

(No Model.)

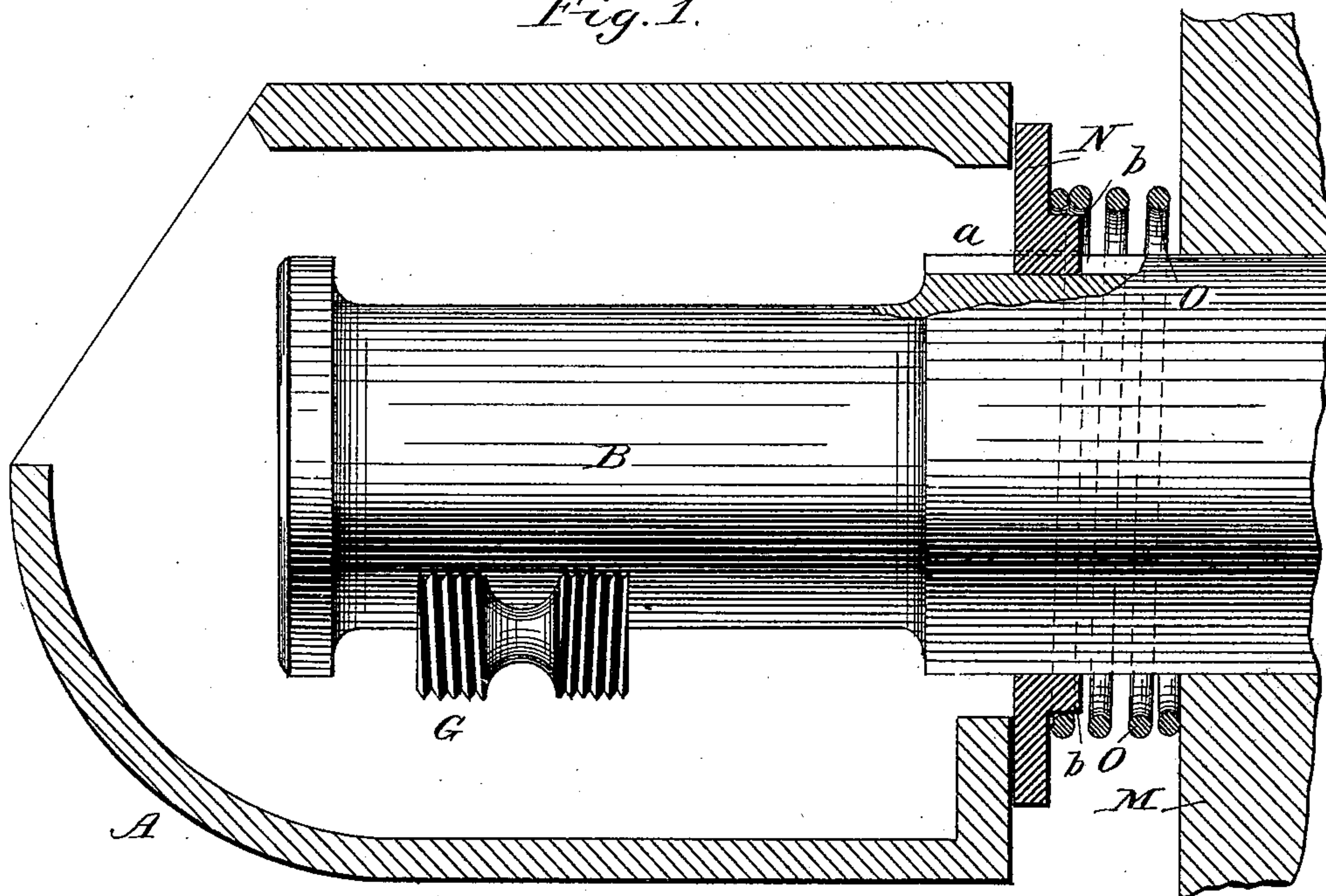
2 Sheets—Sheet 1.

F. G. BROWNELL.  
CAR AXLE LUBRICATOR.

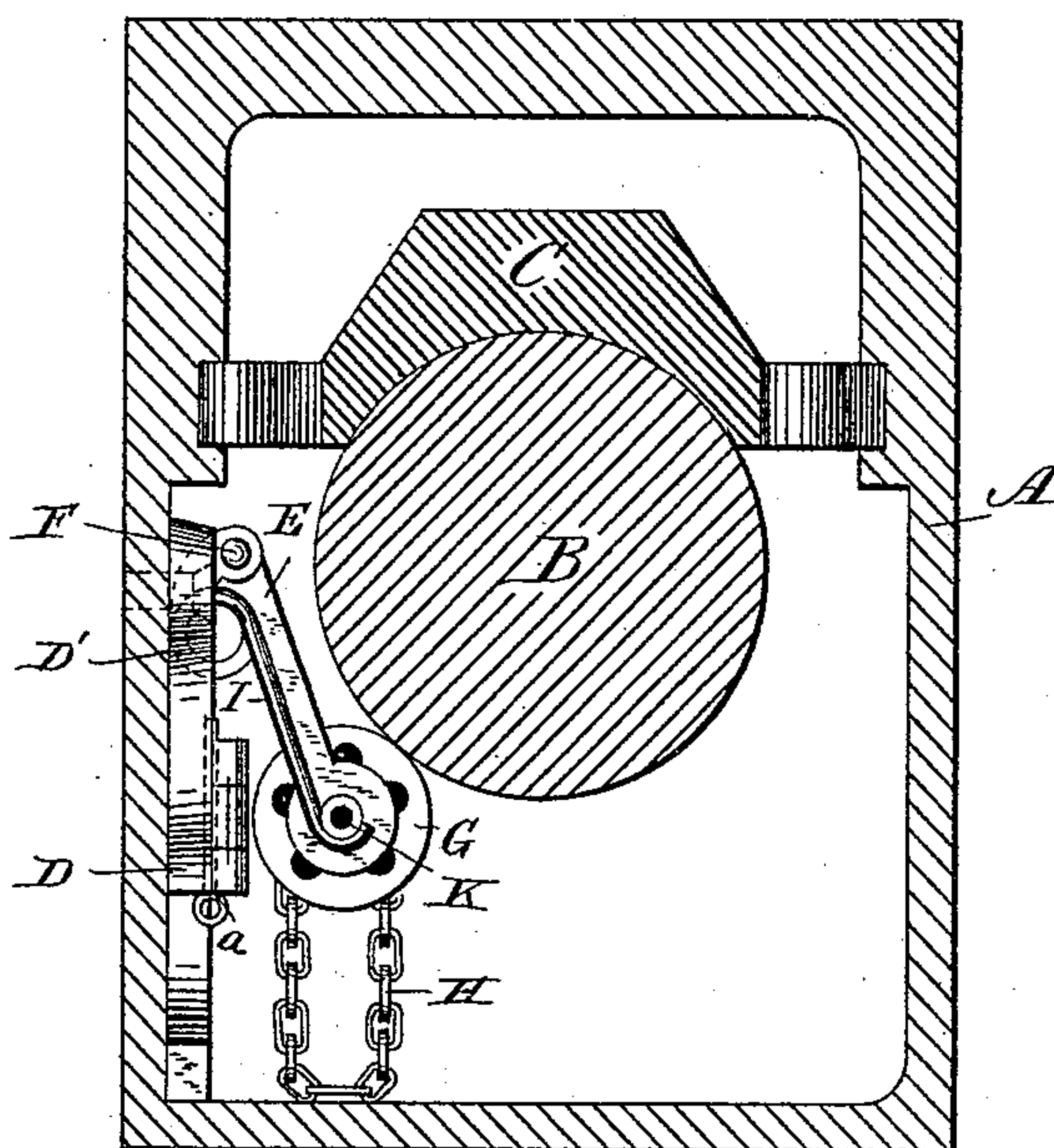
No. 343,004.

Patented June 1, 1886.

*Fig. 1.*



*Fig. 2.*



Witnesses:

H. N. Low  
Marvin A. Curtis.

Inventor:

Frederick G. Brownell  
by Marcus Bailey  
his attorney

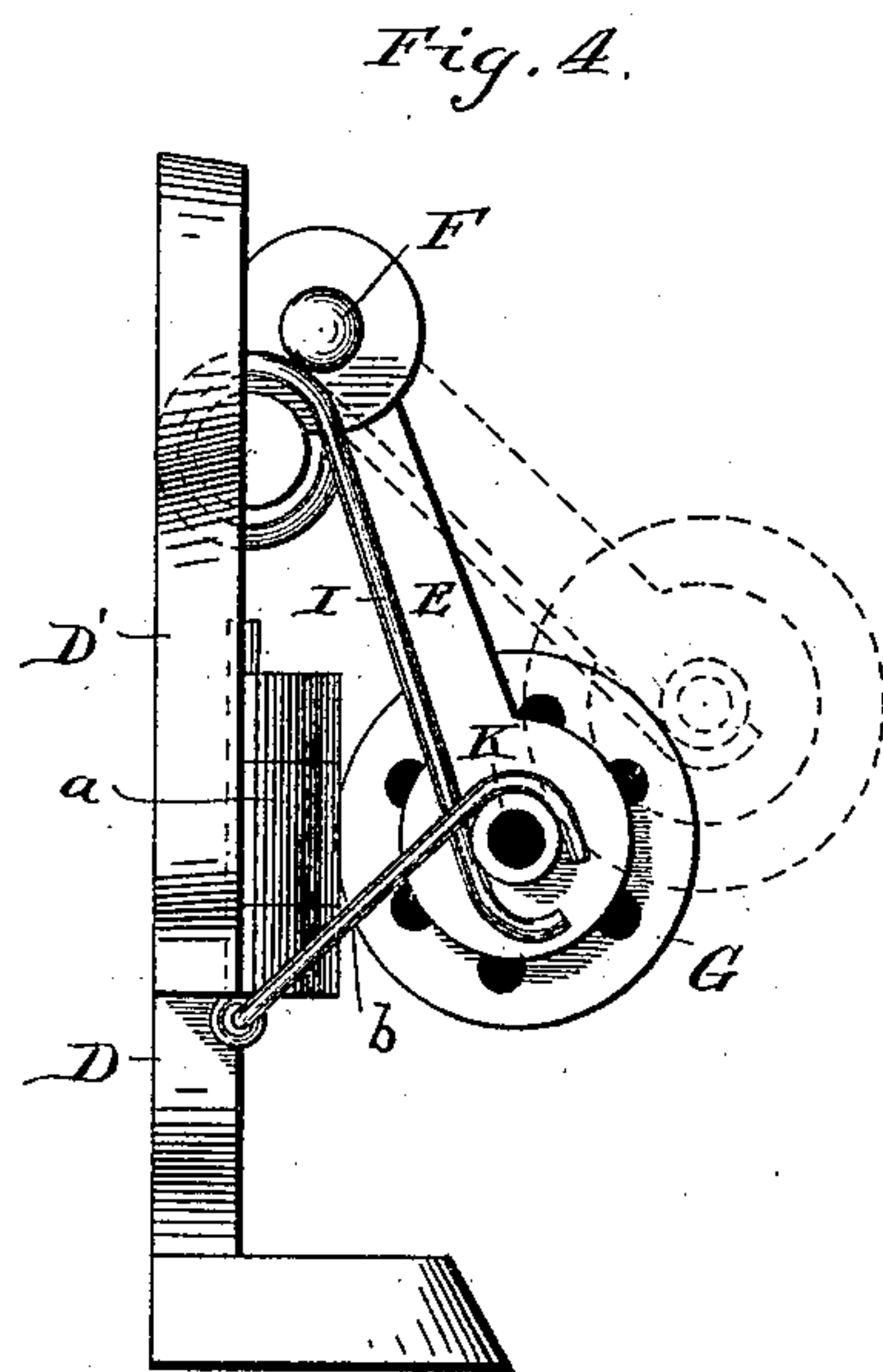
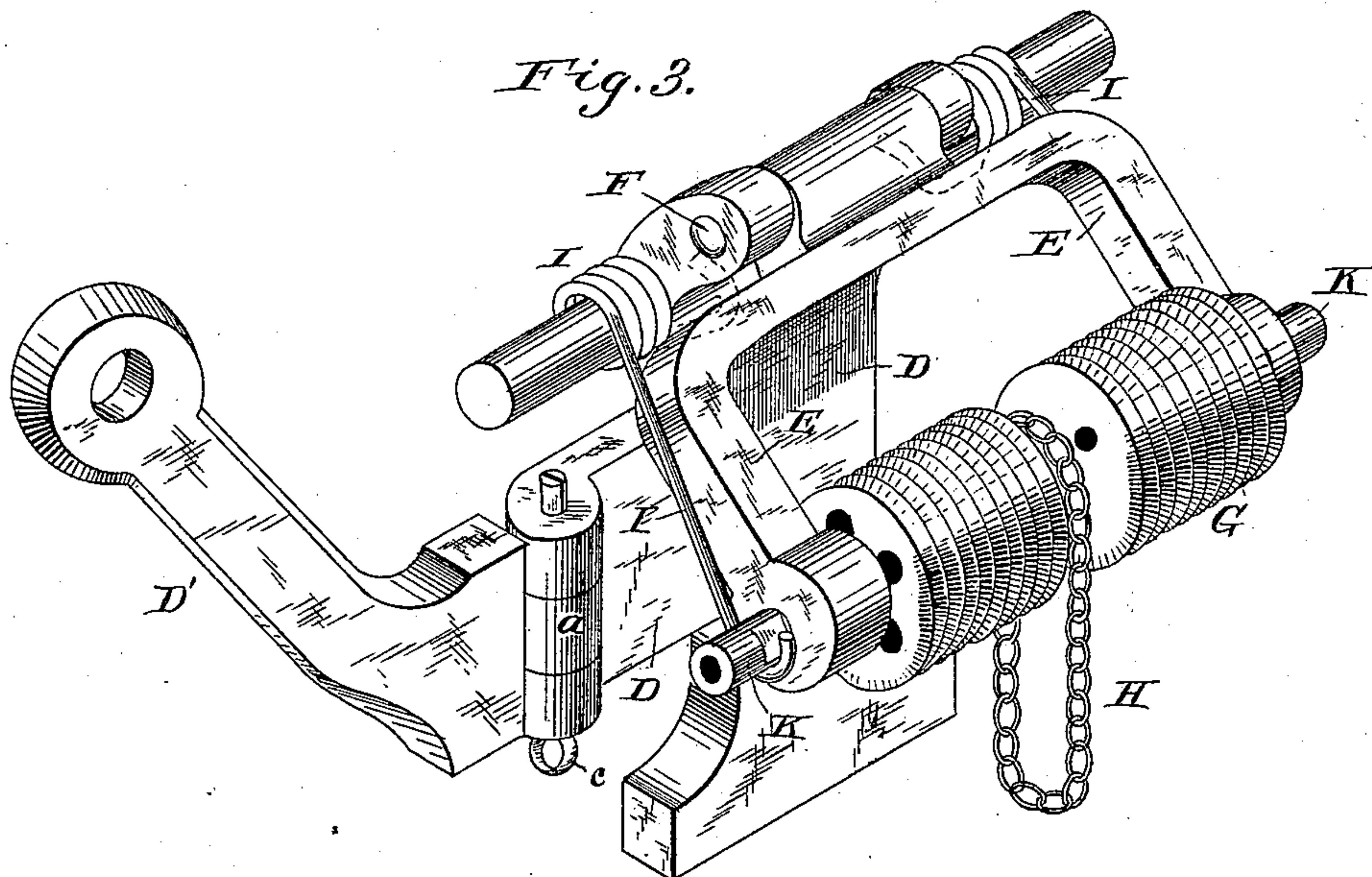
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# UNITED STATES PATENT OFFICE.

FREDERICK G. BROWNELL, OF BURLINGTON, VERMONT, ASSIGNOR OF ONE-HALF TO THEODORE S. PECK, OF SAME PLACE.

## CAR-AXLE LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 343,004, dated June 1, 1886.

Application filed April 19, 1886. Serial No. 199,299. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK G. BROWNELL, of Burlington, in the State of Vermont, have invented certain new and useful Improvements in Car-Axle Lubricators, of which the following is a specification.

My invention relates to devices applied to the axle-boxes of railway-cars for the purpose of lubricating the axles which run in said boxes; and it has more particular reference to that species of such devices in which a lubricating-roller is held in contact with and rotated by the axles which it is intended to lubricate.

I have devised a convenient, compact, and efficient arrangement of devices for the purpose above named; and I have also provided a simple, cheap, and effective guard for preventing dirt and dust from getting access to the interior of the box and thus clogging the lubricating device. These improvements, however, can best be explained and understood by reference to the accompanying drawings, in which—

Figure 1 is a longitudinal vertical central section of an axle-housing box with the axle in elevation, the bearing removed, and the lubricating-roller represented in elevation in the position it would stand in relation to the axle. Fig. 2 represents the housing-box and axle in cross-section, with the lubricating device in elevation. Fig. 3 is a perspective view of the lubricating device detached. Fig. 4 is a side elevation of said device, showing the lubricating-roller in two positions.

In the drawings, A is the housing-box, B the axle, and C the brass-bearing, all of ordinary or suitable construction. With a view to exclude dust from the box I insert between the rear or inner face of the housing-box and the adjoining hub M of the wheel a loose collar or dust-guard, N, which fits and slides on the axle, being connected thereto by a longitudinal feather or spline and groove connection, *a*, so that it shall rotate with the axle, and between the hub of the wheel and the collar I interpose a spiral spring, O, which fits upon the hub *b* of the collar, and presses the latter up against the housing-box, so as to close the opening in the latter through which the axle extends.

A spring-pressed dust-guard for a housing-box I am aware is not new, broadly considered. I am not aware, however, that the arrangement just described has ever before been devised. It is simple, readily applied and used, and entirely effective.

The supporting-frame of the lubricator is shown at D. It is in this instance a plate adapted to be applied and secured to the side of the axle-box in vertical position, as seen in Fig. 2, thus removing the frame and working parts of the lubricator from the bottom of the housing-box. From the upper edge of the plate extends upwardly two bearings, which form part of the plate or are rigidly fastened thereto, and are intended to receive the cross-pin F, that forms the axle or pivot of the two arms E, which are hung thereon, and at their lower ends have bearings to receive the axle or journals of the lubricating-roller G. The journals are centered in their bearings, as indicated in Fig. 3. The roller may, however, be mounted on an axle, or may be otherwise supported to revolve in its bearings. This roller, as seen in Figs. 1 and 3, is cut away in the center, with the cut-away portion inclining or sloping toward the periphery of each of the two portions of the roller between which it is located, and the periphery of the roller itself is grooved in a manner similar to screw threading—that one on the one side being a right-hand thread and that on the other being a left-hand thread. By this right-and-left screw-threaded arrangement the lubricant is taken and distributed uniformly and certainly, and at the same time the friction between the roll and the axle is materially reduced. Upon the central cut-away portion of the roller is an endless chain, H, or its equivalent, which dips down into the lubricant and conveys the same up to the central portion of the roller, whence it passes to the grooved peripheral portions of said roller, as will be understood without further explanation. The chain, in fact, not only conveys the oil to the roller, but at times actually throws it upon the axle. The central portion of the roller may be provided, if desired, with any of the customary projections or other devices employed to compel the revolution of the chain when the roller revolves.



The right-and-left screw-threaded lubricating-roller is pressed outwardly and held with yielding pressure against the car-axle by means of any suitable spring or springs.

5 The preferred arrangement is shown in the drawings, consisting of two springs, I—one at each end of the roller—which bear at their free ends against pins or studs K, projecting laterally from the arms E, said pins being, in  
10 fact, in this instance the heads of the centering-screws of the roller. At their other ends the springs are coiled around hubs laterally projecting from plate D, and are then held in place or fastened by having their ends inserted  
15 into sockets in the frame D, or in any other suitable way.

With a view to assure the proper lubrication of the journals and bearings of the roller the latter has holes or openings bored in it, as seen  
20 to better allow the oil to pass onto the bearings.

The supporting-frame D is made in two parts, the part D' being a lateral extension which contains the holes through which passes  
25 the bolt for securing the frame to the housing-box, and is jointed to the part D by a hinge, a, which permits the two parts to be folded up.

Ordinarily lubricating attachments are difficult to put in and take out of housing-boxes;  
30 but by the construction of the frame just described the latter can be folded up so as to be easily inserted in place, and can then be as readily unfolded. With the same end in view I make use of a hook, b, (shown in Fig. 4,) of  
35 which one end is hooked in the eye of the cotter-key c, which forms the pintle of hinge a. The roller is then pressed down toward the frame until the other end of the hook can pass or catch over the end of the adjoining roller-  
40 centering pin or shaft, as shown in full lines in Fig. 4. In this way the roller can be held close against the frame during the operation of inserting the lubricator into the housing-box, and after the lubricator is in proper place  
45 the hook can be removed, thus allowing the roller to move outwardly until it brings up against the axle which it is to lubricate, as indicated by dotted lines in Fig. 4.

It may be found desirable at times to form a horizontal flange or base on the lower end  
50 of frame D, as shown in Fig. 4, to rest on the floor or bottom of the housing-box, and to aid in supporting or holding up the frame in proper place.

Having described my improvements and the  
55 best way now known to me of carrying the same into practical effect, what I claim herein as new and of my own invention is—

1. The combination of the right-and-left screw-threaded or grooved lubricating-roller,  
60 the chain or conveyer, and the axle or journal, as and for the purposes set forth.

2. The combination of the axle, the housing-box, the lubricator-frame applied to the side of the same, the lubricating-roller and its  
65 pivoted supporting arms or bracket, the chain or conveyer, and the springs, arranged and operating as set forth.

3. The jointed or folding lubricator-frame D D', in combination with the lubricating-  
70 roller, its pivoted supporting bracket or arms, and the springs, substantially as and for the purposes hereinbefore set forth.

4. The lubricating-roller formed and adapted to receive the supply of lubricant at a point  
75 intermediate between its two ends, and right-and-left screw-threaded or grooved, respectively, from that point toward its ends, as and for the purposes set forth.

5. The combination of the housing-box, the  
80 axle D, and wheel M, the sliding collar N, encircling the axle and held thereon by a feather or spline and groove connection, and the spiral spring O, encircling the axle and confined between the wheel and the housing-box, all  
85 constructed and arranged as hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 12th day of April, 1886.

FREDERICK G. BROWNELL.

Witnesses:

T. S. PECK,  
ARTHUR R. ST. PETERS,  
ARTHUR A. MARTIN.