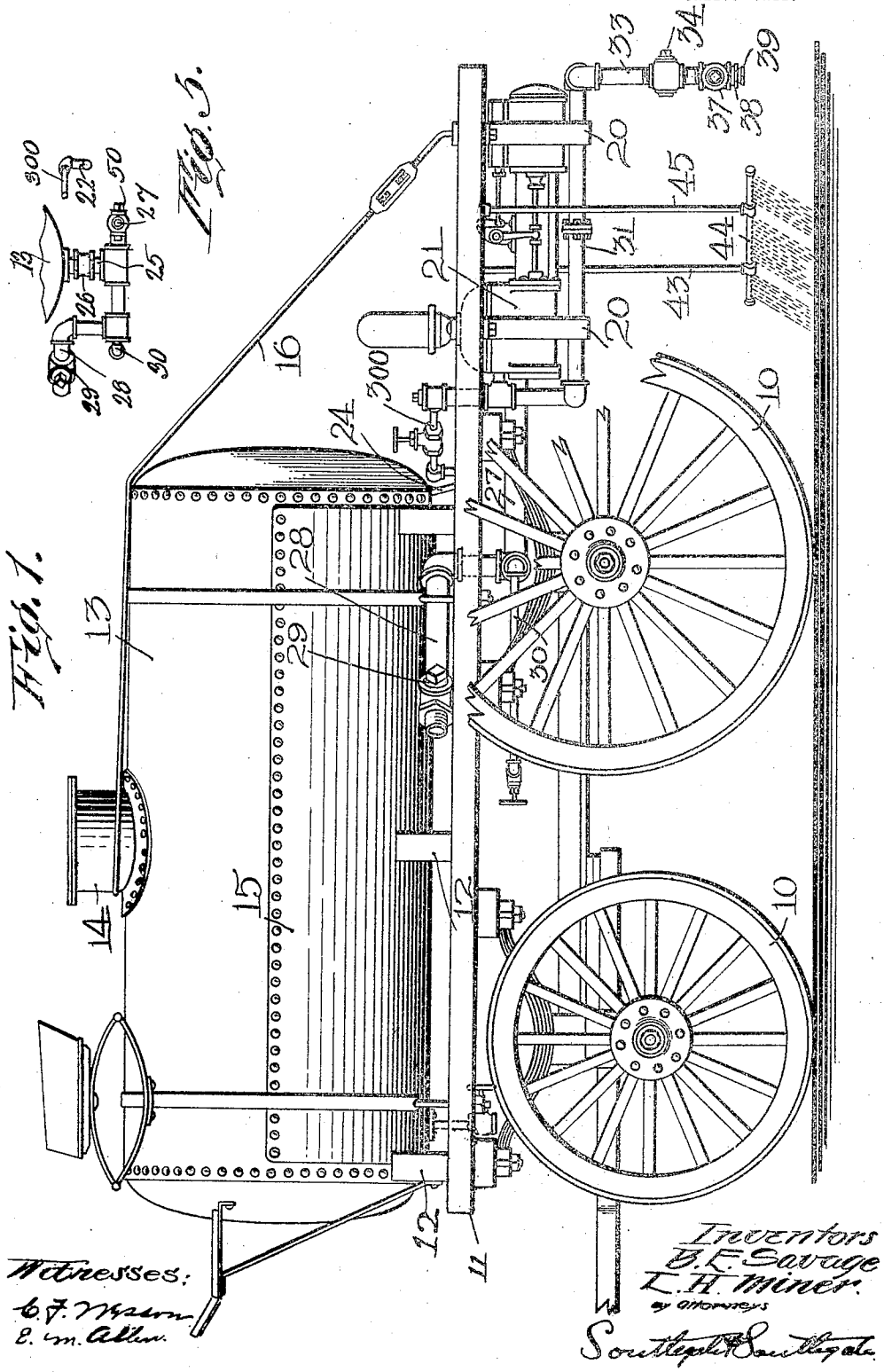
B. E. SAVAGE AND L. H. MINER.

APPARATUS FOR TREATING SURFACES OF ROADS.

APPLICATION FILED DEC. 29, 1910. RENEWED JAN. 21, 1916.

1,320,029. Patented Oct. 28, 1919.

2 SHEETS—SHEET 1.



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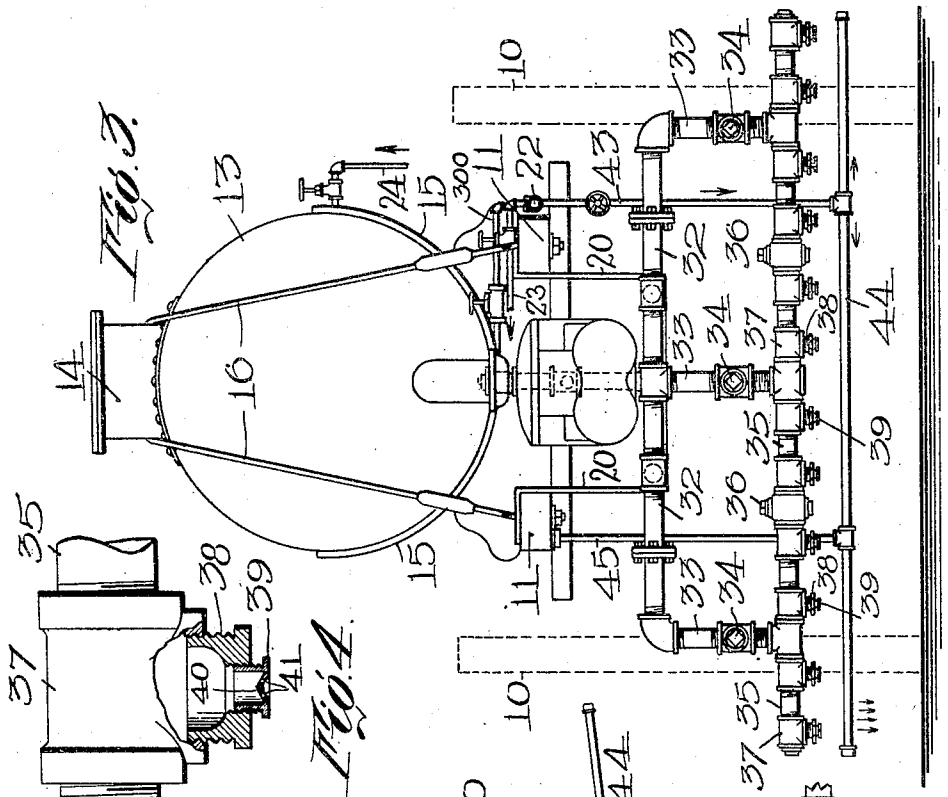


Fig. 3.

Fig. 4.

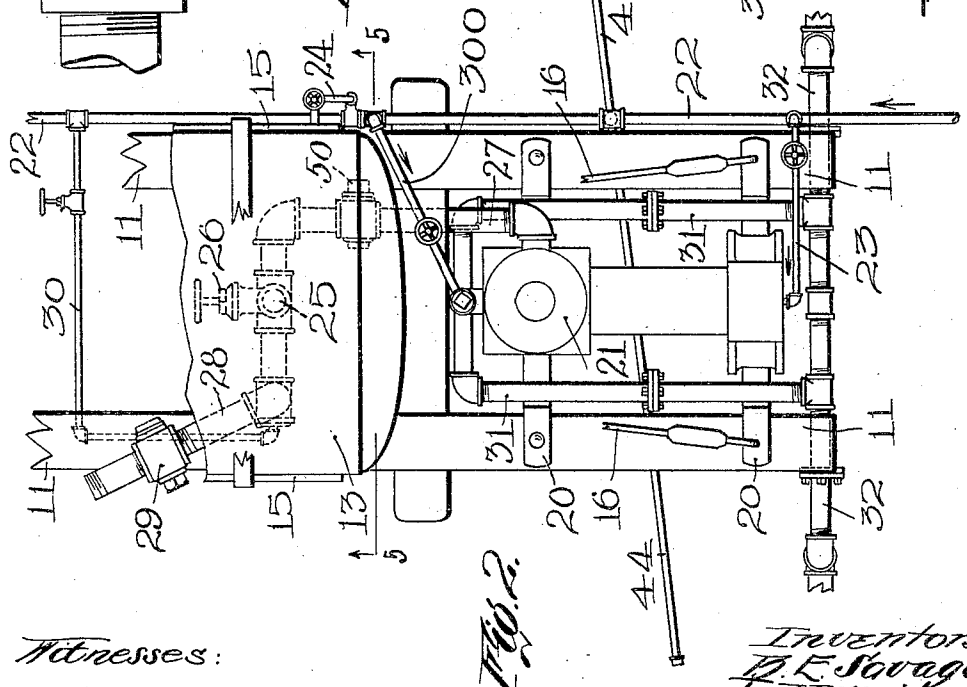


Fig. 2.

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BERTRAM E. SAVAGE, OF WORCESTER, AND LOUIS H. MINER, OF HAVERHILL, MASSACHUSETTS.

APPARATUS FOR TREATING SURFACES OF ROADS.

1,320,029. Specification of Letters Patent. Patented Oct. 28, 1919.

Application filed December 29, 1910, Serial No. 599,968. Renewed January 21, 1916. Serial No. 73,501.

To all whom it may concern:

Be it known that we, BERTRAM E. SAVAGE and LOUIS H. MINER, citizens of the United States, residing at Worcester and Haverhill, in the counties of Worcester and Essex, respectively, both in the State of Massachusetts, have invented a new and useful Apparatus for Treating Surfaces of Roads, of which the following is a specification.

This invention relates to a machine or device for distributing asphaltum oil or other oils or the like of a suitable character on the surface of streets and roads.

The principal objects of the invention are to provide a construction in which the distributing pipes for depositing the oil on the street are connected with the oil tank through a pump which is located between the tank and pipe and which is carried along with them so that the piping between these parts can be permanent and of comparatively small length and inexpensive in construction and maintenance, and to provide convenient means whereby the same source of steam will operate the pump and heat the tank; and also dampen and heat the road surface in advance of the distribution of oil thereon. Further objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings,

Figure 1 is a side view of a machine constructed in accordance with this invention.

Fig. 2 is a plan of a portion of the same;

Fig. 3 is a rear end elevation thereof;

Fig. 4 is an enlarged detail view of one of the distributing nozzles partly in section, and

Fig. 5 is a sectional view on the line 5—5 of Fig. 2 showing the rear of the tank and its connections.

The invention is shown as applied to a truck body having wheels 10 for supporting the same and adapted to be drawn by horses, or by a steam roller or the like. Mounted above the wheels are a pair of longitudinal beams 11 constituting a support and having metallic supporting pieces 12 extending upwardly therefrom, on which is carried the oil tank 13. This tank is as usual provided with a manhole 14 at the top. It is also provided with a semi-circular steam jacket 15 covering the bottom thereof. By the use of such a steam jacket the oil within the tank is thoroughly heated without going to the expense of placing steam pipes longitudinally through the tank, and at the same time the difficulty experienced by the hardening of the oil about the nozzle pipes is entirely avoided. The tank is shown as anchored to the rear of the supports 11 by tie-rods 16 extending up around the man hole projection 14.

Mounted on the support 11 immediately behind the tank and at a level below the support are brackets 20 which carry a pump 21. This is a steam pump and is supplied with steam from a steam pipe 22 carried by the supports and connected with any suitable source of supply which moves along with the device. This supply pipe is connected with the steam pump through pipe 23 and is also connected with the jacket 15 by a pipe 24. The tank is provided with an outlet and inlet pipe 25 near the rear and bottom thereof having a valve 26 for controlling the same. This is connected by an outlet pipe 27 with the pump, the said pipe 27 constituting the inlet of the pump. Extending from the pipe 25 on the opposite side from the pipe 27 is a pipe 28 having a valve 29 and adapted to be connected with an oil tank or the like so that oil can be introduced into the pump or into the tank from an outside source whenever desired. The main steam pipe 22 is provided with a by-pass 30 which extends into the pipe 28 for the purpose of providing for forcing steam into the tank, and for cleaning out the pipe and for forcing a supply of steam through the pump to force oil out of the pump and to clean out the interior thereof. The pump delivers the oil through a pair of pipes 31 to a transverse pipe 32 which in the present instance is provided with three vertical connections 33, each having a valve 34 therein. At the bottom these are connected with the several sections 35 of a distributing pipe. Valves 36 are located between each two sections of this pipe. On account of these connections and valves any one or more sections of the distributing pipe can be cut off at any time without interfering with the others. A by-pass 300 is provided for cleaning out the pipes 31 and 32. The distributing pipe is provided with a plurality of fittings 37 each having a plug 38 therein supplied with a nozzle 39. This nozzle preferably is provided with a conical

inwardly extending end 40 having perforations 41 in the inclined surface so that the streams of oil will be caused to converge toward each other and interfere with each other in such a way as to cause the streams to be converted into a spray.

It is to be observed that with this construction the steam pump is located between the supply tank and the distributing pipe, so that the amount of piping is reduced to a minimum, and it is permanently located in position when once set up. This is a material improvement over those forms of road machines in which the oil is distributed from a tank by means of a pump carried along on a separate vehicle. At the same time the advantages of the other system, whereby great flexibility in operation is secured are retained by this system, because of the pipe 28 which can be connected with a traveling supply if desired.

We have discovered also that while the dampening, usually effected before the oil is distributed, is a desirable feature, it is carried out in a very clumsy and inefficient way in ordinary usage. This is due to the fact that the road surface is sprinkled independently of the distribution of the oil, and sometimes it partially dries before the oil is applied, and at other times too great quantities are used. Moreover, the application of the water cools the road surface in some cases, whereas the road surface should be heated in order that the oil may not chill immediately, and may have time to flow into the crevices and depressions in the road before it hardens.

In order to obviate these difficulties, and at the same time to provide for cleaning the dust away from the surface of the road before the oil is applied, the following system is employed: Connected with the steam supply pipe 22 is a branch 43 which is connected with a horizontal pipe 44 supported on the other side by a rod 45. It preferably extends across the road surface under the vehicle at a slight angle, to the distributing pipe, as indicated in Fig. 2. It is located in front of the oil distributing pipe, and is provided with perforations on its forward side so as to direct a series of jets of steam on the road surface in advance of the distribution of oil thereon. This steam is projected on the road with some force, so that it serves to dislodge the loose dust and blow it away from the surface being treated and to one side, it also dampens the surface and the extent of dampening can be regulated with any degree of nicety by adjusting the valves of the steam system. Another great advantage of this arrangement is that the road surface is heated by the steam instead of being cooled, and thus provides for the improved results hereinbefore mentioned.

While we have illustrated and described a preferred embodiment of the invention, we are aware that many modifications can be made herein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore we do not wish to be limited to all the details of construction herein shown and described, but what we do claim is:—

1. In a device for applying oils and the like to streets, the combination with a truck body, of a tank for containing the oil mounted on said truck body and located over it, a pump carried under the rear of said truck body behind the tank and communicating therewith, a steam supply pipe carried by said truck body and connected directly with said pump for operating the same, a distributing pipe for the oil communicating directly with the discharge from the pump and located at the rear of the pump under it and extending transversely of the truck, a pipe located in front of said distributing pipe and having perforations in the front thereof, and connections to the latter named pipe from said steam supply.

2. In a device for applying oils and the like to streets, the combination with a support having wheels on which it is carried, of a tank for containing the oil mounted on said support, a distributing pipe, connections carried by said support between the tank and the distributing pipe for conducting the oil from the tank to said distributing pipe, two valves for controlling the flow of oil through said connections, two steam pipes supported by said support, one entering said connections between the valves and the other entering them between both valves and the distributing pipe, and a pump comprised in said connections and disposed at a point between those points at which the two steam pipes enter the connections.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

BERTRAM E. SAVAGE.
LOUIS H. MINER.

Witnesses to the signature of B. E. Savage:

T. ROBT. FOX,
C. A. GRIER.

Witnesses to the signature of L. H. Miner:

ESSEX S. ABBOTT,
RALPH W. HOOD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."