Aug. 17, 1954 R. C. FUEHRER 2,686,574

AUTOMATIC OILER FOR CAR JOURNAL BOXES

Filed June 1, 1951 2 Sheets-Sheet 1

FIG. 1.

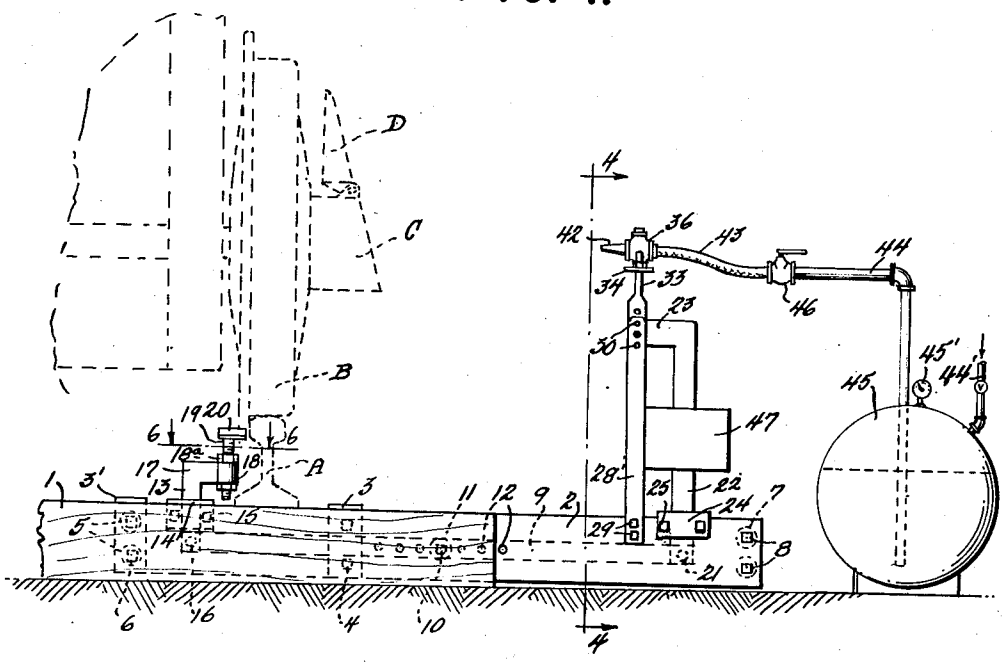
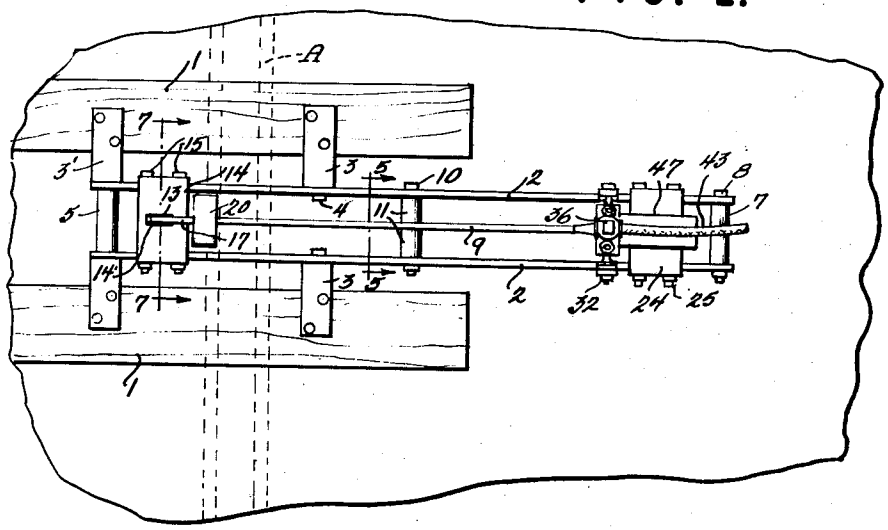


FIG. 2.



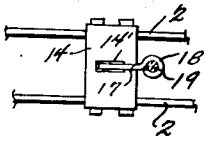


FIG. 6.

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Aug. 17, 1954 R. C. FUEHRER 2,686,574

AUTOMATIC OILER FOR CAR JOURNAL BOXES

Filed June 1, 1951 2 Sheets-Sheet 2

FIG. 8.

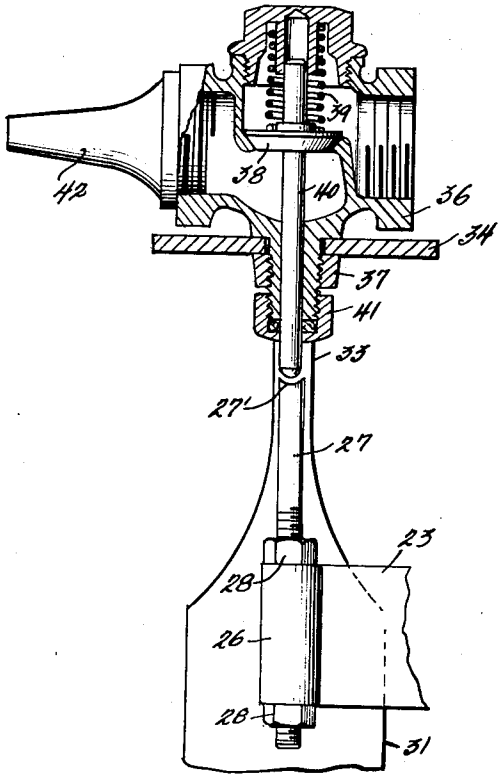


FIG. 4.

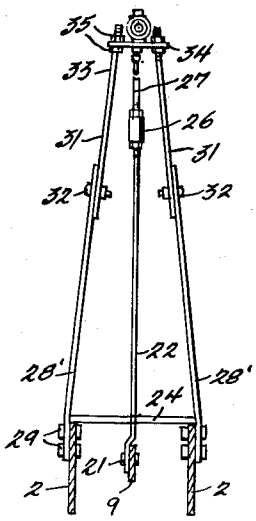


FIG. 5.

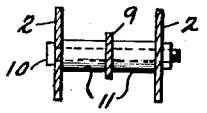
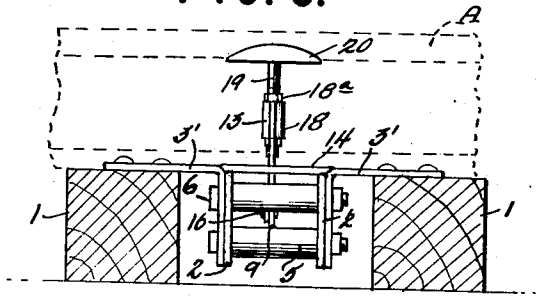


FIG. 3.



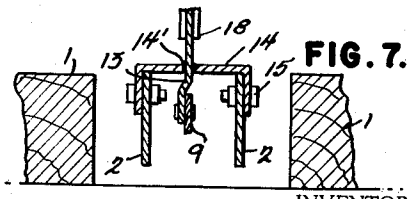


FIG. 7.

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AUTOMATIC OILER FOR CAR JOURNAL BOXES

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4 Claims. (Cl. 184—2)

1

This invention relates to automatic oilers for the journal boxes of railway cars, and more particularly to oilers of the type having means for delivering oil under pressure from a nozzle and injecting it into the car journal box as the car passes.

It has heretofore been proposed to inject oil from a nozzle into a journal box or car wheel bearing by means of a wheel-operated pump, and also to mount the nozzle so as to be engaged and swung laterally by a passing wheel and to thus move therewith. Such arrangements, however, involve mechanical complications, and are costly to construct and maintain. An object of the present invention is to provide a relatively simple arrangement including a source of oil under continuous pressure, a stationary nozzle mounted at a fixed point, and a valve located between the source of oil and said nozzle, and constructed to be momentarily opened by a passing wheel.

Another object of the invention is to devise an improved supporting structure for a device of this character, so constructed that it may be readily installed on the railway cross ties at any desired point, and with a minimum of labor.

Another object is to provide an improved valve and valve operating mechanism which shall be simple in construction, and reliable and positive in operation.

A still further object of the invention is to so design the parts that they are capable of adjustment at many different points, so as to be readily adaptable to any required location, and to the varying operating conditions met with in practice.

With the above and other objects in view, the invention consists in the construction and arrangement of parts hereinafter described and claimed, and illustrated in the accompanying drawings, forming part of this specification, and in which:

Fig. 1 is a side elevation of my improved automatic oiler, parts being broken away, and a portion of a car, including a wheel and journal box being shown in dotted lines.

Fig. 2 is a plan view of part of the apparatus shown in Fig. 1.

Fig. 3 is an end elevation of the apparatus looking from the left of Figs. 1 and 2, the ties being shown in section, and the rail being indicated in dotted lines.

Fig. 4 is a transverse vertical section substantially on the line 4—4 of Fig. 1, looking in the direction of the arrows.

Fig. 5 is a transverse section substantially on

2

the line 5—5 of Fig. 2 looking in the direction of the arrows.

Fig. 6 is a fragmentary horizontal section substantially on the line 6—6 of Fig. 1, looking in the direction of the arrows, the rail and ties being omitted.

Fig. 7 is a transverse section substantially on the line 7—7 of Fig. 2, looking in the direction of the arrows; and

Fig. 8 is an enlarged view partly in elevation and partly in section showing the valve and nozzle, and associated parts.

Referring to the drawings in detail, A designates one of the rails of a railway track, B designates a car wheel supported on such rail, and having an axle mounted in a journal box C having the usual hinged lid or cover D.

The rail is supported on the usual cross ties 1, and my improved apparatus is designed to be secured to these ties.

The apparatus comprises a pair of spaced parallel vertically disposed supporting plates 2, located between a pair of ties, and rigidly secured to such ties by means of a plurality of brackets 3 and 3', as clearly shown in Figs. 2 and 3. The plates 2 are secured to the brackets 3 by means of bolts 4 and to the brackets 3' by means of bolts 6 surrounded by spacing sleeves 5. The plates 2 project a substantial distance beyond the ends of the ties, as shown in Figs. 1 and 2, and are connected at their extreme ends by bolts 8 surrounded by spacing sleeves 7.

An operating lever 9 is disposed between and extends parallel with the supporting plates 2, this lever being pivotally mounted on a bolt 10 extending between the plates and properly centered by spacing sleeves 11, surrounding this bolt and disposed at each side of the lever. The lever is preferably provided with a series of holes 12 any one of which may receive the bolt 10, so that the longitudinal position of the lever may be adjusted as desired.

The lever 9 extends beneath the rail A to a position adjacent the inside thereof, and at this point is pivotally connected by means of a bolt 16 with a bracket 13 which slides freely through an opening 14' in a guide plate 14 supported by and secured to the plates 2 by means of bolts 15. The bracket 13 carries at its upper end a horizontally extending arm 17 having at its end a suitable eye 18 through which extends a threaded rod 19 having nuts 18a thereon. These nuts engage above and below the eye 18, and by adjusting them the height of the rod 19 may be regulated as desired. The rod 19 carries at its upper

end a curved shoe or treadle 20 adapted to be engaged by the flange of the wheel B.

At its opposite end the lever 9 is pivotally connected by a bolt 21 to the lower end of a vertical bar 23 which slides freely through the guide plate 24 supported on the plates 2 and secured thereto by means of bolts 25. The upper portion of the bar 23 extends horizontally as shown in Figs. 1 and 3 and at its extreme end is shaped to form an elongated eye 26. Through this eye passes a threaded rod 27, having nuts 28 thereon adapted to bear against the opposite ends of the eye 26. By adjusting these nuts the height of the rod 27 may be regulated as desired.

Rigidly secured to the supporting plates 2 adjacent to the bar 23, as by bolts 29, is a supporting frame comprising a pair of upstanding bars 28'. These bars are provided at their upper ends with a series of holes 30. Another pair of bars 31 also provided with one or more holes adapted to register with the holes 30 are arranged in overlapping relation with the bars 28', as best shown in Fig. 4, and are secured thereto by means of bolts 32 passing through the above mentioned holes. From the foregoing it will be obvious that the bars 31 may be adjusted up or down by selecting any desired one of the holes 30 to receive the bolts 32.

The upper ends of the bars 31 are narrowed as shown at 33 in Fig. 8, and the extremities are formed into round shanks and threaded. These threaded shanks extend through openings in the plate 34, and nuts 35 working on the threaded shanks engage above and below this plate. By adjusting these nuts the exact height of this plate may be regulated as desired.

Secured to and supported on the plate 34 is a valve 36. This valve is of the type known as a "quick opening" globe valve, or "whistle valve," and is shown as having a threaded nipple extending downwardly through an opening in the plate 34. A nut 37, working on this nipple serves to clamp the valve rigidly in position on the plate 34.

The valve comprises a valve disc 38 secured to a valve stem 40 which extends vertically downward through the threaded nipple above described, and is surrounded at its lower end by a suitable packing gland 41. A helical spring 39 bears upon the valve disc 38 and normally holds it closed. A suitable delivery nozzle 42 is screwed into one end of the body of the valve 36 as shown in Fig. 8.

To the opposite end of the valve body is attached a pipe 43, preferably in the nature of a flexible hose, and this hose is connected through a manual valve 46 with a pipe 44 which extends to a suitable source of oil under continuous pressure, such as a pressure tank 45 containing the proper grade of oil. Air pressure may be supplied to this tank through pipe 44' and the tank is preferably equipped with a pressure gauge 45'. Suitable means (not shown) for heating the oil is preferably provided so as to maintain it in proper condition in cold weather.

In the oiling of railway car journal boxes it has been the practice to cause the cars to move slowly past a given point where a man with an oil can is stationed, and as each wheel passes, this man opens the lid of the journal boxes and delivers the necessary amount of oil thereto. It is customary to provide for this purpose a track having a slightly elevated point called "the hump" so that the cars roll downwardly along the track from this hump. It has been found in practice that the oil man sometimes

fails or neglects to apply oil to every journal box and that occasionally some journal box gets by without being oiled. The result of this is that eventually a "hot box" will develop on this particular journal box, thus causing much trouble. My improved apparatus is designed to obviate the possibility of such mishaps, and to insure that the proper amount of oil is delivered to each and every journal box as it passes the oiling station.

The operation of the apparatus will be apparent from the foregoing description. As each wheel comes along, the flange engages the shoe or treadle 20 and thus depresses the left hand end of the lever 9, thereby raising the right hand end to which the bar 23 is attached. As this bar 23 is raised, it moves the rod 27 upwardly. This rod 27 is arranged in vertical alignment with the valve stem 40 and is preferably cup-shaped at its upper end as indicated at 27' to engage the lower end of the valve stem. Therefore, as the rod 27 moves upwardly, it lifts the valve 38 from its seat, momentarily opening the valve and permitting oil under pressure from the tank 45 to flow through the valve and be ejected from the delivery nozzle 42 directly in the open journal box. It will be understood that the journal box lids D are opened as they approach the oiling station by a workman who stands by the side of the track. Thus, at the moment that the wheel flange engages the treadle the journal box lid is open so that the oil from the nozzle 42 is squirted directly into the open box. In order to insure the return of the lever 9 and associated parts to their initial position, so as to be ready for the next operation, a suitable weight 47 may be secured to the bar 23 as shown in Figs. 1 and 2. It will, of course, be understood that the apparatus illustrated in Figs. 1 and 2 is duplicated on the other side of the track; that is to say, a treadle and an oil delivery nozzle as described are provided adjacent each of the two rails of the track so that the journal boxes on both sides of the car are supplied with oil simultaneously.

What I claim is:

1. An automatic oiler for car journal boxes comprising a stationary oil delivery nozzle, means for supporting said nozzle in fixed position at a point spaced a substantial distance horizontally from a track rail and so directed as to deliver a stream of oil into the journal box of a car traveling on such rail, a closed tank partially filled with oil, means for introducing compressed air into the space in said tank above the oil level, whereby the oil is maintained under continuous pressure, conduit means extending from a point near the bottom of said tank to said nozzle, a valve outside of said nozzle interposed in said conduit means between said tank and nozzle and comprising a reciprocable valve member, a spring normally urging said member to closed position, and means comprising a pivoted lever operatively associated with said valve member and having a portion positioned to be engaged and operated by the wheel of a passing car for momentarily moving said valve member to open position against the tension of said spring.

2. An automatic oiler for car journal boxes comprising a horizontally directed stationary oil delivery nozzle, means for supplying oil under continuous pressure to said nozzle, a valve for controlling the flow of oil to said nozzle, said valve comprising a body rigidly connected with said nozzle, and a valve disc having a reciprocable downwardly projecting stem, and also hav-

ing a spring normally urging it to closed position, vertically adjustable means for rigidly supporting said valve body and nozzle at approximately the height of a car journal box, and means mounted adjacent the track rail and comprising a treadle operated by the wheel of a passing car for exerting an upward thrust on said valve stem to momentarily move said valve disc to open position against the tension of said spring.

3. An automatic oiler for car journal boxes comprising an oil delivery nozzle, means for supplying oil under continuous pressure to said nozzle, a valve for controlling the flow of oil to said nozzle, said valve being normally closed, a pair of spaced, horizontally extending plates adapted to be positioned in parallel vertical planes between two cross-ties and projecting beyond the ends thereof, means for rigidly securing said plates to said ties, a rigid, upright frame for supporting said valve and nozzle, said frame being secured to said plates, and means operated by the wheel of a passing car for momentarily opening said valve, said means including a lever pivotally mounted between and extending parallel with said plates and carrying at one end a treadle positioned to be engaged by said wheel.

4. An automatic oiler for car journal boxes comprising an oil delivery nozzle, means for supplying oil under pressure to said nozzle, a valve for controlling the flow of oil to said nozzle, said valve comprising a valve element having a reciprocable, downwardly projecting stem and also having a spring normally urging it to closed position, a pair of spaced, vertically disposed horizontally extending plates adapted to be positioned between two cross ties, means for rigidly securing said plates to said ties, a rigid, upright frame for supporting said valve and nozzle at the desired height, said frame being secured to said plates, and means operated by the wheel of a passing car for momentarily shifting said valve element to open position against the tension of said spring, said means including a lever pivotally mounted between and extending parallel with said plates, a treadle at one end of said lever positioned to be engaged by the wheel and a bar extending upwardly from the other end of said lever, and constructed to exert a vertical thrust on said valve stem when said lever is rocked on its pivot.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
772,153	Joy	Oct. 11, 1904
1,125,750	Smith	Jan. 19, 1915
2,593,841	Burchsted	Apr. 22, 1952

FOREIGN PATENTS

Number	Country	Date
287,791	Great Britain	Mar. 29, 1928
613,221	Great Britain	Nov. 24, 1948