Nov. 3, 1964 G. W. NELSON 3,155,191

AUTOMATIC JOURNAL BOX OILING APPARATUS

Filed Jan. 12, 1959 3 Sheets-Sheet 1

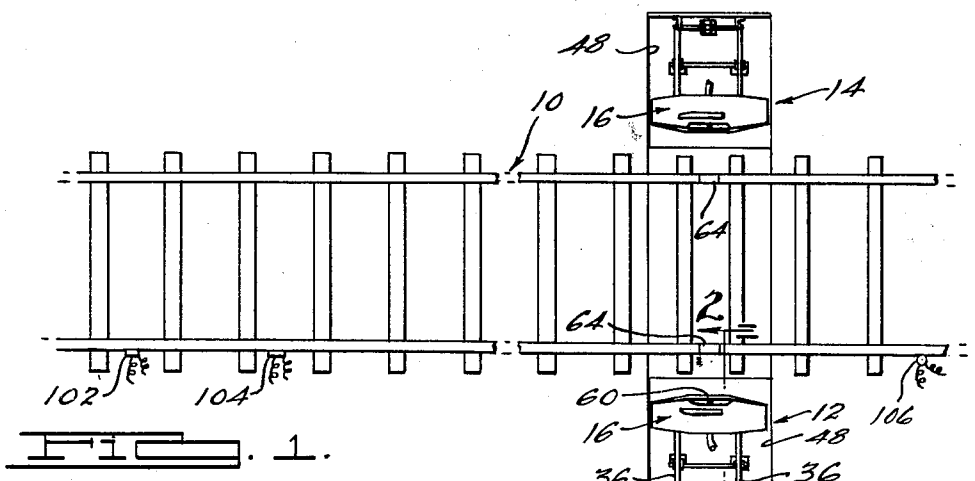


FIG. 1.

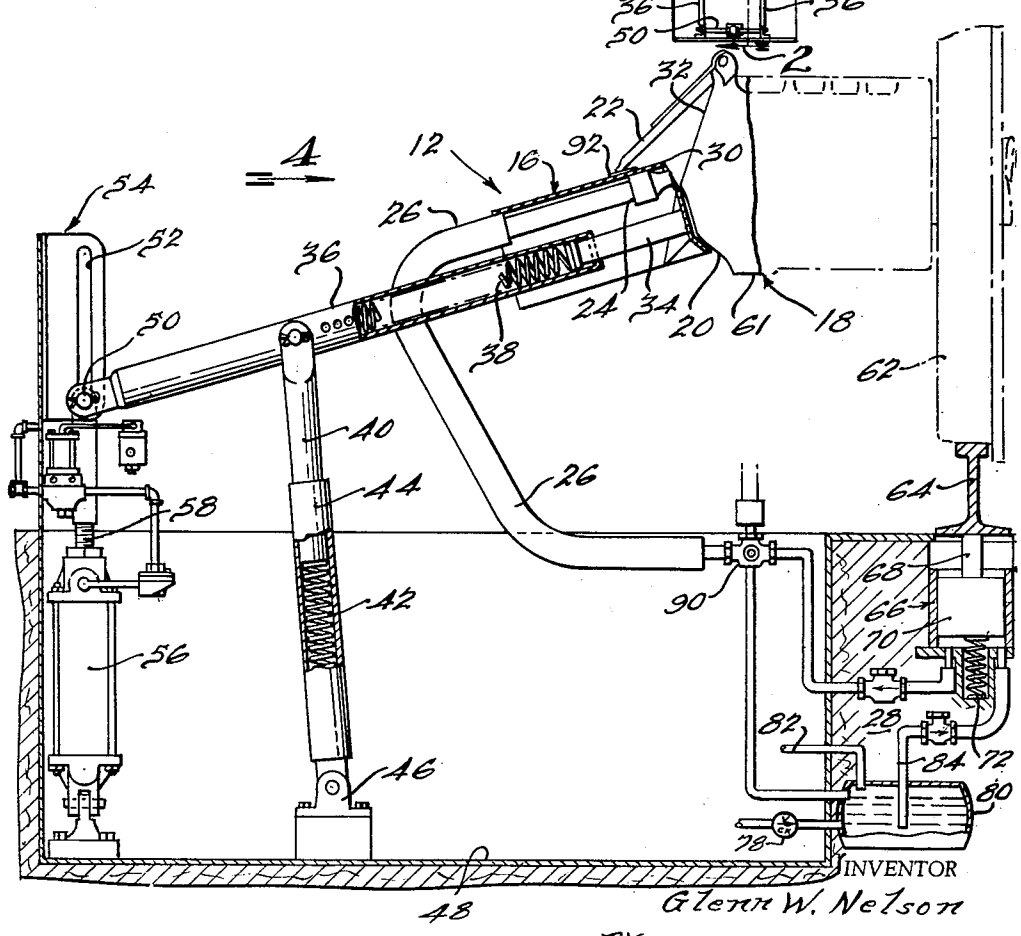


FIG. 2.

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Filed Jan. 12, 1959 3 Sheets-Sheet 2

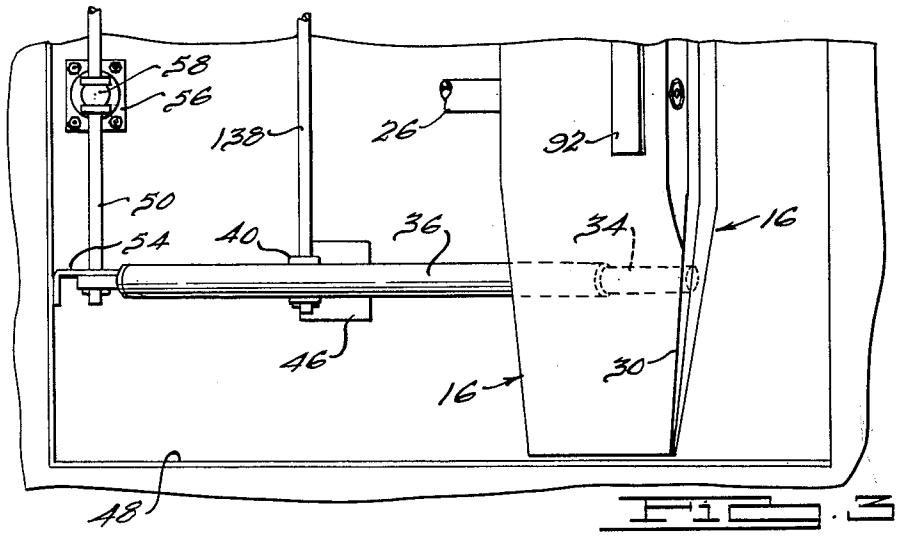


FIG. 3.

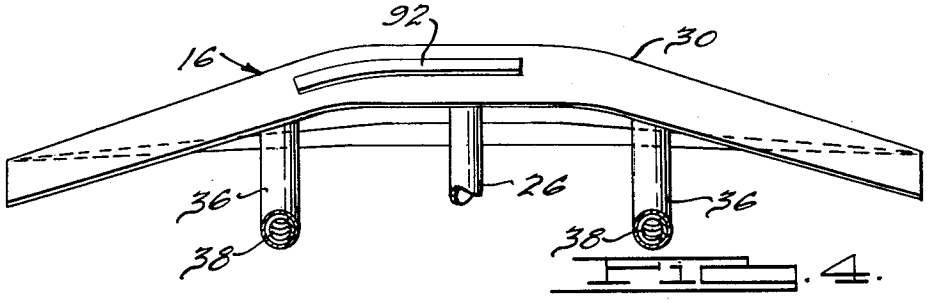


FIG. 4.

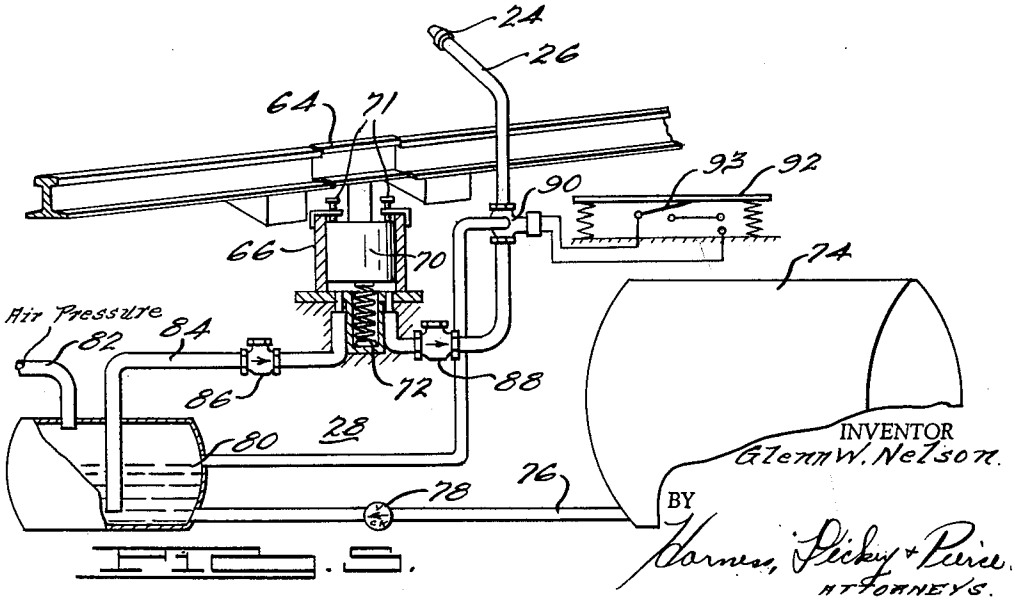


FIG. 5.

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AUTOMATIC JOURNAL BOX OILING APPARATUS

Filed Jan. 12, 1959 3 Sheets-Sheet 3

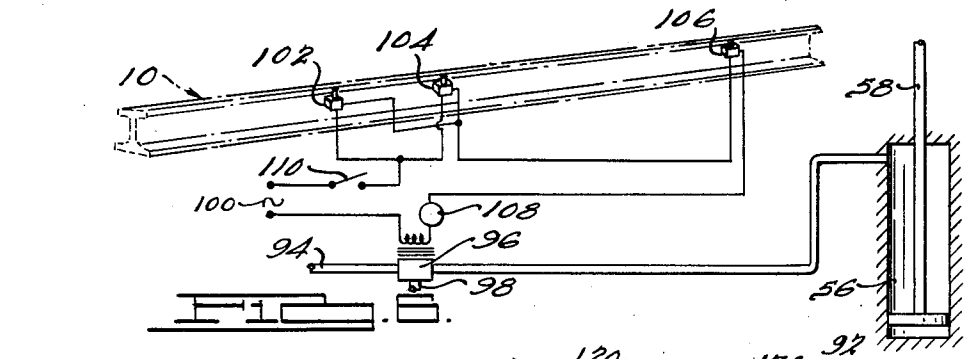


FIG. 1.

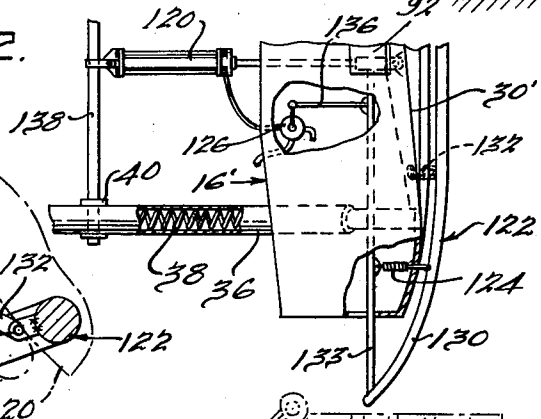


FIG. 2.

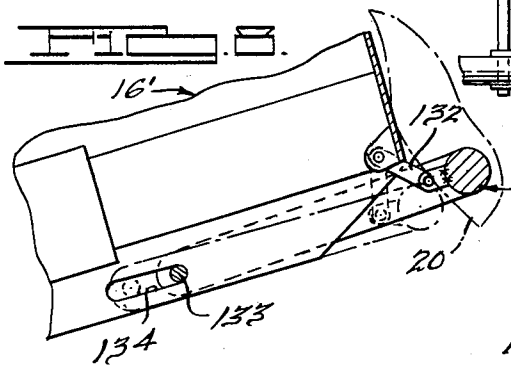


FIG. 3.

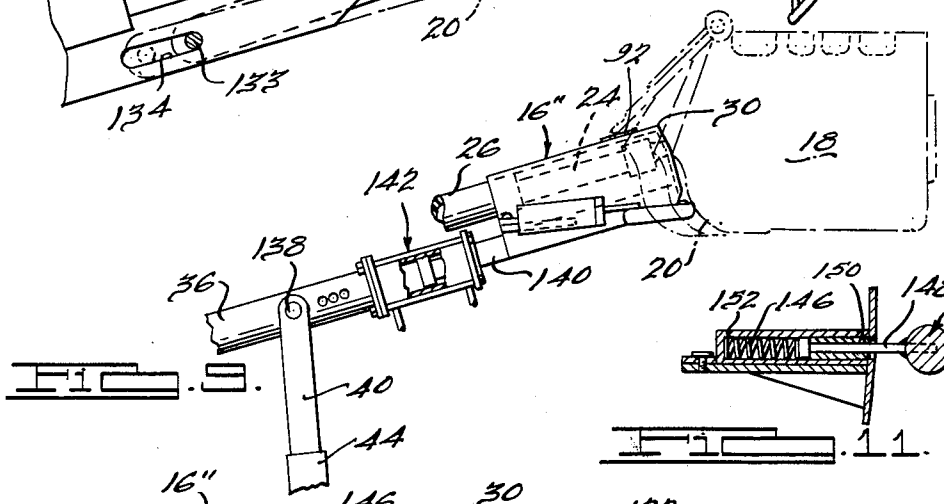


FIG. 9.

FIG. 11.

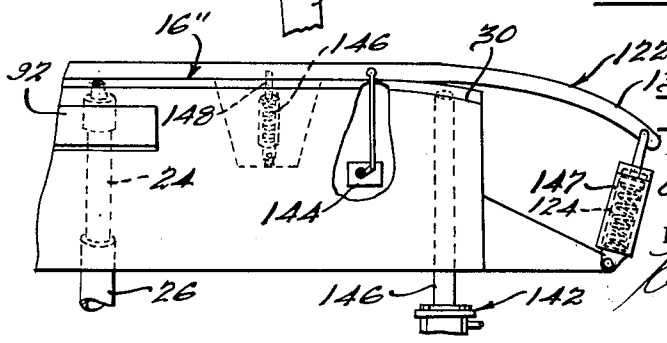


FIG. 10.

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3,155,191
AUTOMATIC JOURNAL BOX OILING APPARATUS

Glenn W. Nelson, Farmington, Mich., assignor to The New York Central Railroad Company, a corporation of Delaware

Filed Jan. 12, 1959, Ser. No. 786,339
34 Claims. (Cl. 184—2)

This invention relates to improved apparatus for oiling railway car journal boxes and the like, and more particularly, but not necessarily exclusively to improved apparatus of this type including means for lifting open the journal box covers as the cars are propelled past the apparatus.

The general object of the invention is to improve railway car journal box oiling apparatus. Other objects of the invention are: to provide improved journal box oiling apparatus including means for lifting the covers of railway car journal boxes as the cars are propelled past the apparatus; to provide improved apparatus of this type including means for positioning an oil nozzle immediately adjacent to the journal box opening for positively delivering oil into the boxes without spillage; to provide improved apparatus of this type including means for automatically retracting the oil injecting nozzle upon the approach of the locomotive employed for propelling the cars so that the locomotive journal boxes are not oiled and so that locomotive appurtenances do not foul the automatic oiling device; to provide improved apparatus of this character including means for restricting oiling to journal boxes having movable covers and so to avoid squirting oil upon roller bearing boxes, the covers of which are generally bolted in place; to provide improved apparatus for automatically partially opening the journal box covers of railway cars or the like as the cars are driven slowly past the apparatus, the apparatus being capable of lifting journal box covers of widely varying construction such as are found on present day railway cars, and thereby enabling automatic journal box cover opening and journal box oiling on long freight trains and the like, without requiring modification of the journal box construction; and in general to provide an improved automatic railway car journal box opener and oiler which is highly versatile and dependable in operation, simple and inexpensive to construct, and rugged and long wearing in service.

The foregoing and other objects and advantages of the invention will become apparent in the following detailed description of representative embodiments thereof, taken in conjunction with the drawings wherein:

FIGURE 1 is a partly schematic plan view showing a pair of automatic journal box oiling devices according to the invention arranged on opposite sides of a railway track;

FIG. 2 is a cross-sectional view taken generally along the line 2—2 of FIG. 1;

FIG. 3 is a fragmentary plan view on an enlarged scale of the journal box opening and oiling device shown in FIG. 2;

FIG. 4 is a fragmentary elevational view of the door opening and oiling device shown in FIG. 2, taken in the direction of the arrow 4 thereof;

FIG. 5 is a partly schematic view of the oil pumping and circulating circuit of the apparatus;

FIG. 6 is a schematic diagram of an electrical control circuit for use in conjunction with the apparatus shown in the preceding figures;

FIG. 7 is a fragmentary plan view showing a journal box opening device according to a first modified form of the invention;

FIG. 8 is a fragmentary cross-sectional view of the device shown in FIG. 7;

FIG. 9 is a fragmentary elevational view showing a third form of construction according to the invention;

FIG. 10 is a fragmentary plan view of the modified form of the invention shown in FIG. 9; and

FIG. 11 is a fragmentary cross-sectional view of a portion of the device shown in FIGS. 9 and 10.

Journal boxes found in common use on United States railways today are of several different sizes, and are provided with covers of widely variant construction. The differences in the dimensions, positions, shapes and other pertinent characteristics of the journal box covers are so great that insofar as is presently known no previous attempt has been made to open the covers automatically. Previous so-called automatic journal box oiling devices have generally included nozzles positioned outside of the standard clearance diagram and arranged to squirt a stream of oil a substantial distance from the nozzle orifice to the journal boxes as the cars are propelled slowly past the nozzle. The term "standard clearance diagram" as used herein is a term well recognized in the trade as referring to a diagram of maximum dimensions in a plane at right angles to the track which has been adopted by the Association of American Railroads for railroad equipment which is acceptable for interchange service. Such arrangements have been subject to considerable difficulty in operation, especially on windy days, and even in good weather depend to a large extent upon maintaining the car at a precisely predetermined speed as it passes the device. If the car is moving too slowly or too rapidly, a substantial part of the oil ejected from the nozzle is apt to fall outside the journal box. Moreover, a relatively large amount of hand labor is required with such previous devices for opening and closing the jourlay box covers.

The present invention provides apparatus which successfully overcomes substantially all of the disadvantages and inefficiencies of previous automatic journal box oiling devices, and which includes means for automatically opening the journal box covers and for positioning an oil ejection nozzle immediately adjacent to the journal box opening. The oil passes directly from the nozzle orifice into the journal box without having to traverse a substantial intervening free space, thus insuring that substantially all of the oil ejected from the nozzle falls into the journal box. The apparatus is substantially weatherproof, and the oil delivery is unaffected by variables such as wind and the like.

The practice of the present invention takes advantage of two basic points of similarity among journal box covers. Substantially all railway journal box covers of the type used on nonroller bearing journal boxes are hinged at the top and biased with an over-center spring arrangement which retains them in either a fully closed or a fully open position, depending upon where they are manually set. They all also have downwardly projecting flanges, of one sort or another, which overhange the journal box face. In the practice of the present invention, a stationary blade is positioned to engage the cover flange from beneath as the journal box moves past the blade, and to wedge the cover to a partly open position. A nozzle is positioned adjacent to the blade just below its operative edge for delivering oil into the box while the cover is held open by the blade. The nozzle orifice is positioned immediately adjacent to the journal box opening so that there is substantially no danger of spillage due to wind or due to variations in speed of the car. The covers are automatically raised, oil is injected into the boxes, and the covers then reclosed, all automatically without manual assistance as the car passes the device. The device automatically accommodates itself to jour-

nal boxes of the various sizes and construction in railway use.

Referring now to the drawings, journal box opening and oiling devices of the present invention are preferably arranged in pairs, as illustrated in FIG. 1, upon opposite sides of a railway track 10 in a classification, or marshalling yard on the up-hill side of the "hump" (not shown) so that each car would proceed past the devices as it is classified. The devices 12 and 14 on opposite sides of the track illustrate a first embodiment of the invention, and are substantially identical to each other except for change of hand. They may be operated substantially independently of each other for oiling the journal boxes along the opposite respective sides of the cars. They may be connected with a common control apparatus for retracting them beyond the standard clearance diagram when desired, or, if desired, separate controls may be provided, depending upon the requirements of the local situation.

As shown in FIGS. 2–4, each one of the devices 12 and 14 includes a journal box cover opening blade 16, which is of box construction and has downwardly and outwardly tapered end portions. (The terms "outwardly" and "inwardly" are used herein with reference to the track 10, "outwardly," for example, denoting away from the track.) The blade 16 is resiliently supported in a position to engage the journal boxes 18 as they move past it, and to ride up along the lower curved face 20 of each journal box to engage the cover 22 and to wedge it partly open. The blade 16 is preferably adjusted to open the cover 22 to a position short of its on-center position, so that when the journal box 18 is carried past the blade the cover will automatically reclose under the urging of its over-center spring (not shown). The blade 16 carries an oil ejector nozzle 24, which is connected by a flexible hose 26 to an oil supply system 28 and means are provided for ejecting oil from the nozzle 24 into the journal box 18 at the time the journal box is positioned directly in front of the nozzle.

The blade 16 is normally supported in a position slightly inward (that is, slghtly closer to the track 10) of the position shown in FIG. 2, and at about the same height and attitude as illustrated therein. The end portions of he blade 16 are faired downwardly and outwardly as perhaps best shown in FIGS. 3 and 4, so that the upper corner, or edge 30 of the blade will engage the curved lower portion 20 of the journal box below the bottom of the cover 22, yet above the bottom of the journal box itself. As the journal box moves past the blade 16, it drives the blade outwardly, and the blade rides up along the curved face 20 of the journal box until it engages the cover 22, the corner 30 of the blade riding up into the notch defined by the bottom edge of the cover and the journal box. The blade is then wedgingly forced between the cover 22 and the outer face 32 of the journal box, thus partly opening the cover. The opening action is dependent upon the shape of the blade 16 and upon the spring mounting arrangement for the blade. The reaction force of the spring mounting arrangement keeps the blade 16 in pressure engagement against the journal box 18 and ensures engagement of the cover 22. The blade 16 is mounted upon a pair of piston rods 34, which are slidably fitted within supporting cylinders 36 and biased inwardly (toward the track 10) by compression coil springs 38. The springs 38 are fitted within the cylinders 36 between fixed abutments (not separately shown) therein and the inner ends of the rods 34. The cylinders 36 are pivoted upon generally vertically positioned rods 40, which are resiliently supported upon springs 42 within vertical guide cylinders 44. The vertical cylinders 44 are pivoted upon fixed supports 46 which, as shown, are mounted upon the floor of a pit 48 arranged immediately adjacent to the track 10. The outer ends of the horizontal cylinders 36 are pivoted upon a vertically movable horizontal bar 50, which extends through vertical slots 52 formed in a pair of fixed brackets 54.

During operation of the device, the bar 50 is normally held in its lowermost position, as shown in FIG. 2. When it is desired to retract the blade 16 in order to avoid interference with projecting equipment such as ladders fitted on locomotives, or in order to avoid oiling certain journal boxes, the rod 50 is released and the weight of the blade 16 pivots the horizontal cylinders 36 clockwise as viewed in FIG. 2, dropping the blade 16 while the rod 50 rises in the slots 52 to the upper limit thereof. The slot 52 is sufficiently long to permit the blade 16 to fall beyond the standard clearance diagram when it is retracted.

During operation, the rod 50 is normally held in its lowermost position by a penumatic or hydraulic cylinder 56, which has a piston rod 58 connected to the rod 50 for pulling the rod 50 downwardly when the cylinder 56 is energized. This arrangement provides a "fail-safe" characteristic, since the blade 16 is automatically retracted whenever the apparatus is de-energized, and the danger of the blade 16 being fouled by projecting equipment on the trains is minimized.

In action, the blade 16 is first engaged by the lower curved face 20 of the journal box, and then, as the journal box moves along the blade, it drives the blade outwardly against the urging of the springs 38 to an extent depending upon the size of the journal box and its location relative to the track 10. The springs 38 maintain the blade 16 in resilient engagement with the face 20 of the journal box and insure that the upper corner 30 of the blade will be wedged beneath the depending lip of the cover 22.

In operation, the blade 16 also makes use of the resilience of the vertical springs 42, since it has been found that the blade functions with greater reliability when it is resiliently supported in a vertical sense, so that it can be momentarily depressed by uneven parts of the front face 20 of the journal box and then work it way back up to its normal height when the downward pressure is relieved. The action is smoother, and less strain is placed upon the supporting mechanism than would be the case were the vertical support made rigid and nonresilient. Also, the resilience of the vertical springs 42 enables the horizontal springs 38 to keep the blade 16 constantly in contact with the journal box 18 and prevents sudden jolts from bouncing the blade out of contact with the journal box. The vertical springs 42 also provide a safety factor in the event the blade 16 becomes engaged under the flat lower surface 61 of the journal box (as may occasionally happen in this embodiment of the invention in the case of the largest journal boxes) and permits the blade 16 to be deflected downwardly beneath the journal box without damage to the blade or to the other parts of the device.

When the journal box 18 comes into position directly in front of the nozzle 24, the car wheel 62 rides upon a short vertically movable rail section 64, which actuates a pump cylinder 66 for ejecting a measured quantity of oil out of the nozzle 24 into the journal box 18. The movable rail section 64 is normally supported at a height a little above the fixed rails upon a piston rod 68, which is secured to a piston 70 mounted within the pump cylinder 66 and biased upwardly by a compression coil spring 72. The coil spring 72 is sufficiently strong to keep the rail section 64 in its raised position in the absence of a load, and is readily compressed by the weight of the vehicle when the wheel 62 passes over upon the movable section 64. The downward travel of the rail section 64 is limited by abutment of the piston 70 upon the floor of the cylinder 66, providing a solid support for the car wheel 62.

The pump displacement is adjustable by means of a pair of adjustable stops 71 (FIG. 5) which limit the upward travel of the piston 70. The stops 71 are adjusted to provide a piston displacement equal to the volume of oil it is desired to discharge into each one of the journal boxes.

The hydraulic circuit, as best shown in FIG. 5, includes a main oil reservoir 74 having an outlet 76 connected through a check valve 78 to a low pressure tank 80, which has an air pressure inlet 82 and an oil outlet 84. The oil

outlet 84 is connected through a check valve 86 to the cylinder 66. The cylinder 66 is also connected through a spring loaded check valve 88 to a three-way solenoid actuated valve 90, and through the three-way valve 90 to the nozzle 24 and to the low pressure tank 80.

In operation, a relatively low pressure of, for example, 15 to 25 lbs. is maintained in the low pressure tank 80 and through the check valve 86 also in the cylinder 66, thus ensuring a positive oil supply to the cylinder even though the tank 80 is buried. The spring loaded check valve 88 is adjusted to open only at a substantially greater pressure than the low pressure maintained normally in the cylinder 66, and to open readily in response to pressures of the magnitude generated by the weight of the car wheel 62 on the movable rail section 64.

The three-way valve 90 is normally positioned to connect the pump cylinder 66 to the pressure tank 80 so that any leakage through the spring loaded check valve 88 automatically finds its way back to the tank 80. The three-way valve 90 is solenoid actuated, and is arranged to direct oil toward the nozzle 24 only when the blade is in its operative, nonretracted position, and only for a relatively short predetermined time following opening of one of the journal box covers. Oil pumped at any other time is merely circulated back to the pressure tank 80 for re-use.

The pressure tank 80 is filled by gravity through the check valve 78 from the main tank 74 when the air pressure is cut off.

Opening of the journal box cover 22 is detected by a sensing device such as the pressure plate 92 shown, which is mounted on top of the blade 16 for actuation by the cover 22. The pressure plate 92 actuates a switch 93 for energizing the solenoid valve 90 and moving it to its nozzle discharge position. The switch 93 is of the slow return type so that it remains closed for a predetermined relatively short period after it is actuated. This is to insure that the valve 90 remains in its nozzle discharge position during the time required for oil delivery into the journal box 18, even though the cover 22 may lose contact with the plate 92. The time delay may, of course, be incorporated in a separate device, or in the solenoid actuated three-way valve 90, instead of in the switch 93.

Only a single measured unit quantity of oil will be delivered to any one journal box, even if the car wheel 62 happens to stop and remain for a prolonged period upon the rail section 64.

It should also be noted that when the blade 16 is retracted, passage of vehicles over the movable rail section 64 will not cause oil to be ejected from the nozzle 24, but will merely be effective to circulate oil from the cylinder 66 through the three-way valve 90 and back to the pressure tank 80. The switch 93 will not be actuated by cars equipped with roller bearings, which are usually mounted in journal boxes having bolted-on covers, since the bolted-on covers will not extend over the edge of the blade to engage the pressure plate 92, and the three-way valve 90 will not be energized.

Provision may be made for automatically retracting the blade 16 in any desired eventuality. For example, during train classification the switching locomotive usually travels over the hump several times during the course of a work day, and it is usually not desired to oil its journal boxes each time it passes by the oiling devices. Switching locomotives are also often equipped with ladders and other types of equipment which project downwardly into the path of the blade 16 and may foul the blade if it is not retracted upon its approach. It is also desirable to retract the blade 16 upon reverse travel of cars over the hump such as when a train is being pulled out of the yard. These two automatic retracting features are illustrated in the drawings, particularly in FIG. 6, and as shown incorporate "fail-safe" features so that in the event of a power failure or equipment malfuction the blade 16 will automatically retract, and will not be held in position within the standard clearance diagram where it can be fouled by passing equipment.

As hereinabove described, the blade is held in its operative position by a pneumatic or hydraulic cylinder 56 which, when it is de-energized, releases the blade 16 and permits it to fall to its retracted position. Working fluid for energizing the cylinder 56 is admitted to the cylinder from a main pressure line 94, through a three-way solenoid actuated valve 96, one port 98 of which is vented to atmosphere in the case of a pneumatic system, or to drain if a hydraulic system is used. The valve 96 is spring biased toward the position in which it connects the cylinder 56 to the exhaust port 98 so that the cylinder 56 is de-energized whenever the valve 96 is de-energized. When the solenoid valve 96 is energized, it is moved to a position in which it connects the air inlet conduit 94 to the cylinder 56, thereby energizing the cylinder and raising the blade 16 to its operative position.

Failure of the working fluid pressure, or failure of the electrical circuits results in fail-safe operation, that is, in de-energization of the cylinder 56, thereby retracting the blade 16 by gravity.

The solenoid valve 96 is connected to any convenient source of electrical energy 100 through the switching circuit shown in FIG. 6, which includes three normally closed track switches 102, 104, and 106, and a time delay switch 108. The first two track switches 102 and 104 are arranged for sensing the approach of a locomotive. They are spaced apart along the track 10 a distance corresponding to the locomotive wheelbase, which is generally greater than the wheelbase of a railway car truck. The actuating members of the two switches 102 and 104 may be relatively long and extend sufficiently far along the track so that the switches will be actuated simultaneously by any of a large variety of locomotives having relatively different wheelbases, but in any event these two switches 102 and 104 are spaced sufficiently far apart so that they will not be simultaneously actuated by the wheels of a railway car.

The two switches 102 and 104 are electrically connected in parallel with each other and in series with the solenoid valve 96. When the switches 102 and 104 are actuated simultaneously, that is, moved to their open positions, the solenoid valve 96 is de-energized, thereby retracting the blade 16 to avoid oiling the engine journal boxes. The time delay switch 108 is of the self-energized, timed closing type, and is included in the circuit to prevent re-energization of the valve 96 during a predetermined interval subsequent to the simultaneous actuation of the track switches 102 and 104, thereby allowing sufficient time for the locomotive to pass from the switches 102 and 104 past the blade 16. Actuation of the two switches 102 and 104 in sequence has no effect on the circuit, so the solenoid valve 96 remains energized while cars pass over the switches 102 and 104.

The third track switch 106 is also of the normally closed type and is arranged to be actuated only by railway vehicles moving in the reverse direction. It is connected electrically in series with the solenoid valve 96 for de-energizing it in response to movement of a railway vehicle in the reverse direction past the blade 16. The third switch 106 is in series with the timer 108, which keeps the circuit open during the passage of the vehicle from the switch 106 past the blade 16. A master control switch 110 is also included in the circuit in series with the solenoid valve 96 for de-energizing it manually. The manual switch 110 is preferably situated at a control point where it is readily accessible to the operations supervisor. Additional controls for automatically retracting the blade 16 may be included in the circuit, as desired, according to the requirements of the individual installation.

In the embodiment illustrated in FIGS. 7 and 8 representing a modified form of apparatus according to the invention, the cover opening blade 16' is shaped slightly differently from the blade 16 hereinabove described, being

somewhat shorter and not being tapered downwardly and outwardly to the extent of the blade 16. The blade 16' is mounted similarly to the blade 16 hereinabove described, being urged inwardly by a pair of compression coil springs 38. Retraction of the blade 16' to accommodate its position to the different journal boxes is accomplished differently. The blade 16' is not simply pushed outwardly by the journal boxes. Instead, it is moved outwardly by a single acting pneumatic or hydraulic cylinder 120, which is controllably energized by a control, or contact bar 122. The contact bar 122 is movably mounted on the blade 16' for engaging the lower curved portions 20 of the journal boxes. It is slightly urged inwardly (toward the track 10 by a pair of coil springs 124, and is linked to a three-way valve 126 which is connected for controlling the cylinder 120. In the absence of a journal box, the contact bar 122 remains in its furthest advanced position, and holds the three-way valve 126 in a position to connect the cylinder 120 to atmosphere (or to drain in the case of a hydraulic arrangement).

When the contact bar 122 is moved outwardly by engagement with a journal box, it moves the valve 126 in a direction to energize the cylinder 120, thus causing the blade 16' to be withdrawn toward a position where it will just contact the journal box. The contact box 122 acts as a pilot, or "feeler," to sense the journal box location and to adjust the valve 126 so that the cylinder 120 withdraws the blade 16' to its working position where it just meets the journal box. As the journal box proceeds past the contact bar 122, or if the box moves away from the blade 16', the contact bar 122 follows and moves inwardly (to the right as viewed in FIGS. 7 and 8) and readjusts the valve 126 so that the blade 16' also moves inwardly, either to its fully advanced position, in the event the journal box has gone by, or to the new position of the journal box.

The contact bar 122 is shaped generally like a bow, having outwardly curved end portion 130, which extend beyond the ends of the blade 16, and which first engage the journal boxes. The bar 122 is mounted near the lower part of the blade 16' and is supported by a pair of links 132, which permit limited swinging travel of the bar 122 relative to the blade 16' toward and away from the track 10. A straight rod 133 is connected across the tips of the bar 122 in the manner of a bow string for supporting the bar against rotation and to keep the end portions 130 properly aligned. The rod 133 extends through generally horizontal slots 134 in the end walls of the blade, which support it and also limit its travel. As shown, the biasing springs 124 and the link 136 to the control valve 126 are both connected to the rod 133. The single acting cylinder 120 is connected between the blade 16' and the pivot bar 138, upon which the guide tubes 36 are pivoted.

In the second modified form of the device shown in FIGS. 9, 10, and 11, the blade 16'' is shaped generally similarly to the blade 16', being relatively short, and not swept back at its ends as much as the blade 16 shown in FIGS. 1–4. The blade 16'' is mounted upon the piston rods 140 of a pair of double acting pneumatic, or hydraulic cylinders 142, which are fixed at the ends of the pivoted tubes 36. The cylinders 142 are connected through a four-way valve 144 to any desired source of pressure working fluid for controllably driving the blade 16'' inwardly toward the track 10 or outwardly.

The valve 144 is linked to a contact bar 122 which is movably supported upon the blade near the bottom thereof and urged inwardly by springs 146 and 147. The bar 122 in this embodiment of the invention is carried by a pair of rods 148 which extend slidably through guide sleeves 150 into housings 152 mounted on the blade 16''. The rods 148 are urged away from the blade 16'' by the spring 146, which are enclosed within the housings 152.

The contact bar 122 is normally carried in its limit position furthest from the blade 16'', and in this position holds the valve 144 in position to energize the blade driving cylinders 142 in the inward direction. When the contact bar 122 is struck by a journal box and thereby moved toward the blade 16'', it moves the valve 144 toward its reverse position, reversing the energization of the cylinders 142, and thereby withdrawing the blade 16'' to a new position corresponding to the position of the journal box. As the blade 16'' is withdrawn by the cylinders 142, the contact bar 122 is kept in contact with the journal box by the springs 146 and 147 with a resulting relative movement between the bar 122 and the blade 16'' which moves the valve 144 back toward its initial position.

The blade 16'' is thus power actuated toward a position in which it just contacts the journal box, and is held in engagement therewith by a relatively light inward force exerted by the cylinders 142.

The blades 16' and 16'' in the power actuated embodiments of the invention illustrated in FIGS. 7 to 11 are substantially free of any tendency to be caught beneath even the largest and farthest projecting journal boxes. They also tend to remain more stable in a vertical sense, and not to be carried downwardly by their frictional engagement with the curved lower faces 20 of the journal boxes. The power actuated positioning of the blades 16' and 16'' reduces the pressure of the blades against the journal boxes relative to the pressure exerted by the blade 16 of the first described embodiment, and thus reduces the downward forces exerted by the journal boxes on the blades.

Devices according to the present invention are operative for opening substantially all covers presently used on standard railway journal boxes in this country. The blades may be adjusted in height to raise the covers beyond their on-center positions so that they open completely. Preferably, however, the blades are adjusted to raise the covers to a position below their on-center positions so that they will be automatically reclosed by their over-center springs as they leave the blades. In this way, substantially no manual labor is required for the heretofore tedious and time consuming job of oiling the journal boxes, opening and closing the journal box covers, and transporting oil along a line of cars.

The oil nozzle is carried by the blade and thereby positioned immediately adjacent to the journal box opening during oil delivery, thus avoiding all difficulties due to wind and car speed variations, and achieving positive delivery of oil into the journal box without spillage.

What is claimed is:

1. Journal box cover opening device comprising a blade, mounting means for mounting said blade adjacent to a railway track in a position to be engaged by the journal boxes of railway vehicles passing along the track, and means for urging said blade toward the track and for keeping said blade in pressure engagement with the outer faces of the journal boxes as the journal boxes pass said blade, said blade having an outwardly and downwardly extending end portion for making initial contact with the journal boxes at points thereon below the journal box covers, and a central portion positioned above the closed position of the lower edges of the journal box covers, whereby as a journal box progresses along said blade it is engaged by progressively higher portions of said blade and the lower edge of the journal box cover comes into engagement with the blade and the cover is thereby opened.

2. Journal box cover opening device comprising a blade, mounting means for mounting said blade adjacent to a railway track in a position to be engaged by the journal boxes of railway vehicles passing along the track, and yieldable means for urging said blade toward the track and for keeping said blade in pressure engagement with the outer faces of the journal boxes as the journal boxes pass said blade, said blade having an outwardly and downwardly extending end portion for making initial contact

with the journal boxes at points thereon below the journal box covers, and a central portion positioned above the closed position of the lower edges of the journal box covers, whereby as a journal box progresses along said blade it is engaged by progressively higher portions of said blade and the lower edge of the journal box cover comes into engagement with the blade and the cover is thereby opened.

3. A device for raising the covers of railway vehicle journal boxes as the vehicles move along a railway track comprising a blade, means for mounting said blade alongside the railway track in a position to be contacted by the journal boxes of railway vehicles passing therealong, means adapted to be engaged by and co-operable with each journal box for automatically positioning said blade laterally relative to the track in accordance with and responsive to the extent of the lateral projection of a railway vehicle journal box as the journal box approaches said blade so that said blade is wedgingly engaged beneath the overhanging lip of the journal box cover and thereby lifts the cover at least partly open.

4. A device for raising the covers of railway vehicle journal boxes as the vehicles move along a railway track comprising a blade, means for mounting said blade alongside the railway track in a position to be contacted by the journal boxes of railway vehicles passing therealong, means adapted to be engaged by and co-operable with each journal box for automatically positioning said blade laterally relative to the track in accordance with and responsive to the extent of the lateral projection of a railway vehicle journal box as the journal box approaches said blade so that said blade is wedgingly engaged between the face of the journal box and the overhanging lip of the cover and thereby lifts the cover at least partly open, said positioning means including a spring arranged to urge said blade inwardly toward the track and to yield as the blade is cammed outwardly by the journal boxes.

5. A device for raising the covers of railway vehicle journal boxes as the vehicles move along a railway track comprising a blade, means for mounting said blade alongside the railway track in a position to be contacted by the journal boxes of railway vehicles passing therealong, means for positioning said blade laterally relative to the track in accordance with the lateral projection of a railway vehicle journal box as the journal box approaches said blade so that said blade is wedgingly engaged between the face of the journal box and the overhanging lip of the cover and thereby lifts the cover at least partly open, said positioning means including a spring arranged to urge said blade inwardly toward the track, a motor for moving said blade outwardly against the urging of said spring, and control means adapted to be successively engaged by said journal boxes for energizing said motor in response to the position of each journal box transversely of the railway track whereby said blade is positioned to contact the face of the journal box and be engaged behind the overhanging lip of the journal box cover for raising the cover to at least a partly open position.

6. A device for raising the covers of railway vehicle journal boxes as the vehicles move along a railway track comprising a blade, means for mounting said blade alongside the railway track in a position to be contacted by the journal boxes of railway vehicles passing therealong, means for positioning said blade laterally relative to the track in accordance with the lateral projection of a railway vehicle journal box as the journal box approaches said blade so that said blade is wedgingly engaged between the face of the journal box and the overhanging lip of the cover and thereby lifts the cover at least partly open, said positioning means including motor means for driving said blade alternatively inwardly toward the track and outwardly away from the track, and control means adapted to be successively engaged by said journal boxes for actuating said motor means in response to the position of each journal box transversely of the railway track and for thereby adjusting the position of said blade to accommodate it successively to journal boxes of different respective sizes.

7. A device for raising the covers of railway vehicle journal boxes as the vehicles move along a railway track comprising a blade, means for mounting said blade alongside the railway track in a position to be contacted by the journal boxes of railway vehicles passing therealong, means for positioning said blade laterally relative to the track in accordance with the lateral projection of a railway vehicle journal box as the journal box approaches said blade so that said blade is wedgingly engaged between the face of the journal box and the overhanging lip of the cover and thereby lifts the cover at least partly open, said positioning means including means for driving said blade inwardly toward the track, motor means for driving said blade outwardly away from the track, and control means adapted to be successively engaged by said journal boxes for actuating said motor means in response to the position of each journal box transversely of the railway track and for thereby adjusting the position of said blade to accommodate it successively to journal boxes of different respective sizes.

8. A device for raising the covers of railway vehicle journal boxes as the vehicles move along a railway track comprising a blade, means for mounting said blade alongside the railway track in a position to be contacted by the journal boxes of railway vehicles passing therealong, means for positioning said blade laterally relative to the track in accordance with the lateral projection of a railway vehicle journal box as the journal box approaches said blade so that said blade is wedgingly engaged between the face of the journal box and the overhanging lip of the cover and thereby lifts the cover at least partly open, said positioning means including means for driving said blade inwardly toward the track, motor means for driving said blade outwardly away from the track, and control means adapted to be successively engaged by said journal boxes for actuating said motor means in response to the position of each journal box transversely of the railway track and for thereby adjusting the position of said blade to accommodate it successively to journal boxes of different respective sizes, said control means including an energizing circuit for said motor, a movable member arranged in the energizing circuit of said motor, a contact bar mounted on said blade for limited inward and outward movement relative thereto, said bar having outwardly curved end portions and extending generally longitudinally relative to the track between the blade and the track at a level to strike the journal box faces below the journal box covers, means for linking said bar to said movable member whereby movement of the bar relative to said blade such as may be caused by an outward force exerted on the bar by a passing journal box is effective to actuate said motor in a direction to adjust the position of said blade for smooth contact with the face of the journal box.

9. A device for raising the covers of railway vehicle journal boxes as the vehicles move along a railway track comprising a blade, means for mounting said blade alongside the railway track in a position to be contacted by the journal boxes of railway vehicles passing therealong, means for positioning said blade laterally relative to the track in accordance with the lateral projection of a railway vehicle journal box as the journal box approaches said blade so that said blade is wedgingly engaged between the face of the journal box and the overhanging lip of the cover and thereby lifts the cover at least partly open, said positioning means including means for driving said blade inwardly toward the track, motor means for driving said blade outwardly away from the track, and control means adapted to be successively engaged by said journal boxes for actuating said motor means in response to the position of each journal box transversely of the railway track and for thereby adjusting the position of

said blade to accommodate it successively to journal boxes of different respective sizes, said control means including an energizing circuit for said motor, a movable member arranged in the energizing circuit of said motor, a contact bar mounted on said blade for limited inward and outward movement relative thereto, said bar having outwardly curved end portions and extending generally longitudinally relative to the track between the blade and the track at a level to strike the journal box faces below the journal box covers, means for yieldably urging said bar away from said blade toward the track, means for linking said bar to said movable member whereby movement of the bar relative to said blade such as may be caused by an outward force exerted on the bar by a passing journal box is effective to actuate said motor in a direction to adjust the position of said blade for smooth contact with the face of the journal box.

10. Journal box cover opening device comprising a blade, mounting means for mounting said blade adjacent to a railway track in a position to be engaged by the journal boxes of railway vehicles passing along the track, and means for urging said blade toward the track and for keeping said blade in pressure engagement with the outer faces of the journal boxes as the journal boxes pass said blade, said blade having an outwardly and downwardly extending end portion for making initial contact with the jorunal boxes at points thereon below the journal box covers, and a central portion positioned above the closed position of the lower edges of the journal box covers, whereby as a journal box progresses along said blade it is engaged by progressively higher portions of said blade and the lower edge of the journal box cover comes into engagement with the blade and the cover is thereby opened, said urging means including a resiliently yieldable support for resiliently resisting downward forces exerted on said blade by passing journal boxes and for returning said blade to its normal position in the vertical sense when such downward forces are relieved.

11. Journal box cover opening device comprising a blade, mounting means for mounting said blade adjacent to a railway track in a position to be engaged by the journal boxes of railway vehicles passing along the track, and means for automatically urging said blade toward the track and keeping said blade in pressure engagement with the outer faces of the journal boxes as the journal boxes pass said blade, said blade having an outwardly and downwardly extending end portion for making initial contact with the journal boxes at points thereon below the journal box covers, and a central portion positioned above the closed position of the lower edges of the journal box covers, whereby as a journal box progresses along said blade it is engaged by progressively higher portions of said blade and the lower edge of the journal box cover comes into engagement with the blade and the cover is thereby opened, and means for automatically retracting said blade to a position outside of the standard clearance diagram to avoid fouling by projecting equipment carried by railway vehicles.

12. Journal box cover opening device comprising a blade, mounting means for mounting said blade adjacent to a railway track in a position to be engaged by the journal boxes of railway vehicles passing along the track, and means for urging said blade toward the track and for keeping said blade in pressure engagement with the outer faces of the journal boxes as the journal boxes pass said blade, said blade having an outwardly and downwardly extending end portion for making initial contact with the journal boxes at points between below the journal box covers, and a central portion positioned above the closed position of the lower edges of the journal box covers, whereby as a journal box progresses along said blade it is engaged by progressively higher portions of said blade and the lower edge of the journal box cover comes into engagement with the blade and the cover is thereby opened, means for retracting said blade to a position outside of the standard clearance diagram to avoid fouling by projecting equipment carried by railway vehicles, and control means for actuating said retracting means.

13. Journal box cover opening device comprising a blade, mounting means for mounting said blade adjacent to a railway track in a position to be engaged by the journal boxes of railway vehicles passing along the track, and means for urging said blade toward the track and for keeping said blade in pressure engagement with the outer faces of the journal boxes as the journal boxes pass said blade, said blade having an outwardly and downwardly extending end portion for making initial contact with the journal boxes at points thereon below the journal box covers, and a central portion positioned above the closed position of the lower edges of the journal box covers, whereby as a journal box progresses along said blade it is engaged by progressively higher portions of said blade and the lower edge of the journal box cover comes into engagement with the blade and the cover is thereby opened, means for retracting said blade to a position outside of the standard clearance diagram to avoid fouling by projecting equipment carried by railway vehicles, and control means adapted to be actuated by a railway locomotive for actuating said retracting means thereby to retract said blade upon the approach and during the passage of a locomotive past said blade.

14. Journal box cover opening device comprising a blade, mounting means for mounting said blade adjacent to a railway track in a position to be engaged by the journal boxes of railway vehicles passing along the track, and means for urging said blade toward the track and for keeping said blade in pressure engagement with the outer faces of the journal boxes as the journal boxes pass said blade, said blade having an outwardly and downwardly extending end portion for making initial contact with the journal boxes at points thereon below the journal box covers, and a central portion positioned above the closed position of the lower edges of the journal box covers, whereby as a journal box progresses along said blade it is engaged by progressively higher portions of said blade and the lower edge of the journal box cover comes into engagement with the blade and the cover is thereby opened, means for retracting said blade to a position outside of the standard clearance diagram to avoid fouling by projecting equipment carried by railway vehicles, and control means adapted to be actuated by a railway locomotive for actuating said retracting means thereby to retract said blade upon the approach and during the passage of a locomotive past said blade, said control means including switch means having a pair of actuating members spaced apart a distance greater than a railway car truck wheelbase, said members being arranged to be simultaneously actuated by the wheels of a locomotive and to be sequentially actuated by the wheels of a railway car, said control means being arranged to actuate said retracting means in response to simultaneous actuation of said members.

15. An automatic device for oiling railway vehicle journal boxes comprising a nozzle, a pump, conduit means connecting said nozzle to said pump, means for supporting said nozzle at one side of a railway track within the standard clearance diagram and including means for holding said nozzle immediately adjacent to the opening of the journal box of a railway vehicle moving along the track, and means for actuating said pump during the time that the journal box opening is directly in front of said nozzle thereby to discharge a fluid from said nozzle into the journal box, and means for automatically retracting said nozzle to a position outside of the standard clearance diagram to avoid fouling by projecting equipment carried by railway vehicles.

16. An automatic device for oiling railway vehicle journal boxes comprising a nozzle, means for supporting said nozzle at one side of a railway track within the standard clearance diagram and including means for posi-

tioning said nozzle in preselected proximity to the opening of the journal box of a railway vehicle moving along the track, said positioning means including means adapted to be engaged by and co-operable with each journal box for automatically adjusting said nozzle relative to the track in accordance with the extent to which the journal box projects from the track, and pump means for pumping a fluid lubricant through said nozzle and into the journal box.

17. An automatic device for oiling the journal boxes of railway vehicles of the type wherein different ones of the journal boxes project different respective distances outwardly from the track on which the vehicles are operated, said device comprising a nozzle, means for supporting said nozzle adjacent to a railway track and including positioning means adapted to be co-operable with and actuated by each of the journal boxes of a passing vehicle in accordance with the extent to which the journal box projects from the track for successively moving said nozzle laterally into a predetermined proximity to the opening of each one of the vehicle journal boxes as it progresses past said nozzle, and pump means for pumping a fluid through said nozzle into the journal boxes.

18. An automatic device for oiling railway vehicle journal boxes comprising a nozzle, means for supporting said nozzle at one side of a railway track within the standard clearance diagram and including means for positioning said nozzle in preselected proximity to the opening of the journal box of a railway vehicle moving along the track, said positioning means including means co-operable with and adapted to be actuated by each of the journal boxes of a passing vehicle in accordance with the extent to which the journal box projects from the track for automatically adjusting said nozzle relative to the track in accordance with the extent to which the journal box projects from the track, and pump means for pumping a fluid lubricant through said nozzle and into the journal box, retraction means for retracting said nozzle out of the standard clearance diagram to avoid fouling by equipment carried by railway vehicles and to avoid oiling selected ones of passing journal boxes, and control means for automatically actuating said retraction means.

19. An automatic device for oiling the journal boxes of railway vehicles of the type wherein different ones of the journal boxes project different respective distances outwardly from the track on which the vehicles are operated, said device comprising a nozzle, means for supporting said nozzle adjacent to a railway track, positioning means responsive to the journal boxes of a passing vehicle for successively moving said nozzle laterally into a predetermined proximity to the opening of each one of the vehicle journal boxes as it progresses past said nozzle, and pump means for pumping a fluid through said nozzle into the journal boxes, said pump means including a pump, a separate relatively short movable rail portion forming a segment of the track adjacent to said nozzle, and means for coupling said rail portion to said pump for actuating said pump in response to a load placed on said rail portion.

20. An automatic device for oiling railway vehicle journal boxes comprising a nozzle, means for supporting said nozzle at one side of a railway track within the standard clearance diagram, means for positioning said nozzle in preselected proximity to the opening of the journal box of a railway vehicle moving along the track, said positioning means including means for adjusting said nozzle relative to the track in accordance with the extent to which the journal box projects from the track, and pump means for pumping a fluid lubricant through said nozzle and into the journal box, said pump means including a lubricant storage tank, a pump, conduit means connecting said pump to said tank and to said nozzle, valve means in said conduit means for directing lubricant pumped by said pump alternatively to said tank and to said nozzle for discharge therefrom, means for actuating said pump in response to the passage of a railway vehicle wheel past said nozzle, and control means for actuating said valve means.

21. An automatic device for oiling railway vehicle journal boxes comprising a nozzle, means for supporting said nozzle at one side of a railway track within the standard clearance diagram, means for positioning said nozzle in preselected proximity to the opening of the journal box of a railway vehicle moving along the track, said positioning means including means for adjusting said nozzle relative to the track in accordance with the extent to which the journal box projects from the track, and pump means for pumping a fluid lubricant through said nozzle and into the journal box, retraction means for retracting said nozzle out of the standard clearance diagram to avoid fouling by equipment carried by railway vehicles and to avoid oiling selected ones of passing journal boxes, and control means for actuating said retraction means, said pump means including a lubricant storage tank, a pump, conduit means connecting said pump to said tank and to said nozzle, valve means in said conduit means for directing lubricant pumped by said pump alternatively to said tank and to said nozzle for discharge therefrom, means for actuating said pump in response to the passage of a railway vehicle wheel past said nozzle, and control means for actuating said valve means to direct pumped lubricant to said tank whenever said nozzle is in its retracted position and to direct pumped lubricant to said nozzle when a partly open journal box is positioned in the line of discharge of said nozzle.

22. A device for automatically oiling railway vehicle journal boxes as the vehicles move along a railway track comprising a blade, means for mounting said blade alongside a railway track in a position to be contacted by the journal boxes of vehicles passing therealong, said blade including an inclined portion for lifting the journal box covers as the journal boxes move by, a nozzle carried by said blade in a position to discharge a fluid lubricant beneath a cover that is momentarily held open by said blade and into the journal box, and fluid lubricant supply means connected to said nozzle for supplying lubricant thereto.

23. A device for automatically oiling railway vehicle journal boxes as the vehicles move along a railway track comprising a blade, means for mounting said blade alongside a railway track in a position to be contacted by the journal boxes of vehicles passing therealong, said blade including an inclined portion for lifting the journal box covers as the journal boxes move by, a nozzle carried by said blade in a position to discharge a fluid lubricant beneath a cover that is momentarily held open by said blade and into the journal box, fluid lubricant supply means connected to said nozzle for supplying lubricant thereto, and control means for controlling said supply means so that lubricant is delivered to said nozzle only during a predetermined period after said blade is contacted by a journal box cover.

24. A device for automatically oiling railway vehicle journal boxes as the vehicles move along a railway track comprising a blade, means for mounting said blade alongside a railway track in a position to be contacted by the journal boxes of vehicles passing therealong, said blade including an inclined portion for lifting the journal box covers as the journal boxes move by, a nozzle carried by said blade in a position to discharge a fluid lubricant beneath a cover that is momentarily held open by said blade and into the journal box, fluid lubricant supply means for delivering a lubricant to said nozzle including a reservoir, a pump, conduit means connecting said pump to said reservoir and to said nozzle, and valve means associated with said conduit means for alternatively directing lubricant pumped by said pump to said reservoir and to said nozzle, said valve means being

arranged normally to direct pumped lubricant to said reservoir, and control means for actuating said valve means to direct pumped lubricant to said nozzle during a predetermined period after said blade is contacted by a journal box cover.

25. A device for automatically oiling railway vehicle journal boxes as the vehicles move along a railway track comprising a blade, means for mounting said blade alongside a railway track in a position to be contacted by the journal boxes of vehicles passing therealong, said blade including an inclined portion for lifting the journal box covers as the journal boxes move by, a nozzle carried by said blade in a position to discharge a fluid lubricant beneath a cover that is momentarily held open by said blade and into the journal box, fluid lubricant supply means for delivering a lubricant to said nozzle including a reservoir, a pump, conduit means connecting said pump to said reservoir and to said nozzle, and valve means associated with said conduit means for alternatively directing lubricant pumped by said pump to said reservoir and to said nozzle, means for actuating said pump to pump a predetermined quantity of lubricant in response to the passage of a railway vehicle running wheel along the track past said nozzle, said valve means being arranged normally to direct pumped lubricant to said reservoir, and control means for actuating said valve means to direct pumped lubricant to said nozzle during a predetermined period after said blade is contacted by a journal box cover, whereby discharge of lubricant from said nozzle occurs only when an opened journal box is positioned immediately in front of said nozzle to receive the lubricant and when said pump is actuated at other times the pumped lubricant is directed to the reservoir.

26. Apparatus for oiling railway vehicle journal boxes as the vehicles move along a track comprising a blade having an inclined surface for engagement beneath the bottom edges of the journal box covers and for thereby raising the covers to an open position as the vehicles move past the blade, means for mounting said blade alongside a railway track in a position to be contacted by the journal boxes of vehicles passing therealong, means for retracting said blade out of the standard clearance diagram to avoid fouling by projecting equipment carried by the vehicles, a nozzle carried by said blade in a position to discharge a fluid lubricant beneath a cover that is momentarily held open by said blade and into the journal box, fluid lubricant supply means connected to said nozzle for supplying lubricant thereto, and control means for controlling said supply means so that lubricant is delivered to said nozzle only during a predetermined period after said blade is contacted by a journal box cover.

27. A device for automatically oiling railway vehicle journal boxes as the vehicles move along a railway track comprising a blade, means for mounting said blade alongside a railway track in a position to be contacted by the journal boxes of vehicles passing therealong, said blade including an inclined portion for lifting the journal box covers as the journal boxes move by, a nozzle carried by said blade in a position to discharge a fluid lubrcant beneath a cover that is momentarily held open by said blade and into the journal box, fluid lubricant supply means connected to said nozzle for supplying lubricant thereto, and control means for controlling said supply means so that lubricant is delivered to said nozzle only during a predetermined period after said blade is contacted by a journal box cover, said control means including a plate mounted on said inclined portion of said blade for contact by the journal box covers as the covers are opened, and means for actuating said supply means for a predetermined period after said plate is contacted by a journal box cover during opening thereof.

28. A device for automatically oiling railway vehicle journal boxes as the vehicles move along a railway track comprising a blade, means for mounting said blade alongside a railway track in a position to be contacted by the journal boxes of vehicles passing therealong, said blade including an inclined portion for lifting the journal box covers as the journal boxes move by, a nozzle carried by said blade in a position to discharge a fluid lubricant beneath a cover that is momentarily held open by said blade and into the journal box, fluid lubricant supply means for delivering a lubricant to said nozzle including a reservoir, a pump, conduit means connecting said pump to said reservoir and to said nozzle, and valve means associated with said conduit means for alternatively directing lubricant pumped by said pump to said reservoir and to said nozzle, said valve means being arranged normally to direct pumped lubricant to said reservoir, and control means for actuating said valve means to direct pumped lubricant to said nozzle during a predetermined period after said blade is contacted by a journal box cover, said control means including a sensing device actuatable by engagement of said inclined portion of said blade with a journal box cover, and means for actuating said valve means in response to actuation of said sensing device.

29. A construction for mounting a device in a fixed location adjacent to a railway track for performing a desired operation upon railway vehicles as the vehicles move along the track, said construction comprising means including a normally energized electrical circuit for normally holding said device in a predetermined position within the standard clearance diagram for contacting the vehicles, and means for retracting said device to a position outside the standard clearance diagram, said retracting means being gravity actuated in response to de-energization of said electrical circuit of said normal holding means and including control means spaced along said track from said device and actuable to de-energize said electrical circuit.

30. In apparatus for oiling railway car journal boxes as the car moves along a track, said journal boxes being normally closed by lids hinged to the upper portions thereof on horizontal axes generally parallel to said track for outward and upward swinging movements, said lids each having a depending lower edge portion the inner surface of which is engageable to exert opening pressure on the lid, said oiling apparatus comprising, means mounted adjacent the track for automatically opening the journal box lid of each successive journal box as the car moves therepast, said means comprising a lid opening element disposed and arranged to progressively engage said inner surface and open said lid, and means for injecting oil into each journal box when each said lid is open, said last mentioned means including a control element disposed in the general path of travel of the journal box lid in its open position to be actuated thereby.

31. In apparatus for oiling railway car journal boxes as the car moves along a track, said journal boxes being normally closed by lids hinged to the upper portions thereof on horizontal axes generally parallel to said track for outward and upward swinging movements, said lids each having a depnding lower edge portion the inner surface of which is engageable to exert opening pressure on the lid, said apparatus comprising, means mounted adjacent the track for automatically opening the journal box lid of each successive journal box as the car moves therepast, said means comprising a lid opening element having a smooth lid engaging operating surface elongated in a direction generally parallel to the track and disposed and arranged to progressively engage said inner surface and open said lid, and means for injecting oil into each journal box when each said lid is open, said last mentioned means including a control element disposed in the general path of travel of the journal box lid in its open position to be actuated thereby.

32. In apparatus for oiling railway car journal boxes as the car moves along a track, said journal boxes being

normally closed by lids hinged to the upper portions thereof on horizontal axes generally parallel to said track for outward and upward swinging movements, said lids each having a depending lower edge portion the inner surface of which is engageable to exert opening pressure on the lid, said oiling apparatus comprising, means mounted adjacent the track for automatically opening the journal box lid of each successive journal box as the car moves therepast, said means comprising a lid opening element movable in a direction to open said lid, means operative responsive to movement of the railway car to impart lid opening movements to said lid opening element, and means for injecting oil into each journal box when each said lid is open, said last mentioned means including a control element disposed in the general path of travel of the journal box lid in its open position to be actuated thereby.

33. Apparatus for lubricating journal boxes of railway car axles including guide members adapted to engage the lid of a journal box of a moving railway car, means mounting said members for movements in directions to open and close said lid, said mounting means being yieldably biased toward the journal box, means including an actuator disposed in the path of travel of a portion of a car associated with the journal box to be oiled for imparting said movements to said members responsive to the movement of said car, and oil injection mechanism operative responsive to engagement by said lid when said lid is in its open position.

34. In apparatus for oiling railway car journal boxes as the car moves along a track, said journal boxes being normally closed by lids hinged to the upper portions thereof on horizontal axes generally parallel to said track for outward and upward swinging movements, said lids each having a depending lower edge portion, the inner surface of which is engageable to exert opening pressure on the lid, said oiling apparatus comprising, means mounted adjacent the track for automatically opening the journal box lid of each successive journal box as the car moves therepast, said means comprising a lid opening element disposed and arranged to progressively engage said inner surface and open said lid, and means for injecting oil into each journal box when each said lid is open, said last named means including a control element disposed in the general path of travel of a portion of said railway car to be actuated thereby when each said journal box is disposed to receive oil from said means for injecting oil.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,155,191 November 3, 1964

Glenn W. Nelson

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 2, lines 35 and 36, for "jourlay" read -- journal --; column 3, line 43, for "he" read -- the --; column 4, line 35, for "it" read -- its --; column 7, line 14, after "10" insert a closing parenthesis; line 25, for "box", second occurrence, read -- bar --; line 38, for "portion" read -- portions --; column 11, line 68, for "between" read -- thereon --; column 16, line 60, for "depnding" read -- depending --.

Signed and sealed this 16th day of March 1965.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

EDWARD J. BRENNER
Commissioner of Patents