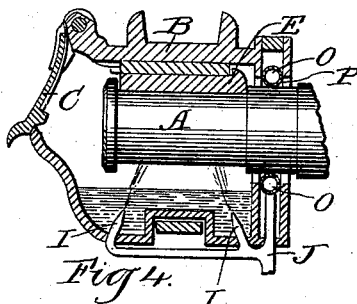
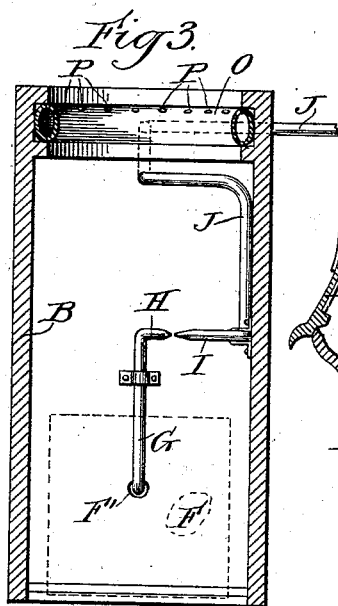
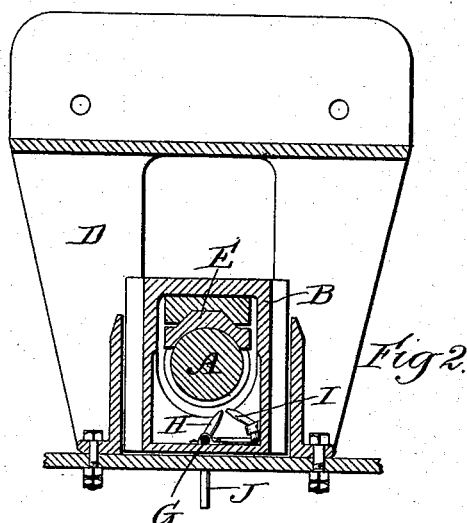
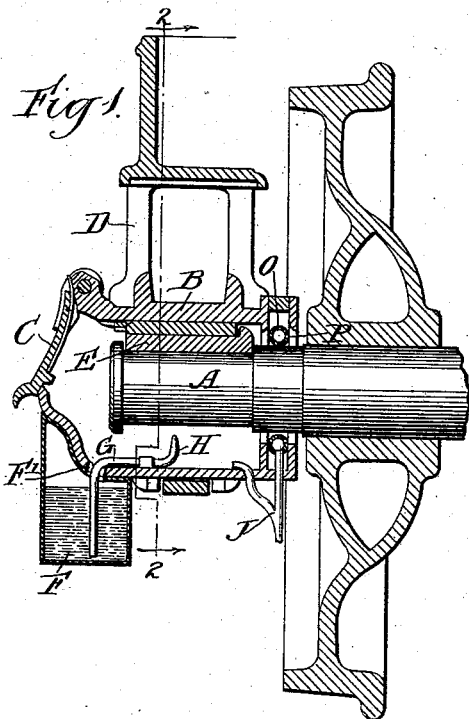


(No Model.)

J. E. GILL.
CAR AXLE LUBRICATOR.

No. 524,318.

Patented Aug. 14, 1894.



Witnesses
Wm. J. Fleming
Jas. M. Rheum.

Inventor
John E. Gill
by Raymond C. O'Connell
Attys.

UNITED STATES PATENT OFFICE.

JOHN E. GILL, OF FRANKLIN, PENNSYLVANIA.

CAR-AXLE LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 524,318, dated August 14, 1894.

Application filed April 8, 1893. Serial No. 469,505. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. GILL, a citizen of the United States, residing in Franklin, in the county of Venango and State of Pennsylvania, have invented certain new and useful Improvements in Car-Axle Lubricators, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to appliances for lubricating the axle-journals of railway-cars, and my invention while equally applicable both to passenger and freight cars, is more particularly intended for use upon freight-cars, the axle-journals of which do not usually receive the frequent attention which is given to the axle-journals of passenger-cars.

Among the primary objects of my invention is included that of insuring a direct and uniform as well as economical application of lubricant directly to the axle-journals by means of compressed air; the devices for effecting this result being principally connected directly to the journal-boxes. Furthermore, to utilize compressed air as the means for spraying liquid lubricant (when such form of lubricant is used), directly against the journals of the axles, by means of compressed air; the devices for effecting this purpose being also principally connected directly to the journal-boxes.

To the above purposes, and to such others also as may appear from the ensuing description, my invention consists in certain peculiar and novel features of construction and arrangement, as hereinafter described and claimed.

The more precise nature of my invention will be better understood when described with reference to the accompanying drawings, in which—

Figure 1 represents a central, vertical section through a standard passenger car axle and box showing my invention applied thereto; Fig. 2, a transverse vertical section on the line 2—2 of Fig. 1 looking in the direction indicated by the arrows; Fig. 3, a central, horizontal section through the car axle box. Fig. 4 is a vertical longitudinal section of a car-axle journal-box having a modified form of attachment applied thereto.

Similar letters of reference indicate the

same parts in the several figures of the drawings.

Referring by letter to the accompanying drawings, A designates the car axle journal and B, the box therefor, provided with the usual hinged lid C and opening in the inner end thereof through which the journal has free passage to the interior of the box, and the latter being guided between the pedestals D in the usual manner. There are also the usual brasses or metallic bearings E interposed between the journal and the top of the car axle box, my invention being essentially applicable to apply to standard and all other car axle boxes without any material change in the form thereof.

In the form and construction shown in Figs. 1, 2 and 3, I provide a reservoir or tank F attached at any suitable point to the car axle box and which is to be nearly filled with a liquid lubricant of any desired character. Into this box dips a siphoning tube G reaching nearly to the bottom thereof, the nozzle H of which tube terminates below the car axle journal A in proximity to the nozzle I of the air tube, preferably gaining its supply of air pressure from the same source as the air brake mechanism, common upon railway cars, and desirably from the auxiliary reservoir of air brake systems. If preferred, however, a separate tank on each car may be provided and supplied with air directly from the main reservoir upon the locomotive, or from the auxiliary reservoir of the air brake system, the latter being preferred because of the greater simplicity, convenience and economy thereof. It will also perhaps be preferable to have the air pressure less than that contained in the train service pipes, in which event a pressure regulating valve of common construction may be employed, either between the brake-cylinder and the feed pipes J leading to the nozzles I, or between said cylinder and separate tanks upon each car from which the feed pipes gain their supply.

The blast or jet of air from the air nozzle I is directed across the oil-nozzle H and directly against the journal in much the same manner as an ordinary atomizer would operate, the air-jet thus serving to convert the pipe G into a siphon and drawing the lubricant up out of the reservoir F and spraying

or atomizing it directly against the car axle journal.

In the drawings it has not been deemed necessary to illustrate the auxiliary reservoir of an air-brake system, nor a separate tank, nor a regulating-valve for my devices, in view of the fact that such devices are well understood in the art to which my invention appertains. Nor is it deemed necessary to show or describe in detail the many different and obvious methods which might be employed for utilizing this air pressure in connection with a siphoning tube, but I nevertheless do not desire to limit myself to the precise construction or arrangement herein shown, which is principally for the purpose of illustration.

The surplus lubricant that may fall from the journal A, may, if desired, be drained back into the reservoir F through a suitable opening provided for that purpose, such, for example, as the enlarged opening F' around the siphon pipe G.

In Fig. 4 I have shown another form in which the siphoning tube is dispensed with and the nozzle or nozzles I of the air pipe are arranged to terminate near the bottom of the car axle box, which is partially filled with the lubricant covering the ends of the nozzles, so that the blast of air directed from the nozzles passes through the lubricant and throws the same up against the car axle journal, the surplus lubricant falling back into the box for subsequent use. In this construction it would perhaps be desirable to slightly change the construction of the car axle box, so that it may subserve the purpose of a reservoir, to which end, pockets may be formed in the bottom thereof, in which the air nozzles will terminate. With this construction as long as sufficient oil remains in the box to cover the nozzles, it will be constantly blown thereby up against the journal, so as to effectually lubricate the latter, and yet, without any liability of the oil being blown out of the box.

It will also be found advantageous to substitute for the ordinary dust ring a circular tube O, filling the opening in the rear wall of the box B through which the journal projects, said tube being perforated on the outer side thereof, as at P and supplied with a blast of air from a branch of the pipe J or in any other convenient manner. This perforated pipe will serve as a dust guard and by directing a comparatively weak blast through the opening in the rear of the box will effectually prevent the entrance of dust therein.

By my invention the employment of waste or other filling for the car axle box may be dispensed with and great economy effected in the use of the lubricant, which will be applied where needed and when needed in the best possible manner for use and being combined with a blast of comparatively cool air, will serve to maintain the journal cool at all times and thus prevent hot boxes, a very common source of annoyance, delay and expense to railway companies. It would be no departure from the spirit of my invention, however, to partially fill the box with waste or some other absorbent material to catch and retain the surplus oil that may fall from the journal, and it may also act as a strainer for such oil after being used and before its return to the reservoir.

It will also be within the spirit of my invention in case my axle lubricator is applied to cars not equipped with air-brake mechanism, or even where air-brake mechanism is employed, to equip each car with a special reservoir or tank for containing air under pressure and into which air may be pumped by a hand air pump or other device, so as to provide the necessary pressure.

Having described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. In a car-axle lubricator, the combination, with a car-axle journal and a box therefor, of a reservoir for liquid lubricant carried by the journal-box, an oil-siphoning tube leading from said reservoir into the journal-box and structurally connected to the journal-box at a point in proximity to the journal, and a conduit for air under pressure delivering into the journal-box and across the outer end of the oil-tube, for spraying the lubricant against the journal, substantially as set forth.

2. In a car-axle lubricator, the combination, with a car-axle journal, a box therefor, and a hollow perforated dust-ring located in the journal-opening of the box, of means structurally connected directly to the journal-box, for spraying lubricant against the journal by air-pressure, and means for delivering the compressed air to the ring; said ring discharging such air outward from the box through its perforations, substantially as set forth.

JOHN E. GILL.

Witnesses:

W. D. DOYLE,
JAS. DENTON HANCOCK.