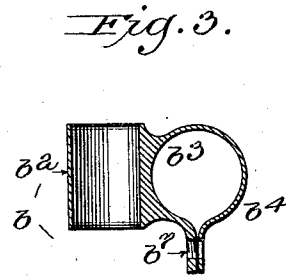
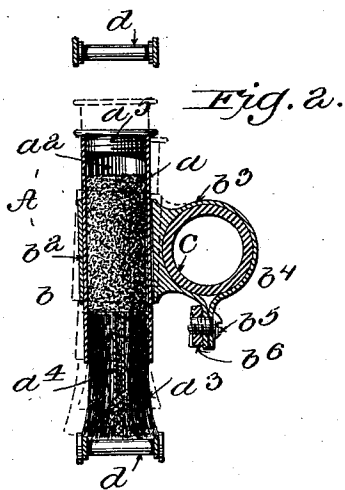
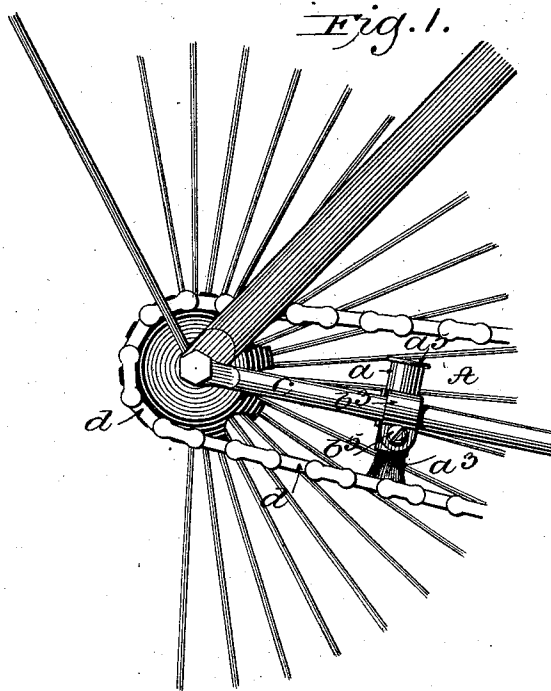


(No Model.)

C. O. FURBUSH, Jr.
LUBRICATOR FOR BICYCLES.

No. 531,176.

Patented Dec. 18, 1894.



Witnesses:
Arthur Ashley
Walter S. Dodge

Inventor:
Charles O. Furbush, Jr.

UNITED STATES PATENT OFFICE.

CHARLES O. FURBUSH, JR., OF MINNEAPOLIS, MINNESOTA.

LUBRICATOR FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 531,176, dated December 18, 1894.

Application filed November 23, 1893. Serial No. 491,812. (No model.)

To all whom it may concern:

Be it known that I, CHARLES O. FURBUSH, Jr., a citizen of the United States, and a resident of the city of Minneapolis, in the county of Hennepin, in the State of Minnesota, have invented a new and useful Automatic Chain Cleaner and Lubricator for Bicycles, of which the following is a correct description.

The invention has special relation to that class of velocipedes which are known as bicycles, and in which the power, applied through the foot-levers, is communicated from the power or sprocket wheel to the propelling-wheel, through the medium of the inter-connecting sprocket-chain; and the object of the invention is the provision of a means whereby the chain and its bearings shall be continuously maintained in a suitably lubricated condition, and accumulations of dust, rust, and other injurious substances thereon shall be effectually prevented.

The invention consists essentially in a cylindrical lubricant-receptacle which is mounted vertically upon the machine in such manner, as to rest directly upon the sprocket-chain, so that when the machine is in motion contact of the receptacle with the chain shall cause incessant reciprocation of the receptacle, and consequent agitation and continuous discharge of the contents thereof.

The invention consists also in the novel lubricator, and in the novel combinations of elements which will now be described in detail, and then distinctly claimed in the paragraphs which follow such detailed description.

In the accompanying drawings, which constitute a part of this specification:—Figure 1 represents in side elevation, a detail, showing a portion of the rear ground-wheel or propeller; the sprocket-chain; the horizontal connecting-bar; and the lubricator, mounted detachably and adjustably upon such bar. Fig. 2 represents, in elevation, a vertical, central, transverse section of the lubricator or lubricant-receptacle, and details of related parts. Fig. 3 represents, in section, the lubricator-holder detached.

The lubricator A or lubricant-receptacle proper, consists of a plain metallic inclosing-cylinder a , which includes the chamber a^2 ,

which at its lower extremity is closed by the brush a^3 , within which is rigidly held the vertically and longitudinally extending tube or lubricant-conductor a^4 ; while the receiving-opening, at the upper extremity of the chamber, is closed by a suitable plug, as a^5 , or, if preferred, by an interior or exterior screw-cap. It will be understood that the brush and the discharging-conduit are closely compressed in their position within the lower portion of the cylinder.

The lubricator thus constructed, is of suitable dimensions to permit it to be loosely received within the cylindrical bearing or upright sleeve b^2 , of a metallic holder b , which in its horizontal portion is formed with a ring or open sleeve b^3 , the outer portion b^4 of which has sufficient flexibility to permit the sleeve to be applied and then closely compressed upon the connecting-bar c of the machine, by means of a pinch-screw b^5 , which, as seen in Fig. 2 of the drawings, operates in connection with perforations in the open or two-part sleeve, and with the independent nut b^6 ;—although as will be obvious, the inner perforated portion b^7 of the sleeve, may if desired be made of greater thickness, and may itself be tapped, to receive the screw;—thereby obviating necessity for employment of a detachable nut.

It will be understood that in practical operation, the chamber a^2 will be supplied with a quantity of graphite or plumbago, in particles adapted to be discharged through the conduit a^4 . This being done, propulsion of the machine in the ordinary manner, and the resultant movement of the chain against the lower extremity of the brush, will produce rapid reciprocation of the lubricator, up and down, within its sleeve, and sufficiently rapid discharge of the minute fragments of graphite through the tube or conduit a^4 . Simultaneously with the movement described, the lubricator is caused to rotate with considerable rapidity, thereby clearing the chain d of all substances which may have fallen thereon; producing a finely polished surface; and, incidentally, preventing the lower extremity of the brush from becoming worn unevenly.

It will be perceived that not only is the lubricator attachable at any suitable point

upon the bar, but that it may be applied and maintained at any desired inclination, right or left, from the perpendicular.

It will be apparent that the degree of variation of the described horizontal bar, from an exactly horizontal plane, and the consequent degree of variation of the lubricator from a vertical plane, will vary somewhat in different makes or patterns of bicycles; and that the terms as employed are relative only.

It will be obvious that the sleeve for the reception of the lubricator, might be attached to, or constitute a projection from another portion of the frame, instead of from the horizontal bar, without departing from the described invention.

It is within my knowledge that a piston-rod lubricator which comprises a waste-containing box which has a perforated bottom, and which rests continually upon the piston-rod, and is supported in its vertical position within a fixed holding-sleeve, has before been made.

In another lubricator, a horizontally-placed, perforated lubricant-receptacle, has been provided with pintles, and revolvably mounted in fixed bearings, at a point above the lower member of a bicycle chain, in close proximity to or in contact with such chain.

In a lather-brush or shaving-brush, the handle thereof has, in one instance, been made hollow, to receive cakes of shaving-soap; and, in another instance to receive a saponaceous compound which, by a piston, is forced through a passage, into the brush; also, in a marking-brush, a tubular-handle, to contain the marking-fluid, has been employed in connection with a conical fluid-conveying, brush-bearing cap.

I am also aware that in a device for lubricating the outer surface of a bicycle-chain, a lubricant-receptacle which is provided with a central agitating-wire, and with a terminal flexible discharging-tube, has been mounted above the upper member of a bicycle-chain, the body or receptacle proper being rigidly clamped to the frame of the machine, while the lower extremity of the discharging-tube extends from without, inwardly, into the link-openings of the bicycle-chain.

I desire that it shall be understood that I do not claim any of these constructions. I believe, however, that I am the first to provide in connection with the sprocket-chain of a bicycle, a lubricant-receptacle which rests wholly upon such chain; the first to provide in connection with the sprocket-chain of a bicycle, a lubricant-receptacle which rests wholly upon the chain, and which receives its sole discharge-actuation therefrom; the first to mount upon a bicycle chain, a lubricant-receptacle the contents of which are agitated and discharged solely through the rapid reciprocation of such receptacle, bodily, in a vertical plane; and the first to mount upon a bicycle chain, a vertically-arranged cylindri-

cal receptacle which in its upper portion receives a lubricant and in its lower portion a projecting brush, and a central open discharging-tube.

The invention having been thus described, what is claimed is—

1. In a bicycle, the combination with the sprocket-chain thereof, of an upright or vertically-placed, loosely-mounted lubricant-receptacle which rests wholly upon such chain; and which, in the use of the vehicle, receives its discharge-actuation solely from the chain.

2. In a bicycle, or like chain-actuated machine, the combination with a fixed attachment of the machine; of a lubricator and cleaner which has free up-and-down movement within the fixed attachment, and which is composed essentially of an upper vertically-extending, cylindrical, lubricant receiving and discharging chamber, and a lower cleaning and polishing extremity, by which the lubricator and cleaner is wholly supported upon the chain, to receive discharging actuation therefrom.

3. The connecting-bar *c*; the guide or holder *b*, adjustably secured by its horizontal portion *b*⁴ to the connecting-bar; and the lubricator *A*, loosely received by its upper portion within the vertical portion *b*³ of the guide or holder; in combination with the chain *d*;— substantially as and for the purposes specified.

4. A lubricator and cleaner for bicycle-chains, which embraces an adjustable holder which consists of a horizontal sleeve and an upright sleeve or guide; and a reciprocating lubricant receiver and discharger which rests directly and wholly upon the bicycle chain, and is loosely received within the upright sleeve or guide, and which consists of a vertical chamber, a closing-cap, and a discharging-tube, and a clearing-brush which are fitted in the lower extremity of the chamber.

5. In combination with a holder, a cylindrical lubricant-receptacle, mounted vertically within the holder, and movable up and down and axially therein, so that the receptacle may rise and fall and also turn axially.

6. A bicycle which is provided with a guide or holder which is attached to a fixed part of the vehicle; and which is provided also with a lubricant-receptacle and chain-cleaner which is loosely maintained in an upright position within the guide or holder, and which by its lower extremity is seated upon the lower portion and inner surface of the sprocket-chain; so that in the use of the bicycle the chain operates to repeatedly impel the receptacle upwardly, and also to cause it to rotate.

CHARLES O. FURBUSH, JR.

Witnesses:

HORACE A. DODGE,
J. A. ASHLEY.