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ROAD OIL SPRAYING NOZZLE

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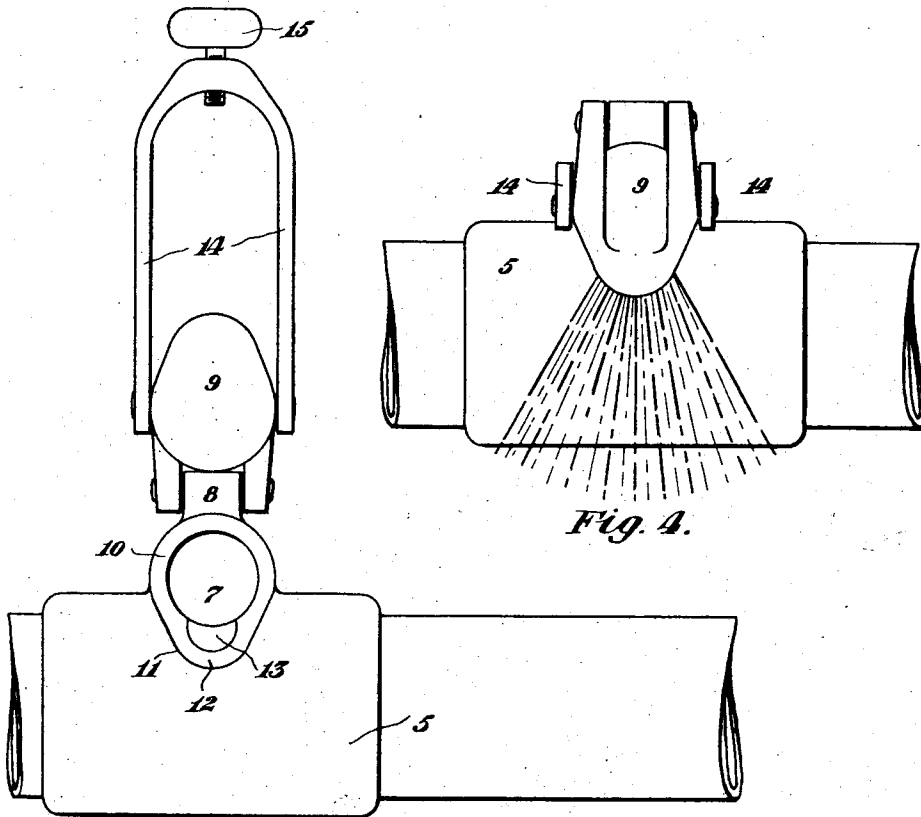


Fig. 4.

Fig. 2.

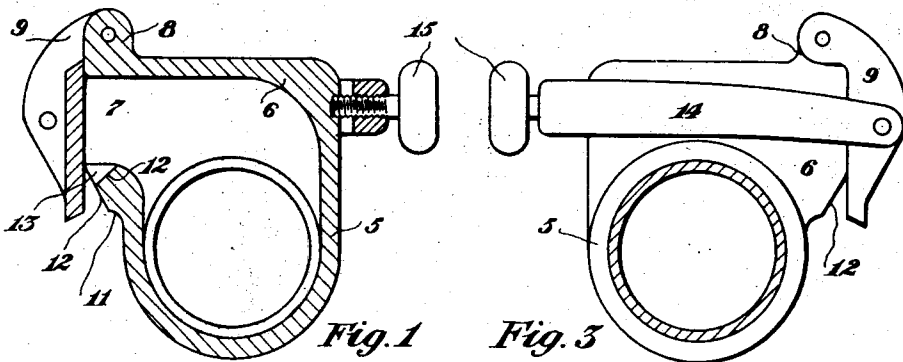


Fig. 1

Fig. 3

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ROAD-OIL-SPRAYING NOZZLE.

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This invention relates to road oil spraying nozzles such as are used in connection with road spraying machines using hot asphalt or the like. In all such machines using in a hot and fluid condition those heavier grades of asphalt or coal tar that are semi-solid or solid when cold, the design of the nozzles that project the liquid on to the road surface, is one of the important factors that determine whether the machine is commercially efficient or not.

The objects of the invention may be stated as follows: the nozzles must deliver transverse to the road a sheet of spray which, at the line where it strikes the road surface, is quite uniform in quantity throughout the whole length of that line, so that in travelling they leave no heavy streaks lengthwise of the road. This equality must persist throughout the variation in height caused by the unloading of the vehicle.

They must have a large aperture to decrease the risk of its blocking, to meet this condition the number of nozzles necessary must be a minimum and the performance of each must meet this condition.

In the event of a foreign body lodging in the aperture there must be means provided to remove it.

The aperture must be so placed that the drainage subsequent to spraying will not accumulate and solidify in the aperture.

Since a slight variation in the form of the aperture will affect the distribution of the liquid, the design must admit of accurate machining operations which will produce uniform results in a number of nozzles.

Each of these objects is attained by my invention which is fully described in the specification following, reference being made to the drawings herewith which form part of this application, and in which Fig. 1 is a transverse section through the centre of the nozzle, Fig. 2 is a front elevation showing the cover pulled wide open, Fig. 3 is a side elevation, and Fig. 4 a plan view.

Taking the drawings in detail and noting that similar numerals in the different views indicate identical parts, 5 indicates the body of the device which is naturally formed upon a socket coupling and thus can be used in a system of pipe work, an enlargement of the body at 6 provides a conduit for the hot liquid to pass to the nozzle aperture 7. It may be noted that the aperture and the conduit are placed above the line of the pipes

conveying the hot asphalt. This is important because then any accumulation of asphalt remaining after the usual blowing out will lie along the lower part of the pipes, leaving the upper part and the nozzles clear.

A hinge projection on the top of the conduit 6 is shown at 8 for carrying the nozzle cover 9, the latter is flat on its inner side and may be closed tightly against the corresponding flat portion of the annular seat 10 around the aperture 7. The rim of the aperture is elongated to an approximately egg-shaped outline at its lower side to form the nozzle orifice as at 11, this elongation having an angular face 12, the latter being channelled at 13 angularly to its angular face 12.

The method I adopt for forming the nozzle orifice is highly important because the design lends itself to accurate milling and gauging operations, and is of such a form that by altering the angle of the face 12 or the form of that part of the nozzle face which is cut away to leave the spray aperture 13, the distribution of the liquid in the spray from any one nozzle can be fully controlled. This control is effected by throwing the liquid more or less to the centre or outer edges of that spray as may be required to cause the sum of the nozzles on the machine to cast a uniform coat on the road. Also the width of the individual spray at the line where it strikes the road surface, may be increased or diminished by the same means. The correct form of this face is arrived at by experiment and once found is easily reproduced in all subsequent nozzles.

This accurate control of distribution makes it possible to increase the height of the nozzles from the road, thereby covering a wider stretch of road surface per nozzle and so reducing the number of them.

In machines where this ready means of modification does not exist it is usual to decrease the spread of spray and the height from the road and to increase the number of nozzles to offset the effect of poor individual distribution.

It may be further noted that the increased height of the nozzles from the ground made possible by my invention also reduces the change in distribution due to the raising of the chassis when unloading; the change in height being a smaller percentage of the total height.

The cover plate 9 is secured against its seat by the U-shaped link 14 which engages

the rear of the conduit 6 by the set screw 15, this cover is quickly released and turned out of the way leaving the nozzle aperture and all adjacent parts fully exposed, so that any obstructions may be immediately removed or if stuck in the nozzle itself allowed to fall out. The spray produced by my nozzle is sector shaped in outline as indicated by the dot and dash lines at 16 in Fig. 4.

Having now fully described the nature of this my said invention and the manner of performing the same, I declare that what I claim as mine and desire to secure by Letters Patent, is:

1. A nozzle for a road oil spraying machine comprising, a body member of the nature of a pipe coupling, the body of the said member being extended on one side to form a projection in the nature of an offset elbow the axis of which is right angular to the axis of the said pipe coupling, the external orifice of the said elbow-like projection being partially closable by a flat faced cover, a cover adapted to the said orifice and means for clamping it to the said projection, the rim of the said orifice being elongated to an approximately egg-shaped form, the said elongation being cut away to form a facet which is angular to the face of the said rim, a

curved channel in said facet communicating with said orifice.

2. A nozzle for a road spraying machine comprising, a body member of the nature of a pipe coupling, the body of the said member being extended on one side and intermediately of the ends to form a projection of the nature of an offset elbow the axis of the orifice and body of which is right angular to the axis of the said coupling-like member, a relatively large orifice in the end of the said projection, the said offset being such that the inner edge of the said orifice is approximately co-incident with the peripheral line of the pipe used in connection with the said coupling-like member, a cover hingeable on the said projection and adapted to partially close the said orifice, means for clamping the said cover to the said member, the rim of the said orifice being elongated to an approximately egg-shaped form, the smaller part of the said elongation being cut away to form a facet which is angular to the face of the said rim and to the inner face of the said cover when closed, a curved channel in said angular facet communicating with said orifice.

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