(No Model.) 2 Sheets—Sheet 1.

W. W. SMITH.

AXLE LUBRICATOR.

No. 469,100. Patented Feb. 16, 1892.

FIG. 2.

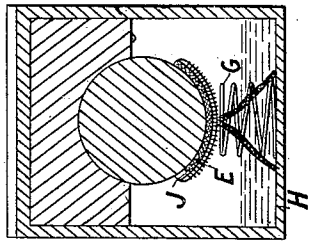


FIG. 3.

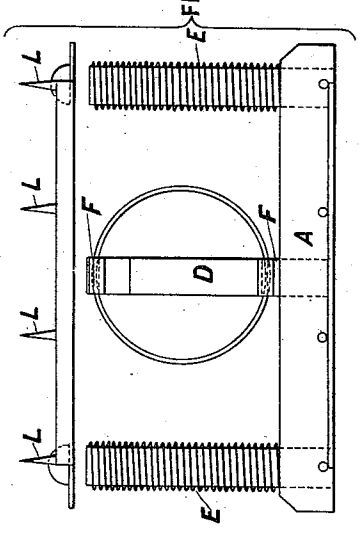


FIG. 1.

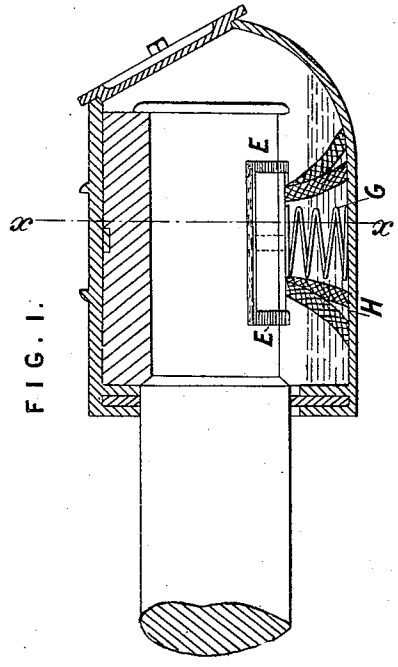


FIG. 4.

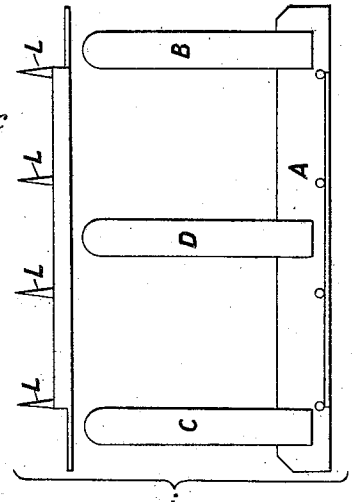
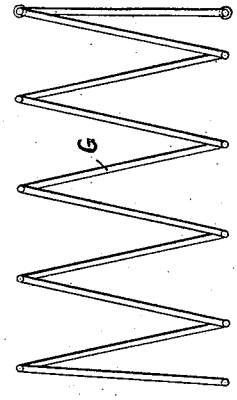


FIG. 5.



Witnesses:
Everett Wait
P. B. Doring

Inventor:
Walter W. Smith
by Marcellus Bailey
his Attorney.

(No Model.) 2 Sheets—Sheet 2.

W. W. SMITH.

AXLE LUBRICATOR.

No. 469,100. Patented Feb. 16, 1892.

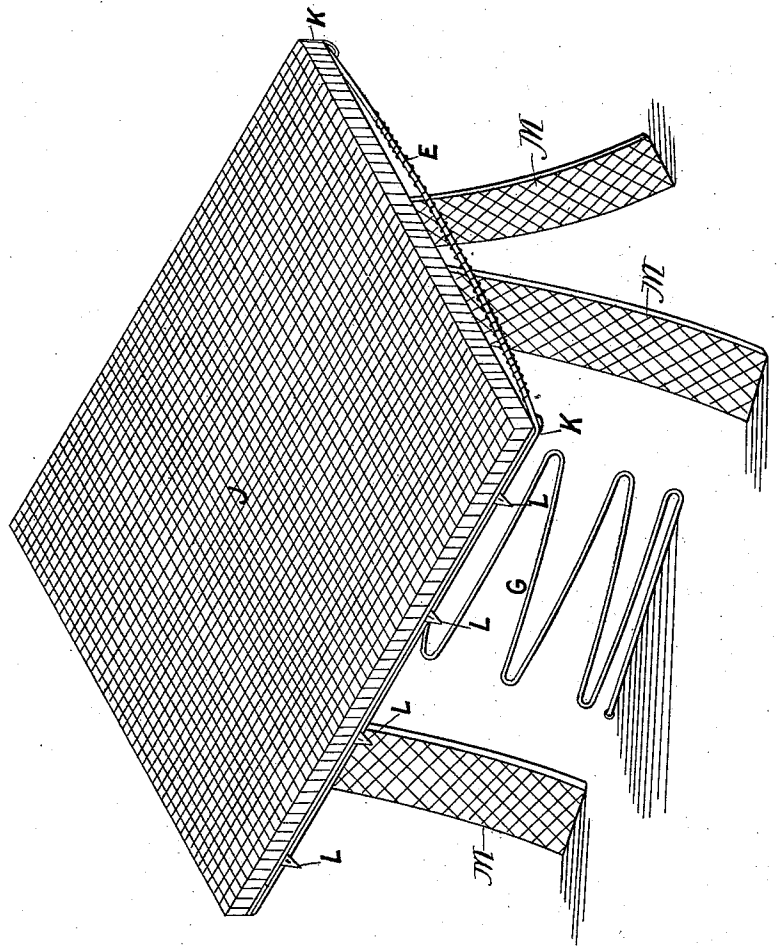


Fig. 6.

Witnesses:
E. W. Bond
P. B. Dorsey

Inventor:
Walter W. Smith
by Thomas Allen Bailey
his attorney.

UNITED STATES PATENT OFFICE.

WALTER WILLIAM SMITH, OF LONDON, ENGLAND.

AXLE-LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 469,100, dated February 16, 1892.

Application filed June 3, 1891. Serial No. 394,945. (No model.)

To all whom it may concern:

Be it known that I, WALTER WILLIAM SMITH, railway rug and lubricator manufacturer, a subject of the Queen of Great Britain, residing at Priory Works, High Road, Lower Clapton, in the city of London, England, have invented certain new and useful Improvements in Journal-Bearing Lubricators, of which the following is a specification.

This invention relates to that class of journal-bearing lubricators wherein a pad of cotton, hair, wool, or other absorbent material is held from below close up to or against the rotating shaft. These pads are supplied with lubricant by wicks or fibers of wool, cotton, or other similar material attached to the under sides thereof the other ends of said wicks or fibers dipping into an oil-box or other receptacle and the liquid lubricant thus supplied to the journal and spread over its surface by capillary attraction.

Various means have been adopted for holding pads of this description in position against the journal; but all have been more or less defective, either in straining the pads or in holding them too tightly or too rigidly up to the shaft, whereby the pad soon wears away and becomes useless for its purpose, resulting in a heated journal.

The object of this invention is to hold a pad of this description in correct position close up to or against the journal in such a manner that while the pad is supported from below the support is of a sufficiently resilient nature to give to the motion of the shaft instead of being rigidly or tightly held thereto as hitherto.

In order that my invention and the manner in which it may be carried into practice may be well understood, I will describe the same with reference to the accompanying drawings, in which—

Figure 1 shows a longitudinal section of a car-axle box with my invention applied thereto. Fig. 2 is a vertical section taken on the line *x x*, Fig. 1. Figs. 3 and 4 are enlarged views showing plan and edge view of the two parts of the frame, and Fig. 5 shows the spiral spring G. Fig. 6 is a perspective view of a pad and frame made in conformity with this invention.

According to this invention the support for the pad consists of a metallic or other frame curved to the shape of the shaft and made in two parts, (shown in Figs. 3 and 4,) each part consisting of a side piece A, two end pieces B and C, and a central transverse piece D. The two parts are held together, so as to form the frame, by means of transverse helical springs E, wound over the end pieces B and C of one part, the corresponding end pieces of the other part being placed within said helical springs E. The end pieces B B and C C and the central transverse pieces D D of the two parts of the frame will lie one on the top of the other. The two sides A A of the frame are thus separated by the transverse spring connections E and may be closed up nearer to each other, according to the power of the springs E, and when in position will thus allow for any small horizontal motion of the shaft out of its true plane of rotation. The springs E will return the sides A A of the frame to their normal position when the pressure is removed. The frame so made is supported on or attached to a vertical, spiral, or other spring G, resting on the base H of the axle-box, thus affording a springy or resilient vertical support for the frame. The pad J on such frame will therefore give to every vertical or horizontal motion of the rotating shaft.

A convenient means of attaching the frame to the spring G is shown in Fig. 3. On the under side of the central transverse piece D of one of the parts of the frame are fixed or formed two loops or eyes F, through which one end of the spring G is threaded; but I do not confine myself to this method of attachment.

On the longitudinal sides of the pad I provide a selvage K, preferably woven in one with the back on which the pile of the pad is made. These selvage edges K are turned over the sides A A of the metal frame and impaled on the spikes, pins, or their equivalents L, rigidly secured to or formed in one with the sides A A of the frame and on the under surface thereof. By this means the pad is held firmly in position on the frame and prevented from being worked off the frame by the rotating shaft. At the same time metallic contact between the pad-frame and the rotating shaft is avoided, as there is no metal on the upper part or face of the pad.

To attach the pad to the frame, one selvage

edge K is impaled on the spikes L. The sides A A of the frame are then pinched together, so as to compress the transverse springs E E thereon. The other selvage edge K is then fixed on the other row of spikes L and the frame released. The springs E E then return the frame to its original position, thereby stretching the pad and holding it tightly in position on the top of the frame.

The pad J is made of any suitable shape and composed of cotton, hair, wool, or other absorbent material. It is supplied with lubricant by wicks or fibers M of wool, cotton, or other similar material attached to the under side thereof. The ends of said wicks or fibers dip into a box or other receptacle containing oil, and the liquid lubricant is thus supplied to the journal and spread over its surface by capillary attraction.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

In a journal-lubricator, the combination of a two-part frame, springs interposed between the ends of said parts, a pad resting upon said frame, spikes or pins on the upper part of the frame for securing said pad in place, a yielding support for said frame resting upon the base of the axle-box, and wicks on the under side of the pad for supplying lubricant thereto, substantially as described.

WALTER WILLIAM SMITH.

Witnesses:

G. F. WARREN,
Notary Public, London.

JOSEPH LAKE,
17 *Gracechurch Street, London.*