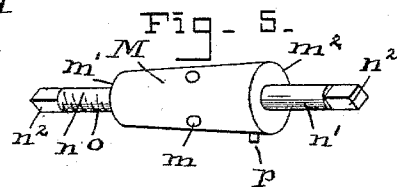
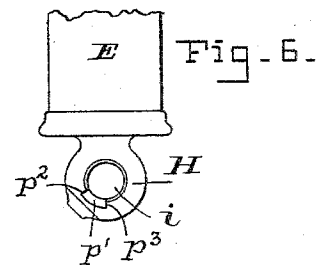
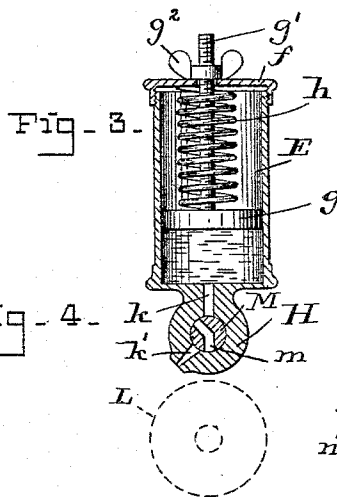
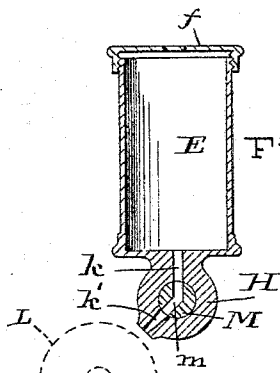
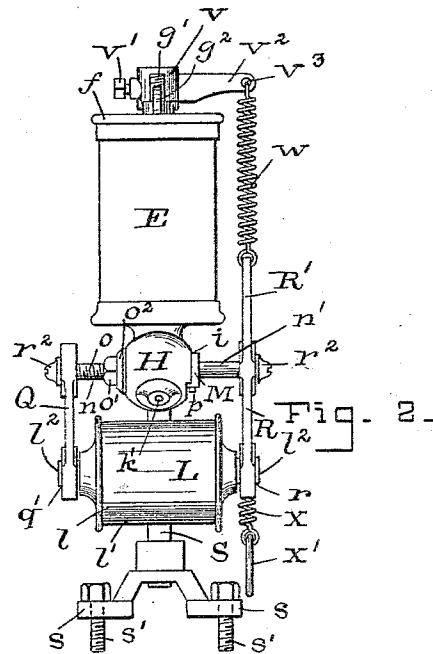
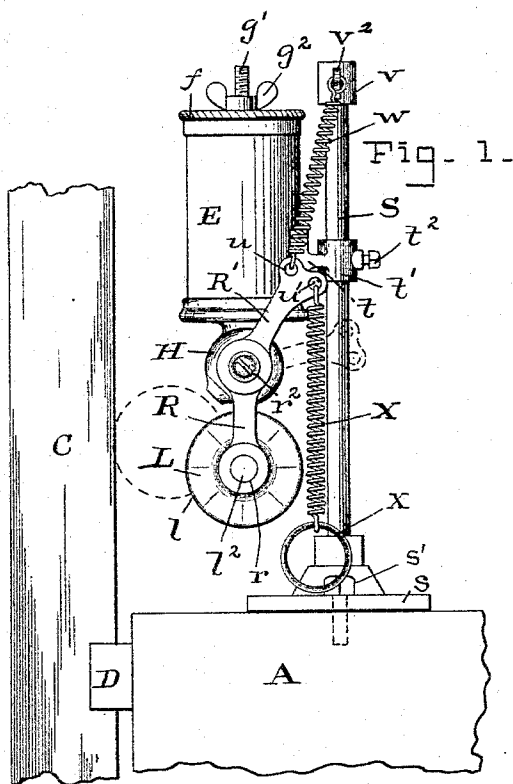


(No Model.)

W. J. FERGUSON. LUBRICATOR.

No. 531,993.

Patented Jan. 1, 1895.



WITNESSES:—

L. I. Van Horn
Charles B. Mann

INVENTOR:
Wm J. Ferguson
By Chas B. Mann

ATTORNEY.

UNITED STATES PATENT OFFICE.

WILLIAM J. FERGUSON, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF
TO WILLIAM G. H. STUMP, OF SAME PLACE.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 531,993, dated January 1, 1895.

Application filed October 10, 1894. Serial No. 525,452. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. FERGUSON, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Automatic Oilers for Elevator-Guides, of which the following is a specification.

This invention relates to certain new and useful improvements in automatic oilers for elevator guides.

One of the objects of the invention is to provide a device of simple construction whereby the lubricating roller may be readily thrown into and out of contact with the vertical guides whenever it is desired to oil or grease them.

Another object is to provide an improved automatic cut-off coacting with the roller to cut off or let on the supply of oil or grease.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a view of a part of the elevator car and one of the vertical guides, showing the improved oiler device in side elevation. Fig. 2 is a front view of the oiler device. Fig. 3 is a central vertical section of the oil-cylinder, showing the valve closed and the roller in the normal position. Fig. 4 is also a sectional view, showing the valve open and the roller in position to make contact with the guides. Fig. 5 is a perspective view of the tapered plug-valve. Fig. 6 is a view of one end of the pendent boss illustrating part of the stop device.

In the accompanying drawings, the letter A, designates a part of the elevator car. The wires or cables which raise and lower it are not shown.

C, designates one of the two vertical guides between which the car travels, and D, one of the plates or blocks on the car which slides or traverses along the guides.

The oil-cup or grease-cylinder, E, may be of any approved form. It has a screw-cover, *f*, which closes its top and a follower, *g*, within it to place the oil or grease under compression. The follower is attached to a screw-threaded stem, *g'*, which has a spiral spring, *h*, around it between the follower and the said top cover, whereby to cause the follower to compress the oil or grease. The top end of the said

stem projects through the cover and a thumb-screw, *g''*, thereon serves to adjust the length of the stem within the cylinder and to thereby regulate the tension of the compression spring.

A pendent boss, H, is attached to the bottom of the oil-cylinder and has a transverse central tapered bore, *i*, opening through its two opposite sides. A vertical passage, *k*, to conduct the oil leads from the bottom of the oil-cylinder to this bore being in communication therewith at its top, and another passage, *k'*, extending obliquely with respect to the said vertical passage, leads from the bottom of the bore to the exterior where it is in position for discharging the oil upon a roller, L, which has position below the said pendent boss. The roller, L, is a cylinder having at each end a flange, *l*, and a contact surface, *l'*, between the two flanges. The roller also has end trunnions, *l''*. The roller may be hollow or solid.

I provide means whereby to connect the two oil passages, *k*, *k'*, so as to form a continuous passage, through which the oil or grease from the oil-cup or cylinder may be fed onto the said lubricating roller, the said means being also adapted to cut off the oil supply. The means consists, in the present instance, of a plug-valve, M, which slightly tapers from one end to the other and is provided with an angle passage, *m*, through it at its center. This valve is fitted within the tapered bore, *i*, of the pendent boss and turns or rocks therein.

By reference to Fig. 4, it will be seen that when the valve M, is turned one way so as to cause one end of its passage, *m*, to register with the conductor passage, *k*, the other end will register with the passage, *k'*, and thus a continuous opening is provided through the passages, *k*, *m*, *k'*, for the passage of the oil from the oil-cylinder onto the lubricating roller, L, and by reference to Fig. 3, it will be seen that when said valve is turned to bring its passages, *m*, out of coincidence with the passages, *k*, *k'*, the said continuous passage is broken and the supply of oil or grease from the cylinder is cut off.

The lubricating roller, L, normally hangs pendent below the oil-cylinder and out of contact with the vertical elevator guide, C.

Means are provided for causing the roller to be brought into contact with the said vertical guides whenever it is desired to oil the guides, and to hold it in such position until the operation of oiling the guides has been performed. These means also serve to automatically operate the plug-valve, so as to cause its passage, *m*, to register with the passages, *k*, *k'*, when the roller is in position to lubricate the guide as in Fig. 4, and so said passage will not register with passages, *k*, *k'*, when the roller is hanging down normally, as in Fig. 3, at which time it is desired to shut off the supply of oil.

The oscillatory plug-valve, *M*, has two shoulders, *m'*, *m''*, from each of which projects an arm, *n*, *n'*, with squared ends, *n''*. The valve has adjoining one shoulder, *m'*, screw-threads, *o*, and at the other shoulder a lateral pin or lug, *p*. The pendent boss has at one side adjoining the large end of its bore a cut-out, *p'*, having upper and lower stop-shoulders, *p''*, *p'''*. The plug-valve is inserted into the bore at this large end and the lateral pin or lug, *p*, when the plug-valve is turned, works in this cut-out and with the said shoulders forms a stop to prevent the plug from turning too far. When the lateral pin abuts against the upper stop-shoulder, *p'*, the passages, *k*, *k'*, and *m*, are in position to form the continuous passage from the oil-cylinder to the lubricating roller, *L*, and when the plug is turned so that the pin abuts against the lower stop-shoulder, *p''*, the continuous passage is broken and the supply of oil is cut off. A nut, *o'*, engages the screw-threads, *o*, and with a washer, *o''*, holds the valve, *M*, in proper position within the bore, *i*.

An arm, *Q*, has at one end a square hole which fits over the end of the valve-arm, *n*, and at the other end has a circular hole, *q'*, in which one trunnion-end, *l''*, of the roller, *L*, is journaled. A lever arm, *R*, has a lower end provided with a circular hole, *r*, in which the other trunnion, *l'*, of the roller is journaled, and has a square hole which fits over the square end of the valve-arm, *n'*. It will be seen that the roller has position below the boss, *H*, and hangs pendent from the valve-arms, *n*, *n'*. Thus if the arms, *Q*, *R*, carrying the roller, *L*, are moved in or out with respect to the oil-cylinder the valve, *M*, is turned and the continuous passage, *k*, *k'*, *m*, before referred to, is either formed or broken according to the direction in which the roller is moved. Screws, *r''*, confine the arms, *Q*, *R*, to the valve-arms, *n*, *n'*.

A standard, *S*, is provided to support the oiler device on top of the elevator car, *A*. The standard has suitable base-flanges, *s*, having longitudinal slots, and screws, *s'*, passed through these slots secure the standard to the car, and said slots make provision for the lateral adjustment of the standard so that it may be moved farther from, or nearer to, the vertical guide, *C*, to properly adjust it for action. The oil-cylinder, *E*, has on its rear side a boss,

t, provided with an open ring or loop, *t'*, which encircles the standard, *S*, and supports the cylinder. This ring-loop has a set-screw, *t''*, whereby it and the oil-cylinder are vertically adjustable up or down on the standard, being retained wherever desired by the said set-screw.

The means hereinbefore referred to which are provided for projecting the roller, *L*, so as to bring it into contact with the vertical guide, *C*, and holding it in contact therewith, and also for automatically starting at the same time the supply of oil or grease, are as follows: The lever-arm, *R*, has an extension, *R'*, provided at its end with two holes or eyes, *u*, and *u'*. A ring or collar, *v*, takes about the standard, *S*, and has a set-screw, *v'*, whereby to adjust it vertically thereon. This collar has a lateral arm, *v''*, having a hole, *v'''*, at its end, and a retracting spiral spring *w*, has one end attached in this hole and the other end of the spring is attached within the hole, *u*, of the extension, *R'*. The effect of this spring, *w*, is to cause the roller to hang in the normal position. An operating spring, *x*, has one end attached to the said extension at the hole, *u'*, and hangs down therefrom and is provided at its lower free end with a hand-ring, *x'*.

By pulling on the hand-ring, *x'*, the lever-arm, *R*, will cause the roller, *L*, to be projected out from its normal position into contact with the vertical guide, *C*, as indicated by the broken circular line in Fig. 1. The hand-ring is then secured in any suitable way or may be held by the hand of the operator to hold the roller in this position until the vertical guide, *C*, has been thoroughly lubricated. At the same time that the roller is projected, the plug-valve, *M*, being rigidly attached to the arm and lever, *Q*, *R*, will be turned until its pin or lug, *p*, comes into contact with the upper stop-shoulder, *p'*, at which point the passages, *k*, *k'*, and *m*, will be in coincidence and oil or grease from the oil-cylinder, *E*, will be fed or discharged onto the exterior contact surface, *l*, of the roller. The contact surface, *l*, will lubricate the front or face part of the vertical guide, and the flanges, *l'*, of the roller will guide the oil or grease around and onto the sides of the guide. As long as the roller, *L*, is in this projected position and in contact with the vertical guide, *C*, the oil or grease will be supplied, but when said roller is brought back to its normal position, and the lateral pin, *p*, abuts against the lower stop-shoulder, *p''*, the continuous oil-passage will be broken and the supply of oil or grease to the roller will be cut off. When the hand-ring, *x'*, is released the retracting spring, *w*, which holds the extension, *R'*, under tension will automatically return the roller to its normal position and also cut off the supply of oil thereto.

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

1. The combination of the elevator guides;

a car vertically-movable thereon; an oil-cup or cylinder supported on the car; a roller supported by arms normally out of contact with the vertical guide and capable of being projected so as to make contact with same; and a cut-off between the oil-cup and roller which operates automatically to allow of the passage of oil to the roller when the latter is in projected position in contact with the vertical guide, and which automatically cuts-off the supply of oil when the roller is in its normal position and out of contact with said guides.

2. The combination of a standard; an oil-cup supported by the standard; a roller mounted on movable bearings and having position below the oil-cup and capable of being projected by said bearings outward therefrom; a valve connected to said movable bearings and which supplies oil from the oil-cup to the roller when the latter is projected but which shuts off the supply of oil when the roller is in its normal position; means connected with the said movable bearings whereby the roller may be projected; and means for returning the projected roller to its normal position.

3. In an automatic oiler for elevator guides, the combination of the oil-cylinder; an oscillatory plug-valve connected with the cylinder and having two laterally-projecting arms; two arms each having one end rigidly attached to the said valve-arms and the other end having a hole or bearing; and a roller journaled in the said bearings of the two arms and normally having position below the oil-cylinder and capable of being projected outward therefrom to make contact with the guides, whereby, when said roller is projected, the valve will be opened to supply oil to the roller and when the roller is returned to its normal position the valve will be closed and the oil supply cut-off.

4. In an automatic oiler for elevator guides, the combination of the oil-cylinder; an oscillatory valve connected with the cylinder and having two projecting arms; two arms each

having one end attached to the said valve-arms and the other end having a bearing; a roller journaled in the said bearings of the arms and normally having position below the oil-cylinder and capable of being projected outward therefrom to make contact with the guides; and means connected to said bearings whereby the roller may be projected.

5. In an automatic oiler for elevator guides, the combination of an oil-cup or cylinder; a pendent boss at the bottom of the oil-cylinder and having a lateral bore opening through its two opposite sides and an oil passage from the cylinder; a plug-valve fitting and turning in said bore and controlling the flow of oil from said cylinder; arms rigidly attached to the plug-valve; and a roller having position normally below the cylinder and capable of being projected outward therefrom and carried by said arms, whereby by projecting the roller the valve will be opened to supply oil and by returning the roller to its normal position the valve will be closed and the supply of oil cut-off.

6. In an automatic oiler for elevator guides, the combination of an oil-cup or cylinder; a pendent boss at the bottom of the oil-cylinder and having a lateral bore opening through its two opposite sides and an oil passage from the cylinder; a plug-valve fitting and turning in said bore and controlling the flow of oil from said cylinder; arms rigidly attached to the plug-valve; a roller below the cylinder and capable of being projected outward therefrom and carried by said arms and operating the valve; and a stop device to prevent further movement of the valve when it has been turned to a full open or closed position.

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

WILLIAM J. FERGUSON.

Witnesses:

CHARLES B. MANN, Jr.,
C. CALVERT HINES.