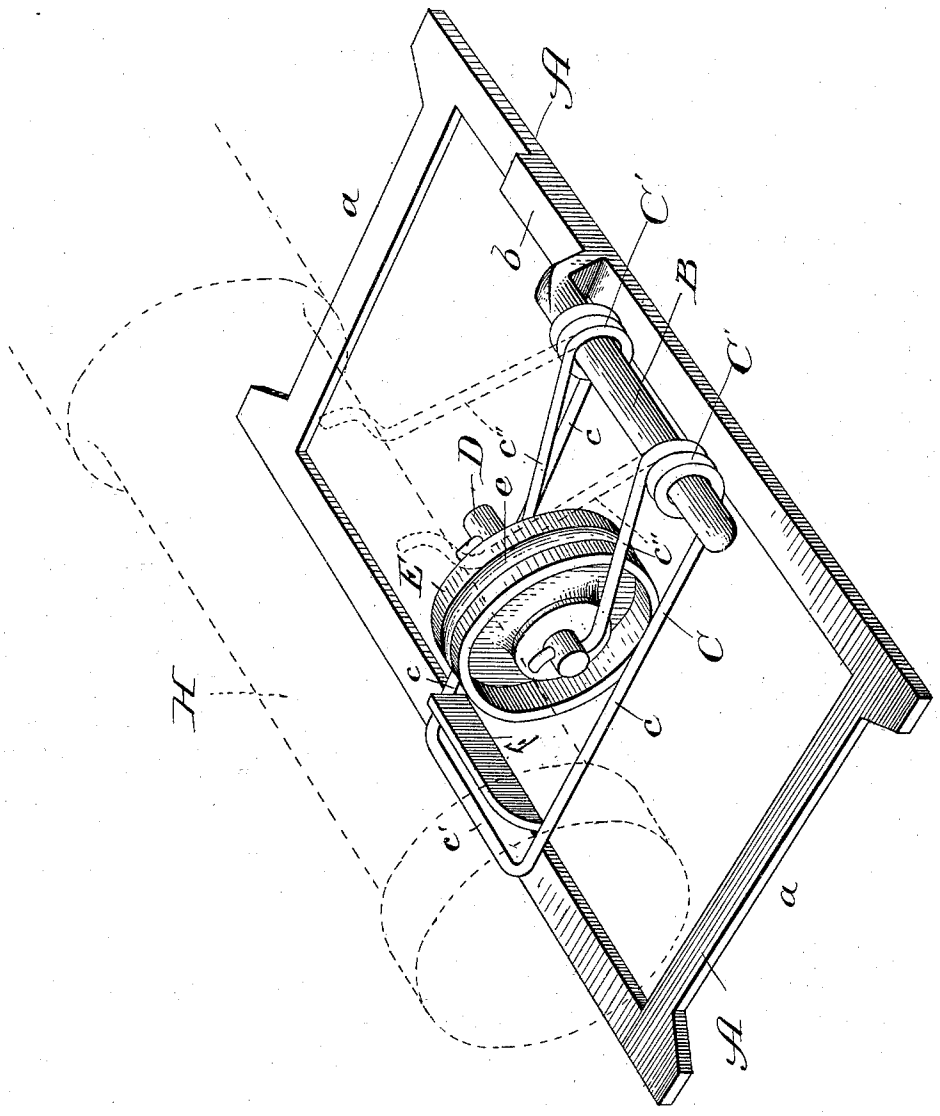
(No Model.)

W. H. WARD.

AXLE LUBRICATOR.

No. 482,503. Patented Sept. 13, 1892.



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UNITED STATES PATENT OFFICE.

WILLIAM H. WARD, OF TOPEKA, KANSAS, ASSIGNOR OF ONE-HALF TO JOSIAH P. LEWIS, OF SAME PLACE.

AXLE-LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 482,503, dated September 13, 1892.

Application filed November 16, 1891. Serial No. 412,098. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. WARD, a citizen of the United States, residing at Topeka, Shawnee county, Kansas, have invented a certain new and useful Improvement in Car-Axle Lubricators, of which the following is a specification.

These lubricators, as is well known, have been made in a vast variety of forms. In some of them wheels have been used dipping into the oil and pressed against the car-axle, so that as the latter revolved the wheels were caused to revolve, thus bringing oil to and depositing it upon the surface of the axle. As heretofore made, these revolving-wheel lubricators have been composed of quite a number of parts, which it was necessary to insert into the journal-box separately and put together therein, and these parts have been so complex and required such nice adjustment as to render it necessary to have an expert to put the lubricators together, and certain means for adjusting the tension to constantly force them against the surface of the axle have been provided. Moreover, the wheel being supported from one side of the frame, there was a constant tendency to revolve the lubricator.

The object of my invention is to do away with the above-mentioned defects and to construct a lubricator in so simple a manner that it can be put together in the journal-box by any one without requiring the services of a skilled mechanic. The pressure is distributed over the frame in such manner as to prevent any rocking or tilting. Furthermore, I dispense with one of the wheels heretofore considered necessary to the adjusting mechanism, and generally construct my device with the fewest possible number of parts; and my invention consists in the features and combinations hereinafter described and claimed.

The drawing presents a perspective view of my improved lubricator as it appears in place in the journal-box, with the car-axle H represented in dotted lines as applied thereto. The journal-box itself being well known, I have not shown the same, since it would merely tend to complicate the drawing and obscure the parts necessary to be shown.

In constructing my lubricator I first make a frame A, which may be made of malleable iron, steel, or other suitable material, and is of suitable length and breadth to fit more or less closely within the journal-box, resting upon the bottom thereof. For the purpose of avoiding any possible inequalities, due to imperfect casting, I prefer to recess the ends of this frame, as shown at *a*. At one side of this frame is a suitable spindle B, integral with or separate from and attached to the frame, as described. This spindle is made, preferably, in the form shown, wherein it is represented as bent downward and flattened at one end *b*, which flattened end rests upon and is secured to one side of the frame when the spindle is in a separate piece, leaving the other end of the spindle open, and the body of the spindle rests a suitable distance above the plane of the frame A.

I next construct the supporting or actuating spring C. This is preferably made out of a single piece of steel or other wire or material bent in the form shown, wherein it is provided with transverse arms *c*, the connecting-arm *c'*, the coils C', and the wheel-supporting arms *c''*. The inner ends of the arms *c''* are bent upward, as shown, and pass through holes in the wheel-supporting spindle D, which is made out of steel or other suitable material and of any desired dimensions.

The lubricating-wheel E is preferably made of cast-iron and of any size desired. In practice I have found that a diameter of two and one-eighth inches and a face breadth of three-quarters of an inch accomplished very satisfactory results. This wheel is preferably provided with a groove *e*, running around its face, as shown.

On the side of the frame opposite the spindle B is a lug F, operating to hold the lubricating apparatus in place, as hereinafter to be described.

The parts having been constructed as above described, with the wheel mounted upon the spindle and the spring attached thereto, are put together in the following manner: The frame A is inserted into the axle-box, resting upon the bottom thereof. The spring and wheel are then introduced into the box, the coils C'

being slipped over the spindle B, the internal diameter of such coils being of a suitable size to fit loosely upon the same. The wheel is then bent downward toward the frame, compressing the spring, and the spring and wheel forced in under the axle, bringing them into the position shown in the drawing. As they move inward the end of the spring opposite the spindle B rides up upon the beveled end of the lug F and passing over the same is held thereby, preventing the spring from being withdrawn without raising the end. In the normal position of the spring the arms *c''* stand at an angle of about forty-five degrees to the arms *c*, as indicated in dotted lines; but when the device is in place the pressure of the axle forces the wheel into the position shown in solid lines, thereby compressing the spring. The natural resiliency of the latter therefore tends to force the wheel against the axle with the necessary pressure to keep it automatically in constant contact therewith. The arms *c c'*, resting upon the frame A, prevent the pressure of the axle from simply rotating the spring upon the spindle, and, distributing the pressure over the frame, there is no possibility of the lubricator rocking or tilting; also, by their engagement with the lug F they prevent the withdrawal or outward movement of the lubricator. By these means I provide a lubricator which seems to be composed of the fewest possible number of parts, which is exceedingly simple and economical in construction, and which can be put together and taken apart instantly by any one, therefore not requiring the services of a skilled mechanic, as has formerly been the case with other lubricators, as above indicated. Furthermore, by means of the manner in which the device is constructed the pressure of the axle holds the various parts of the lubricator together.

Although I have called the device a "car-axle lubricator" and claimed it as such, it may be used in connection with any other axle or journal with which it is capable of being used, and I do not intend to limit myself to its use with a car-axle solely and intend my claims to cover the device wherever used. While I have shown more or less precise forms, I do not intend to limit myself thereto, but contemplate changes of form, material, and proportions, and the substitution of equivalent members, as may seem desirable or necessary.

I claim—

1. In a car-axle lubricator comprising a frame, a supporting-spring comprising coils having two sets of arms extending therefrom, one of such arms resting normally in a substantially horizontal position and the other set extending from the coils at an angle to the horizontal arms and adapted to support the lubricating-wheel, substantially as described.

2. A car-axle lubricator comprising a frame, a spindle attached to the frame at one end only, and a supporting-spring comprising coils embracing the spindle, arms for supporting the lubricating-wheel, and arms extending to and resting upon the opposite side of the frame, whereby the spring may be introduced into the axle-box and removed therefrom without disturbing the frame.

3. In a car-axle lubricator, the combination of a frame resting upon the bottom of the journal-box, provided with a spindle and a lug, a supporting-spring comprising coils adapted to pass over the spindle, substantially horizontal arms adapted to rest upon the frame and engage with the lug, angularly-placed arms, a spindle supported by the latter arms, and a lubricating-wheel revolving upon such spindle, substantially as described.

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