J. M. RIDDLE.

RAIL LUBRICATOR NOZZLE.

APPLICATION FILED OCT. 26, 1920.

1,386,426.

Patented Aug. 2, 1921.

Fig. 1.

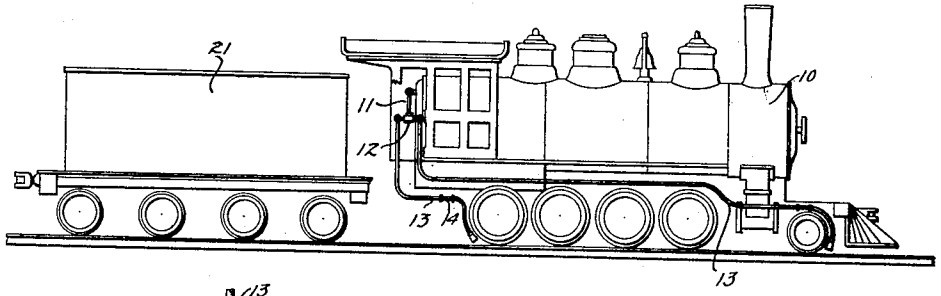


Fig. 2.

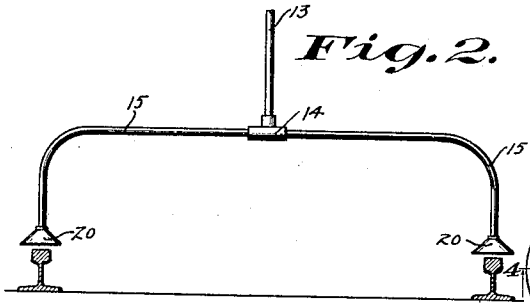


Fig. 3.

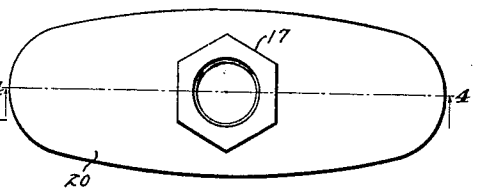


Fig. 6.

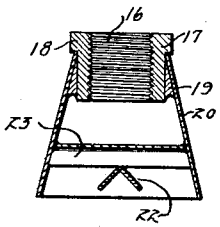


Fig. 4.

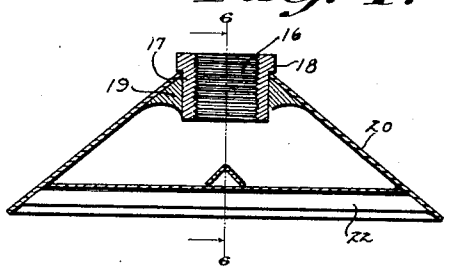
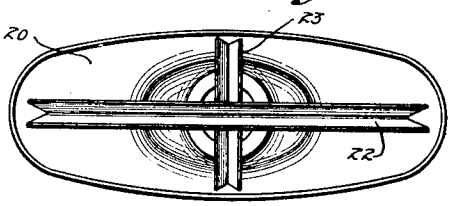


Fig. 5



WITNESSES

E. A. Wilson

R. L. Bedell

INVENTOR

James M. Riddle.

BY Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

JAMES M. RIDDLE, OF ALAMOGORDO, NEW MEXICO.

RAIL-LUBRICATOR NOZZLE.

1,386,426. Specification of Letters Patent. Patented Aug. 2, 1921.

Application filed October 26, 1920. Serial No. 419,761.

To all whom it may concern:

Be it known that I, JAMES M. RIDDLE, a citizen of the United States, and a resident of Alamogordo, in the county of Otero and State of New Mexico, have invented a new and Improved Rail-Lubricator Nozzle, of which the following is a full, clear, and exact description.

This invention relates to railway track lubricators and has reference more particularly to a rail lubricator nozzle of elliptical shape provided with spreaders so arranged as to insure the proper spraying of the rail with water when the railway car is rounding a sharp curve.

Rail lubricators are in use which consist of pipes leading from the locomotive boiler or tender to a point just above the rail and in front of the wheels of the first of the cars which the locomotive pulls. Water is forced through the pipes onto the rail in the form of a fine spray by means of steam from the boiler acting on the principle of an injector and sucking water from the receiver into the lubricator pipe. It has been found that by wetting the rails the friction between the wheels and the rails is reduced with the result that the locomotive pulls the cars with less effort thereby reducing the cost of fuel, increasing the speed, and making it possible for a locomotive to haul a greater number of cars up a grade. The lubricator also washes off the sand which is used under the driving wheels of the locomotive thus presenting a clean track for the cars which follow the locomotive.

The lubricators in use however have not been successful in efficiently wetting the track when the car rounds a sharp curve as the water is sprayed to one side without wetting the rail.

The object of this invention therefore is to obviate this disadvantage by providing a nozzle with spreaders and so shaped that the rail is efficiently sprayed with water even when the car rounds a sharp curve.

Reference is to be had to the accompanying drawing forming a part of this specification in which it is understood that the drawing is merely illustrative of one example of the invention and in which—

Figure 1 is a side view of a locomotive with a portion of the cab broken away to show the method of connecting the lubricator pipes to the boiler.

Fig. 2 is an enlarged view showing the lubricator nozzles in position above the rails.

Fig. 3 is a top view of a lubricator nozzle on a larger scale.

Fig. 4 is a section through Fig. 3 on the line 4—4.

Fig. 5 is a bottom view of the nozzle.

Fig. 6 is a section through Fig. 4 on the line 6—6.

Referring to the accompanying drawing by numerals, 10 indicates a railroad locomotive which has fitted to it, preferably in the rear of the boiler in the cab adjacent the engineer's seat, an L-shaped pipe 11, which is provided at one end with a T 12. A pair of pipes 13 lead from this T, each of them terminating in a T 14. A pair of L-shaped pipes 15 is fitted to the T 14 at one end and at each of the opposite ends by any suitable means, such as screw threads 16, to a nut 17. The nut 17 is cylindrical in shape and has a shoulder 18 formed on one end which is engaged by a brace 19 arranged to be fixed to the nut 17 and to a nozzle 20 by welding, soldering or the like. The shoulder 18 has flats formed on it which accommodate a wrench used in screwing the nut 17 on to the pipe 15. My improved nozzle designated generally by the numeral 20 is preferably so formed as to present an elliptical oblong or like shape at its lower edge, the nozzle flaring downwardly longitudinally and transversely from the nut 17 constituting the inlet.

One of the pipes 13 lead to the front of the locomotive and one to the rear so that one pair of nozzles are positioned behind the rearmost wheels and the other pair in front of the foremost wheels directly above the tracks in each case. Both sides of the locomotive are provided alike with lubricator pipes. Water may be taken from the tender 21 by means of an injector, not shown, operated by steam from the locomotive and be forced through pipes 11 and 13 and nozzles 20 onto the track. A plurality of valves, not shown, may be provided to properly control the operation of the device. It is understood that water may be supplied to the nozzles in any form, from any source associated with the train and connected by any suitable means. When the locomotive is running forward and pulling a train of cars, the rear nozzles may be used to wet the track and thus materially reduce the friction under the wheels of the

cars. If the locomotive is running backward and pulling a train of cars, the front nozzles may be used. Thus any sand which is used under the driving wheels is washed off by water from the nozzles and a clean, wet track is provided for the cars which follow the locomotive so that the wheel friction and the pull on the locomotive is considerably reduced.

In order to make sure that the track is properly sprayed when the car is rounding a sharp curve, the major axes of the nozzle bases are preferably turned at right angles to the track. Fixed to the nozzle base substantially along its major axis is an inverted V-shaped spreader 22 and fixed to the nozzle directly above and at right angles to the spreader 22 is a second inverted V-shaped spreader 23. The water issues from the pipe 15 and the nut 16 in the form of a spray mixed with steam and upon striking the spreaders 22 and 23, the stream is divided into quarters and spread out over the rail and over the region adjacent the rail, so that the rail never escapes a thorough wetting even when the car is rounding a sharp curve. This feature is especially important as the flange friction under the car wheels and the strain on the locomotive is greatest when the train is rounding a curve.

I would state in conclusion that while the illustrated example constitutes a practical embodiment of my invention, I do not limit myself strictly to the mechanical details herein illustrated, since manifestly the same can be considerably varied without departure from the spirit of the invention as defined in the appended claims:

Having thus described my invention, I claim:

1. In a rail lubricating device, a nozzle having an inlet at the top and flaring downwardly from said inlet to present a major and a minor axis, means to secure said nozzle to a supply pipe, an inverted V-shaped spreader in said nozzle substantially along the major axis thereof, and an inverted V-shaped spreader in the nozzle substantially at right angles to the first-mentioned spreader.

2. The combination with a locomotive, of pipes connected with a source of fluid supply on the locomotive and terminating at points to lie adjacent to and above the track rails, nozzles having major and minor axes and spreaders disposed approximately along the respective axes, said nozzles being positioned on said pipes with the major axes of the nozzles disposed transversely of the locomotive.

JAMES MADISON RIDDLE.