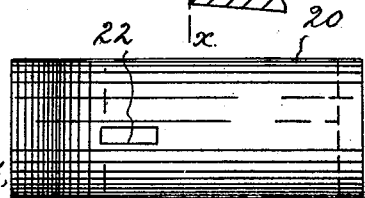
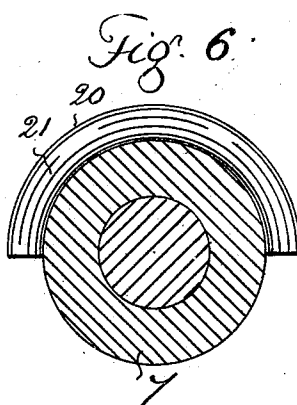
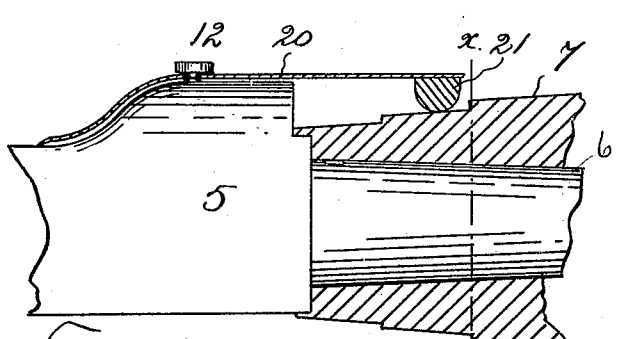
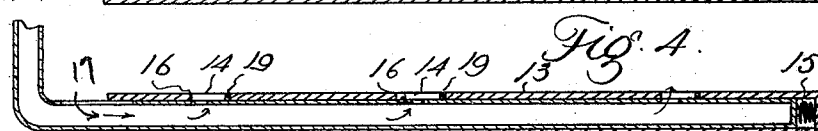
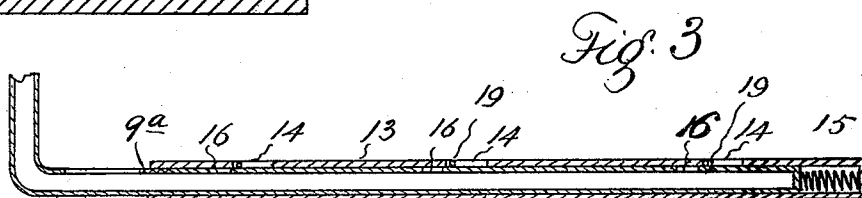
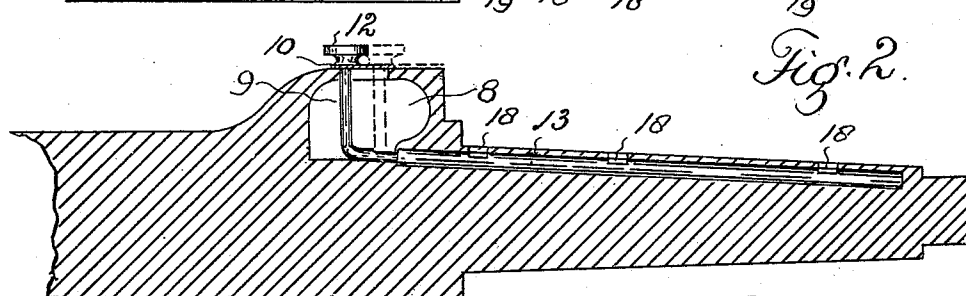
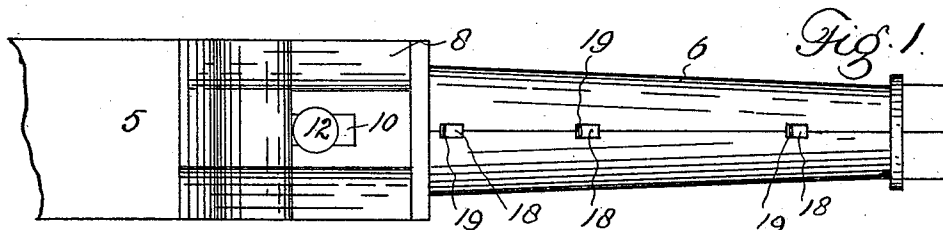


(No Model.)

G. W. BEAL.
AXLE LUBRICATOR.

No. 475,051.

Patented May 17, 1892.



WITNESSES:

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Fig. 7.

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GEORGE W. BEAL, OF HIGHLANDS, COLORADO.

AXLE-LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 475,051, dated May 17, 1892.

Application filed January 6, 1892. Serial No. 417,221. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. BEAL, a citizen of the United States of America, residing at Highlands, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Axle-Lubricators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in axle-lubricators; and the object of the invention is to provide a device of the class stated which shall be of simple and economical construction, easily operated, reliable, durable, and efficient in use.

The invention will be fully understood by reference to the accompanying drawings in connection with the description hereinafter given.

In the drawings is illustrated an embodiment of the invention.

Figure 1 is a top or plan view of the extremity of the axle provided with my improved lubricator. Fig. 2 is a longitudinal section of the same. Fig. 3 is a longitudinal section of a tube and sleeve located within the axle and communicating with the oil-cup, reservoir, or supply source. Fig. 4 is a similar view showing the tube so adjusted as to allow the oil to escape therefrom through the opening in the sleeve to the journal or spindle. Fig. 5 is a fragmentary section of one extremity of the axle, showing the hub in place and the shield in position. Fig. 6 is a vertical transverse section taken on line *x x*, Fig. 4. Fig. 7 is a top or plan view in detail of the shield secured to the axle and overlapping the hub to prevent sand or dirt passing to the journal.

Similar reference-characters representing corresponding parts or elements in the several views, let the numeral 5 designate the axle, 6 the spindle, and 7 the hub of the wheel.

Formed or located in the axle just beyond the spindle is an oil cup or receptacle 8, provided with a suitable opening at the top,

through which protrudes a small tube 9, to the upper extremity of which is secured a small plate 10, of sufficient size to normally cover the opening in the top of the reservoir. To the upper extremity of the tube above plate 10 is secured a button or slightly-enlarged top piece 12. The inner extremity of tube 9 occupies a vertical position within the oil-cup and may be moved outwardly therein by virtue of the elongated opening in the top of the reservoir or cup. At the bottom of the oil-cup tube 9 is formed into an elbow. From this point one arm 9^a of the elbow extends through a suitable groove formed therefor nearly to the outer extremity of the spindle, the groove in which the tube lies being located just beneath the outer surface of the bearing. Within this groove is located a sleeve 13, provided with openings 14. The inner extremity of the sleeve is open, while its outer extremity is closed and provided with a coil-spring 15, which engages the outer extremity of arm 9^a of the tube, which is chiefly located within this sleeve and provided with openings 16, which are normally closed by the sleeve, since the tube is forced inward by the spring 15, so that its openings do not coincide with the openings 14 in the sleeve.

Just outside of the bend in tube 9, within part 9^a thereof and lying within the oil-cup, is formed an elongated opening 17, through which the oil or other lubricant passes to the tube. When it is desired to oil the axle bearing or spindle, it is only necessary to press outward on button or projection 12 and force the oil-tube to the position shown by dotted lines in Fig. 2. This outward or adjusted position of the tube is also shown in Fig. 4. The opening in the top of the oil-cup is just long enough to permit the tube to move outward to the adjusted position shown, or so that the openings 16 shall lie just beneath openings 14, allowing the oil to pass upward there-through and thence to the journal through openings 18, formed in the spindle just above openings 14 of the sleeve and communicating therewith.

Rigidly secured to arm 9^a of the tube are short projections 19, which extend upward through openings 14 and 18. These projections are adapted to clear these openings and

remove therefrom any accumulations of deposits which might prevent the free access or ready flow of the lubricant to the axle-bearing. When the oil tube or conduit is in its normal position, projections 19 lie in the outer extremities of the openings through which they pass. Hence when the tube is moved to bring openings 16 into position below the openings in the sleeve and spindle, projection 19 is moved the full length of the opening through which it passes, thus leaving the way clear for the lubricant to pass from the tube therethrough as soon as openings 16 are moved into line. It will thus be seen that projections 19 are located outward on the tube from the openings 16, sufficient space being left between the projections and these openings to effectually seal the tube or prevent the passage of the lubricant therefrom when the tube is in its normal position, or that shown in Fig. 3.

In Figs. 5, 6, and 7 is illustrated a shield or protector 20, secured to the axle and projecting over the hub to prevent the sand and dirt from passing to the journal between the inner extremity of the hub and the shoulder formed on the axle adjacent to the spindle. The outer extremity of this shield is made to conform to the shape of the hub, and is provided interiorly with a rib or head 21, composed of rubber or other resilient material adapted to engage the hub and prevent dirt from passing thereunder to the shoulder on the axle and thence to the journal. This shield or protector is only required on heavy or draft wagons. Hence my improved lubricator may be used with or without the protector, as may be desired or preferable. When the shield is employed, the tube 9 projects through a suitable slot formed therein, which is of sufficient length to permit said tube the required movement. In this case the button 12 lies outside of the shield, so that the vehicle may be oiled without removing the same.

From the foregoing description it will be observed that my improved lubricator is not designed to be automatic, since the oil only passes to the journal when the oil-tube is adjusted. It will also be seen that by the use of my improvement the trouble and annoyance of removing the wheels of the vehicle when it is desired to oil the same is entirely done away with, it being only necessary to force button 12 outward, when the lubricant will rise through the openings 16, 14, and 18 to the bearing, since the oil-receptacle is located above the journal. As soon as the oil-tube is released the spring in the end of the sleeve returns it to its normal position and immediately cuts off the flow of oil from the cup or reservoir.

Having thus described my invention, what I claim is—

1. In a lubricator, the combination, with the axle and the spindle, of an oil-cup formed or located within the axle in proximity to the spindle, an apertured oil tube or conduit lead-

ing from said cup to the spindle, which is provided with a longitudinal opening for its reception, the spindle being further provided with openings leading from said longitudinal opening to the surface of the journal, a spring normally retaining the oil-tube in such a position that its apertures shall lie to one side of the openings in the spindle leading to the journal-bearing, and means connected with the tube, whereby the same may be adjusted from the outside of the axle to allow the lubricant to flow to the journal, substantially as described.

2. In a lubricator, the combination, with an axle and the spindle formed thereon, of an oil cup or receptacle formed or located in the axle in proximity to the spindle, a movable oil tube or conduit leading from said cup to the spindle, a sleeve located in the spindle for the reception of the tube, which is provided with openings 16 at intervals, the sleeve and spindle being provided with openings 14 and 18, communicating with the journal, opening 16 in the tube lying normally to one side of openings 14 and 18, a spring located in the sleeve and adapted to retain the tube in the normal position, and means connected with the oil-tube and projecting through an opening in the oil-cup, whereby the tube may be so adjusted as to allow the oil to flow to the journal, substantially as described.

3. In a lubricator, the combination, with an axle and the spindle, of an oil-receptacle formed or located in the axle in proximity to the spindle and provided with an opening in the top, an apertured spring-actuated oil tube or conduit leading from said receptacle to the spindle, an apertured sleeve located in the spindle for the reception of the tube, the spindle being provided with openings communicating with those in the sleeve and leading to the face of the journal, and a projection connected with the tube and passing through the opening in the top of the oil-cup and provided with a plate normally covering said opening, substantially as described.

4. In a lubricator, the combination, with an axle and a spindle formed thereon, of an oil-receptacle located in proximity to the spindle, an apertured spring-actuated oil-tube leading therefrom into the journal, which is provided with a suitable longitudinal opening therefor, the spindle being provided with openings leading from the longitudinal opening to the journal-bearing, projections secured to the oil-tube and protruding through the openings leading to the face of the bearing, and means for adjusting the oil-tube, whereby said last-named openings are cleared and the oil permitted to flow therethrough to the bearing, substantially as described.

5. In a lubricator, the combination, with the axle and spindle, of an oil-receptacle located in proximity to the spindle, an apertured adjustable spring-actuated oil-tube leading therefrom into the spindle, which is provided with a suitable longitudinal opening for its

reception, and outlets therefrom to the face of the bearing, substantially as described.

6. In a lubricator, the combination, with the axle and spindle, of an oil-receptacle located
5 in proximity to the spindle, an apertured adjustable spring-actuated tube leading therefrom into an opening formed in the spindle, which is provided with outlets from the longitudinal opening, and projections secured

to the oil-tube and protruding through the openings leading to the face of the spindle-bearing, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE W. BEAL.

Witnesses:

WM. MCCONNELL,

G. J. ROLLANDET.