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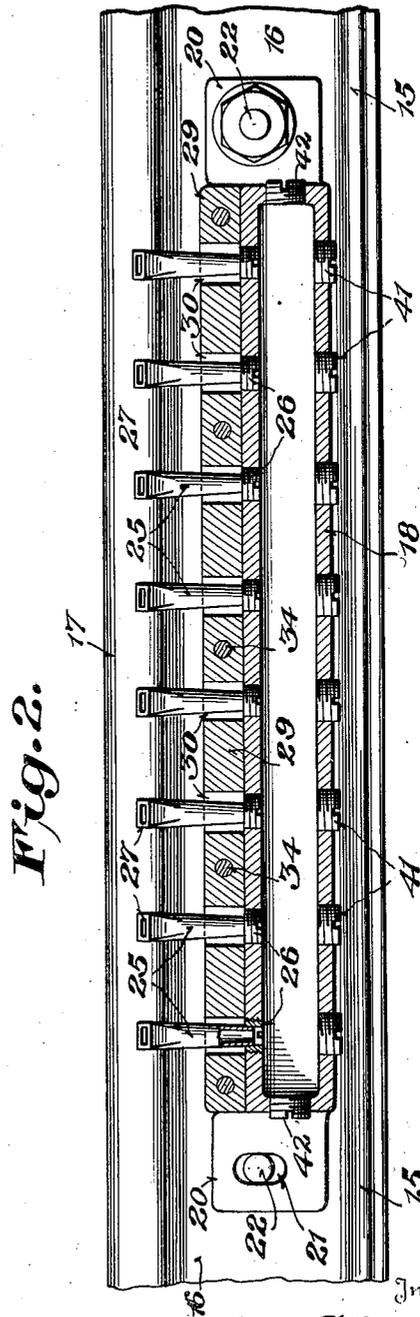
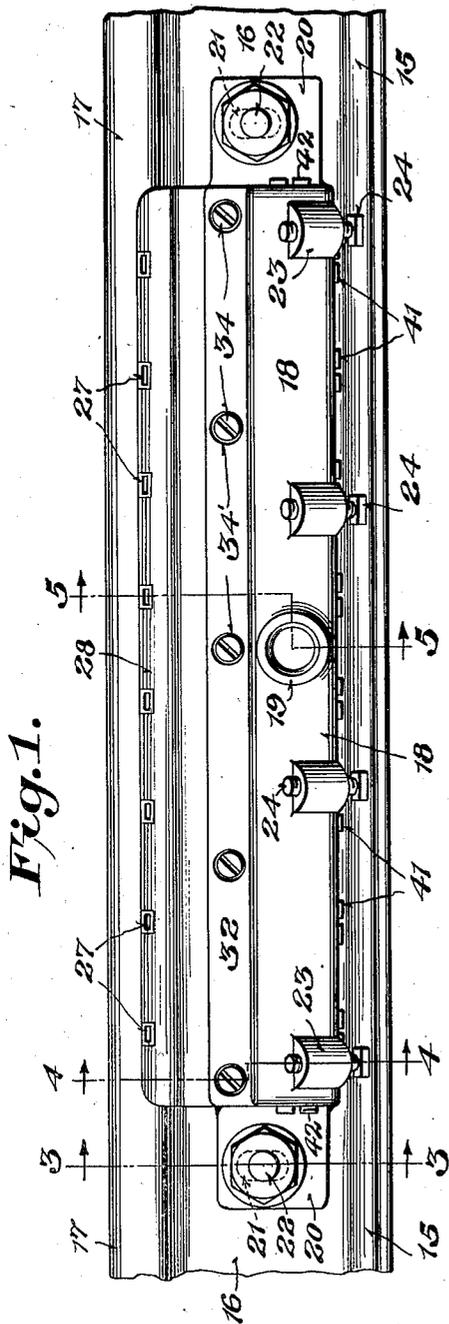
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2,103,701

RAIL HEAD AND WHEEL FLANGE LUBRICATOR

Filed July 10, 1934

2 Sheets-Sheet 1



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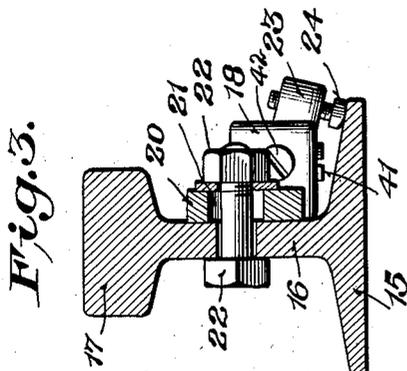
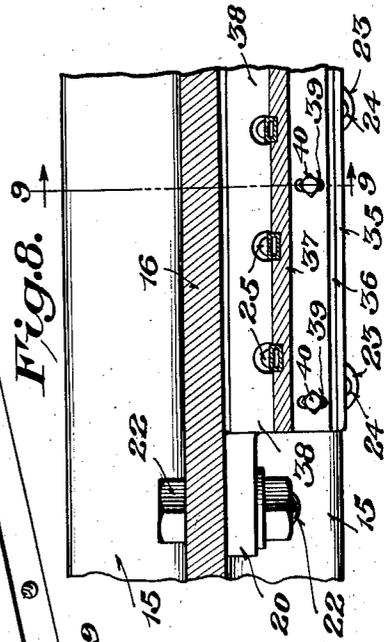
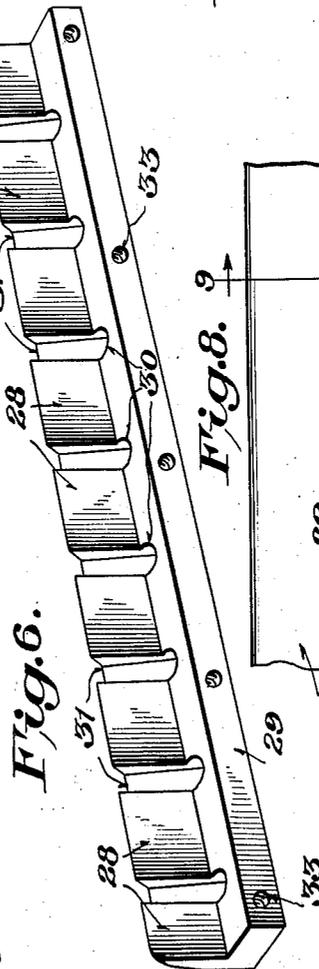
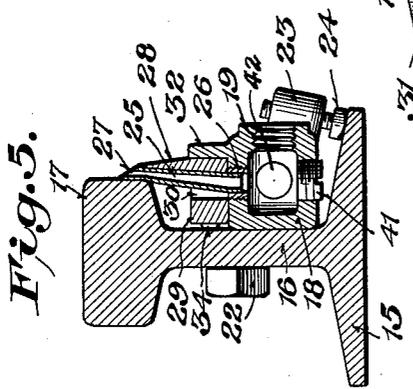
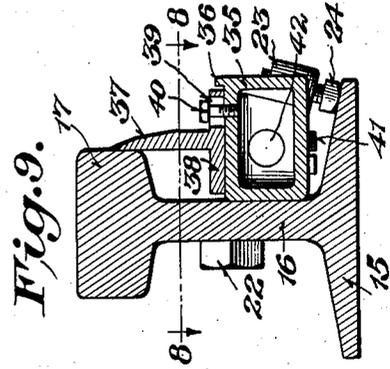
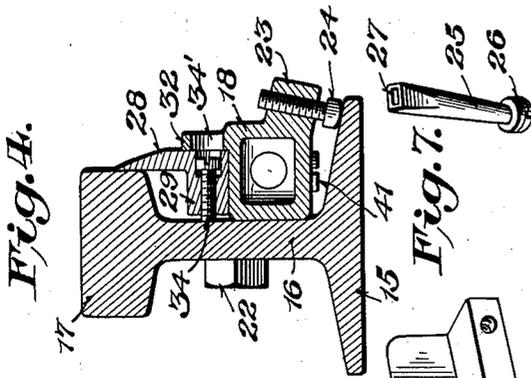
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RAIL HEAD AND WHEEL FLANGE LUBRICATOR

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2 Sheets-Sheet 2



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RAIL HEAD AND WHEEL FLANGE LUBRICATOR

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10 Claims. (Cl. 184—3)

The present invention relates to a lubricating device for the side of a rail head and the flanges of wheels passing over the rail to supply the lubricant at spaced points along the side of the railhead in position to be picked up by the wheel flanges and spread along the rail beyond the lubricator.

An object of the present invention is to provide a lubricator of this type wherein danger of leakage is avoided between clamped together plates and parts which are susceptible of separation or relative movement incident to the weaving of the rail as the wheels pass thereover, and which at the same time deposits the lubricant in desired quantities along the side of the rail head at a height such that the lubricant will be wiped off by and carried upon the flanges of the wheels and subsequently deposited and spread along the side of the rail head as the wheels roll thereover.

Another object of the present invention is to provide a lubricant distributor which may be secured at the desired height and distance from the side of a rail and which has secured directly thereon and carried thereby distributing elements, such as tubes or the like, which extend upwardly and which may be adjusted with the distributor to dispose the outer ends of the elements at the desired height against the side of the rail, the distributor and the distributing elements serving as practically a one-piece structure which eliminates danger of leakage of the lubricant as it passes through the distributor and the elements.

Another object of the invention is to provide the lubricator with a protecting member which is mounted on the distributor and may be adjusted with reference to the rail so as to extend over the distributing members or tubes to protect them from direct contact with the wheel flanges and at the same time which will free the upper open ends of the elements so that the lubricant may be fed upwardly therethrough and against the side of the rail without interruption.

The invention also embodies a novel construction of distributor manifold with distributing tubes thereon and a protecting plate or member which is adjustably mounted on the manifold with reference to the rail head, the two parts being arranged so that the attachment of the manifold to the side of the rail holds the protecting member in place.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claims appended hereto.

In the drawings, wherein like symbols refer to like or corresponding parts throughout the several views,

Figure 1 is a side elevation of a rail head and wheel flange lubricator constructed according to the present invention and as applied to a section of a rail.

Figure 2 is a longitudinal central section taken vertically through the lubricator.

Figure 3 is a transverse section taken through one end of the lubricator on the line 3—3 of Figure 1 and the adjacent portion of the rail, showing the means for clamping the lubricator at different heights against the side of the rail.

Figure 4 is a similar section on the line 4—4 of Figure 1 showing the manifold and the protector member mounted thereon.

Figure 5 is a like view taken on the line 5—5 of Figure 1 showing the distributor elements or tubes which are rigidly mounted on the manifold.

Figure 6 is a detail perspective view looking at the inner side of the protector member.

Figure 7 is a detail perspective view of one of the distributor members or tubes.

Figure 8 is a transverse section taken on the line 8—8 of Figure 9 through the upper portion of the rail and a modified form of the lubricating device applied thereto, and

Figure 9 is a transverse section taken on the line 9—9 through Figure 8 showing the mounting of the protecting member adjustably on the manifold.

Referring now to the drawings, 15 designates the base of a rail of conventional form having the usual web 16 and rail head 17. The lubricator comprises a distributor which is in the form of a manifold 18 which may be rectangular in cross section as shown to provide an upper flat face and to also provide an inner flat face adapted for contact with the web 16 of the rail, shims, washers or other devices being employed where it is desired to space the manifold 18 outwardly from the web. The manifold 18 is provided with a threaded nipple 19 located preferably intermediate the ends of the manifold and by means of which a pipe or other suitable source of lubricant supply under pressure may be connected to the manifold for forcing the lubricant therethrough. The manifold 18 is provided with lugs 20 at opposite ends which, as shown in Figure 2, are provided with vertically elongated slots 21 through which clamping bolts 22 engage, the bolts 22 passing through the web 16 and the slots 21 so that the manifold 18 may be raised and lowered against the side of the web 16 to meet various

conditions found in installation. The bolts 22 are provided with the usual nuts and washers for effecting the desired clamping action. In order to hold the manifold 18 in its vertically adjusted position, the manifold is provided at suitable points in its length with outwardly and downwardly inclined lugs 23 through which set screws 24 are threaded, the set screws extending downwardly from the lugs and adapted to bear against the adjacent side of the rail base 15.

These set screws 24 not only hold the manifold 18 in its raised position, but also brace the manifold 18 against torsional strain which may be imposed thereon incident to the wiping of the wheel flanges over the upper portion of the lubricator.

The manifold 18 extends outwardly from the rail a considerable distance to provide a relatively broad flat upper face and also to provide ample space within the manifold for receiving a desired quantity of lubricant as the manifold 18 is of considerably less height than that of the rail web 16 to accommodate the other features of the lubricator. The manifold 18 carries at its upper side a plurality of upwardly extending spaced apart distributing members or tubes 25 which, as shown in Figure 7, are preferably provided with threaded plugs 26 upon their lower ends and the plugs are detachably threaded in suitably formed openings in the upper wall of the manifold 18, the lubricant passing from the interior of the manifold upwardly through the plugs 26 and tubes 25. The upper ends of the tubes 25 terminate at a suitable height to lie against the adjacent side of the rail head 17 and are preferably beveled at their free open ends as at 27 to deliver the lubricant in gobs at the top of the tube and toward the rail flange so that the latter may pass over the end of the tube without crushing the same and pick up the gob of lubricant to carry the latter forwardly with the wheel flange.

By adjusting the manifold 18 vertically against the side of the rail web 16, the upper open ends 27 of the tubes 25 may be disposed at the desired height along the side of the rail head, and to protect the tubes 25 against crushing or damage by contact with the wheel flanges, a protector 28 is provided which is in the form of an up-standing plate suitably beveled at its upper end to coincide substantially to that of the beveled upper ends 27 of the tubes and which is supported directly upon the upper face of the manifold 18. The lower end of the protector plate 28 has a base flange 29 provided with a flat lower surface adapted to seat on the upper surface of the manifold and to slide thereon within certain limits toward and from the web 16 of the rail to thus accommodate the protector plate 28 to the position of the distributor tubes 28. It is apparent that by relative adjustments between the clamping bolts 22 and the set screws 24 the manifold 18 may be slightly tilted or otherwise adjusted to accommodate the upper ends of the tubes 25 to the inclination of the side of the rail head. The base flange 29 is provided with a plurality of relatively large openings 30 adapted to receive the tubes 25 upwardly therethrough, and the inner side of the protecting plate 28 may have recesses 31 of suitable size to freely receive the upper portions of the tubes 25 therein, the recess 31 terminating at their upper ends in the beveled outer face of the plate 28 so as to lie substantially flush with the upper ends of the tubes 25.

The manifold 18 has along its upper outer edge

a clamping flange or shoulder 32 adapted to bear against the outer side of the plate 28 opposite the base flange 29 so that as the manifold 18 is forced inwardly toward the rail web 16 the base flange 29 will be clamped against the side of the rail to hold the protector plate 28 rigidly in position. To take care of different adjustments of the parts, and insure the binding of the base flange 29 between the web of the rail and the flange 32 of the manifold, the base flange 29 is provided at suitable spaced points with through openings 33 threaded at their inner ends to receive set screws 34 adapted to be turned up against the adjacent side of the web 16 of the rail. The heads of the set screws 34 are disposed in countersinks at the outer ends of the openings 33 and the binding flange 32 is provided with relatively large openings 34 in register with the openings 33 to admit easy access of a screw driver or other suitable tool to the heads of the set screws 32 for adjusting the same. It is apparent that the set screws 34 force the base flange 29 backwardly from the web 16 of the rail and against the stop shoulder or flange 32.

It will be noted that the lubricant which is forced through the manifold 18 passes through the rigidly connected tubes 25 and to the various points of distribution without passing through any points which depend upon the clamping together of plates or the like, or the use of gaskets which readily become loosened and broken incident to the weaving action of the rail.

In the modification shown in Figures 8 and 9, the manifold 35 is substantially of the same construction as shown in the preferred form with the exception that the upper surface of the manifold is relatively brought so as to stand out a considerable distance from the web 16 of the rail and the manifold 35 is provided with a short stop shoulder 36 along the outer edge of the upper surface of the manifold. The protector plate 37 is substantially of the same construction as the plate 28 but the base flange 38 is in the form of a T-head which projects both inwardly and outwardly of the lower portion of the plate 37. This provides a relatively wide support for the plate 37 to hold it from tilting, and the outer portion of the base flange 38 is provided with spaced transverse slots 39 through which engage set screws 40 threaded into the upper wall of the manifold and which bind against the upper surface of the base flange to hold the latter in adjusted position with reference to the rail web 16. Thus, the protector plate 37 may be adjusted toward and from the side of the rail head 17 by loosening the set screws 40 and may be held in adjusted position by tightening the screws after adjustment.

It will be noted particularly from Figure 2 that the plugs 26 of the tubes or nozzles 25 are of sufficient size to be secured downwardly through the upper wall of the manifold so that the tubes themselves may be withdrawn downwardly one at a time through the manifold for replacement and also may be inserted upwardly through the manifold in assembling the nozzles thereon.

To facilitate this relatively large plugs 41 are threaded into the bottom wall of the manifold 18 in line with the plugs 26 so that the tubes 25 may be withdrawn downwardly through the entire manifold and the assembling of the parts may take place by a reverse operation. Plugs 42 are deposited in the opposite ends of the manifold 18 and may be readily removed when it is desired to cleanse the manifold, and also for

the purpose of facilitating manufacture and working on the various parts.

It is obvious that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claims.

10 What is claimed is:—

1. A rail head and wheel flange lubricator, comprising a manifold adapted to receive lubricant under pressure, means for detachably securing the manifold to one side of a rail, a plurality of independent tubes detachably branched from the manifold and having flattened outer ends for positioning against the side of a rail head to project into the bight between the rail head and the flange of a wheel, a removable protecting member, and detachably securing means for securing the protecting member on the manifold over the tubes and having a reduced upper end portion projecting into said bight to protect the free ends of the tubes.

2. A rail head and wheel flange lubricator, comprising a distributor for lubricant, means for detachably securing the distributor against the side of a rail and having a plurality of nozzles extending upwardly for positioning at the side of the rail head to deliver lubricant thereto, and a protector detachably interlocked upon the upper side of the distributor and adapted to be held in place across the nozzles when the distributor is in position to protect the nozzles against crushing by the flanges of wheels passing over the rail.

3. A rail head and wheel flange lubricator, comprising a manifold having a plurality of upwardly extending tubes, means for securing the manifold against the side of a rail with the open ends of the tubes adjacent the side of the head of the rail, and a protector member mounted upon the upper side of the manifold across the outer sides of the tubes and adapted to be held in position by the manifold when in place.

4. A rail head and wheel flange lubricator comprising a distributing manifold having a plurality of delivery nozzles extending upwardly therefrom, means for vertically adjusting the manifold against the side of a rail to position the upper ends of the nozzles against the side of the rail head, clamping means for the manifold to secure the same in position against the side of the rail, and a protector detachably interlocked with the upper portion of the manifold and engaging across the outer sides of the tubes for protecting the same when the manifold is clamped in position.

5. A rail head and wheel flange lubricator, comprising a manifold having a flat upper surface and a flat inner surface, means for adjustably holding the manifold at the desired height against the web of a rail, a plurality of nozzles carried by the manifold and extending upwardly for engagement against the side of a rail head, and a protector member having a base portion adjustably mounted upon the upper flat face of the manifold and having a plate

portion for engagement across the outer sides of the tubes for protecting the same and held in position by said manifold.

6. A rail head and wheel flange lubricator, comprising a manifold having a flat upper surface, means for vertically adjusting the manifold against the side of the web of a rail, means for clamping the manifold to the web when adjusted, a plurality of tubes carried by the manifold and extending upwardly therefrom for engagement against the side of the head of the rail, and a protector mounted upon the upper face of the manifold for clamping engagement between the manifold and the rail web to hold the protecting member across the outer sides of the tubes to prevent crushing thereof by wheel flanges.

7. A rail head and wheel flange lubricator, comprising a manifold having a plurality of upwardly extending nozzles, means for vertically adjusting the manifold against the side of a rail to dispose the open ends of the nozzles at the desired height at the side of a rail head, said manifold having an upper flat face and a binding flange at the outer edge thereof, and a protecting member seated on said flat face of the manifold between said flange and the web of the rail and having a plate portion engaging across the outer sides of the tubes, said protector member adapted to be clamped in position between the web and the said flange when the manifold is clamped to the rail web.

8. A rail head and wheel flange lubricator, comprising a manifold having a flat upper face with a binding flange at the outer edge of said face and provided with a plurality of tubes extending upwardly from said flat face, means for adjustably securing the manifold against the side of a rail web to dispose the open ends of the tubes at the side of the head of the rail, and a protector having a base portion seated on said flat face of the manifold behind said flange and adapted to be found in position upon securing the manifold to the rail web for holding the protecting member across the outer sides of the tubes to protect the same.

9. A rail head and wheel flange lubricator, comprising a manifold having a flat upper face and provided with a plurality of tubes rising from said flat upper face, a removable protecting member mounted on said flat face of the manifold across the outer sides of the tubes for protecting the same, and means for clamping the manifold to the side of a rail web to hold the manifold with its tubes and the protecting member in position.

10. A rail head and wheel flange lubricator comprising a manifold, a plurality of tubes detachably connected to the manifold and extending upwardly therefrom, means for adjustably supporting the manifold at one side of a rail to position the open ends of the tubes at the side of the rail head, and a protecting member interlocked upon the upper side of the manifold about said tubes and extending across the outer sides thereof when the manifold is in position to protect the tubes.

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