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J. S. COATES & G. F. HART.

LUBRICATING DEVICE.

APPLICATION FILED JAN. 6, 1904.

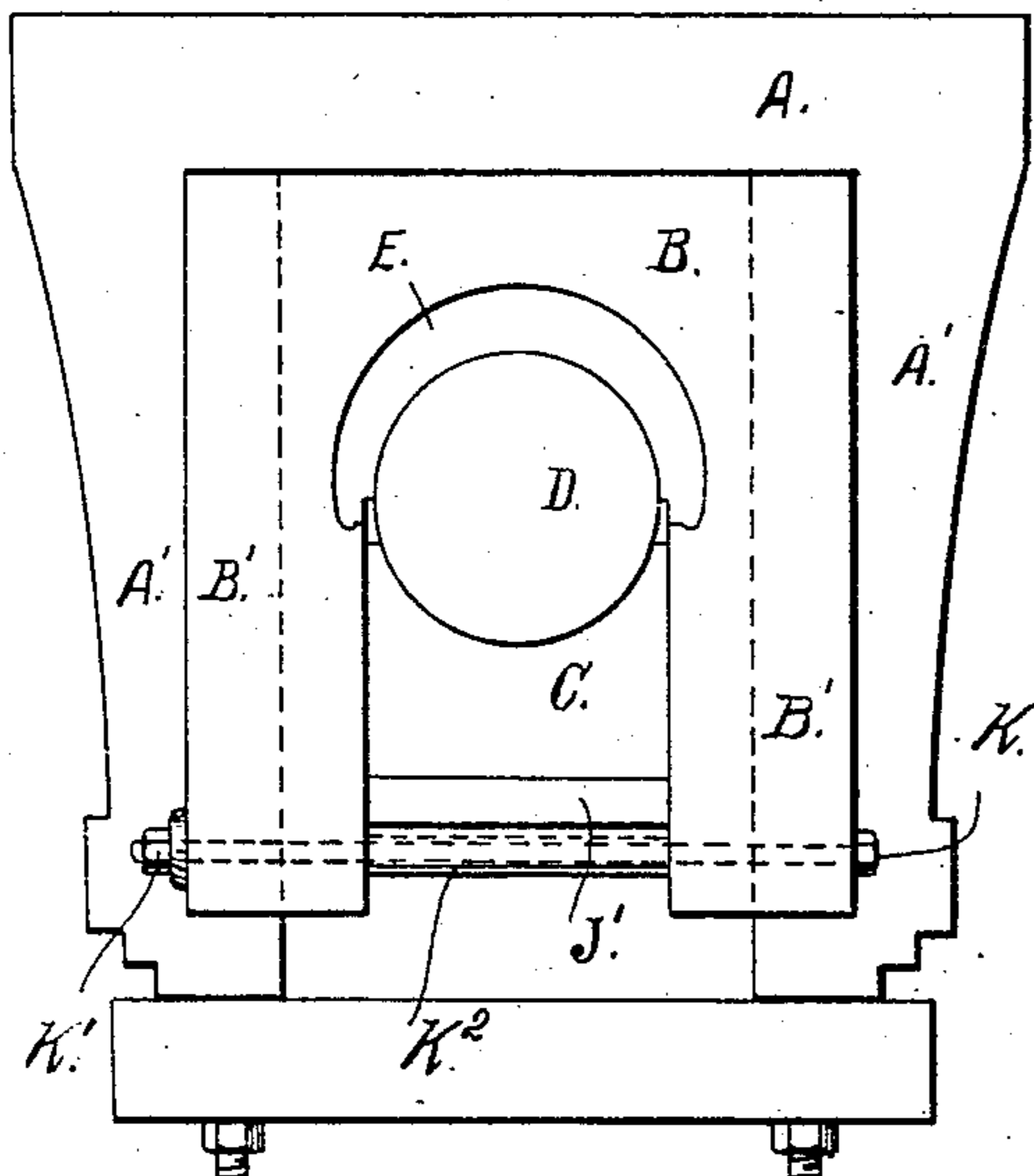


Fig. 1.

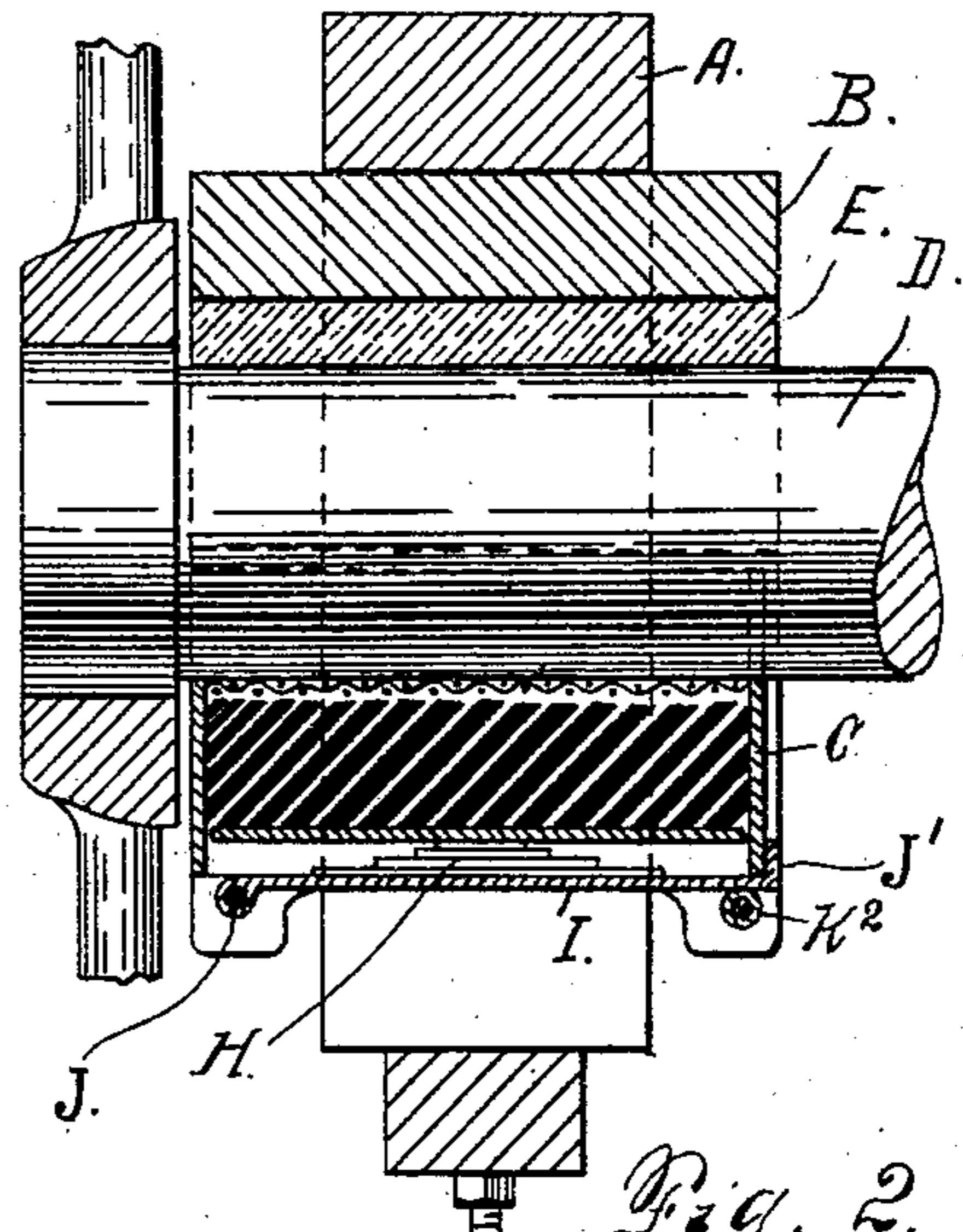


Fig. 2.

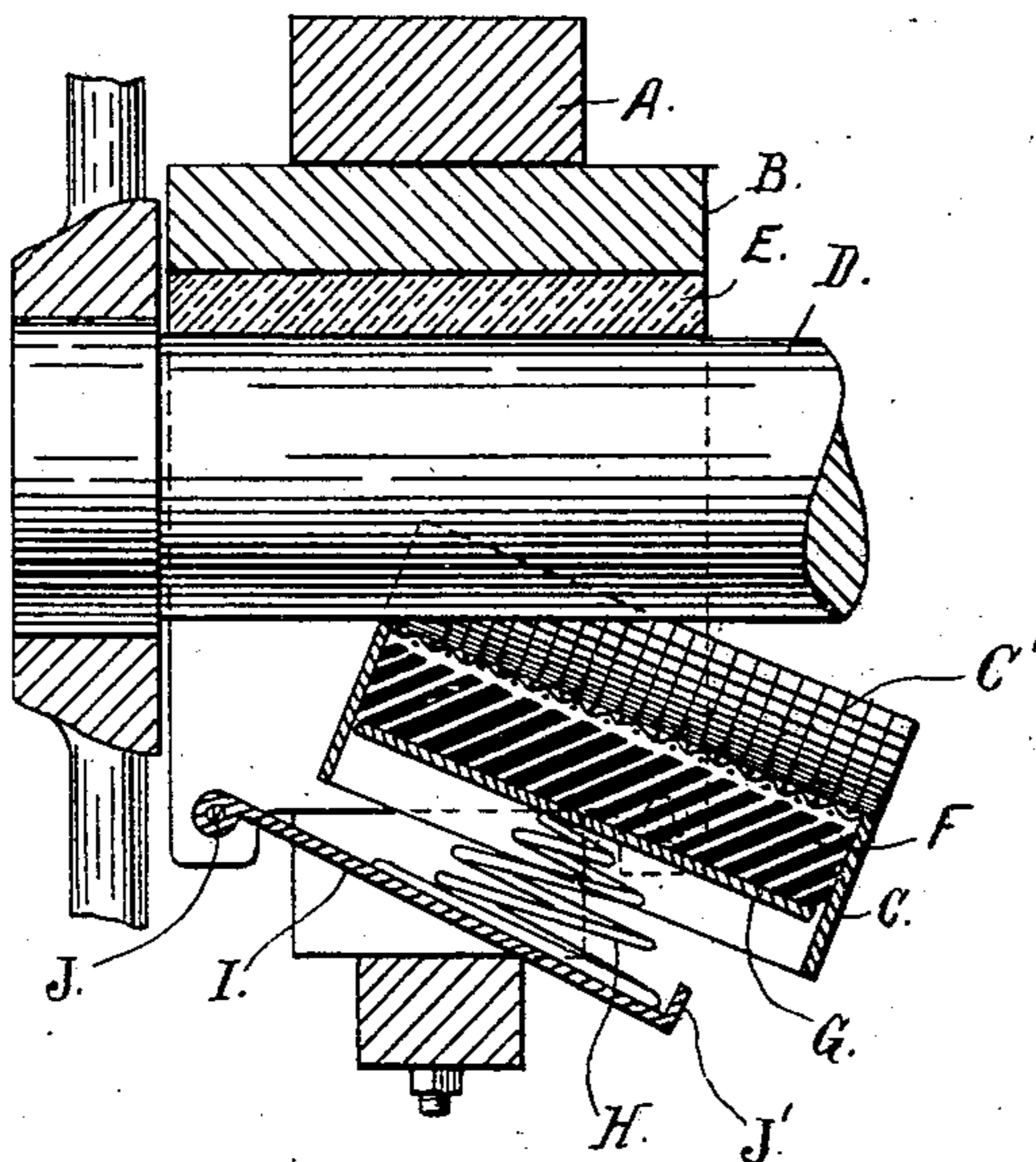


Fig. 3.

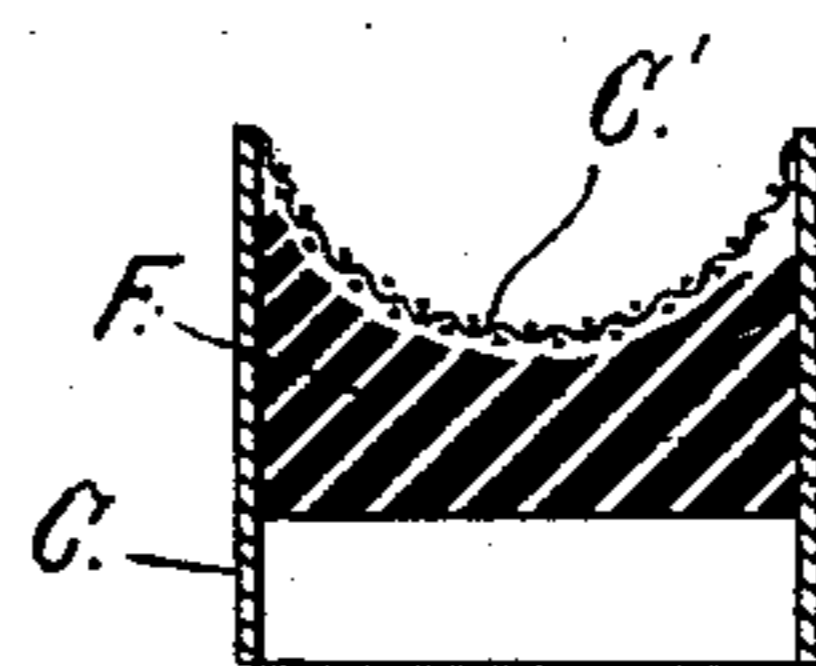


Fig. 4.

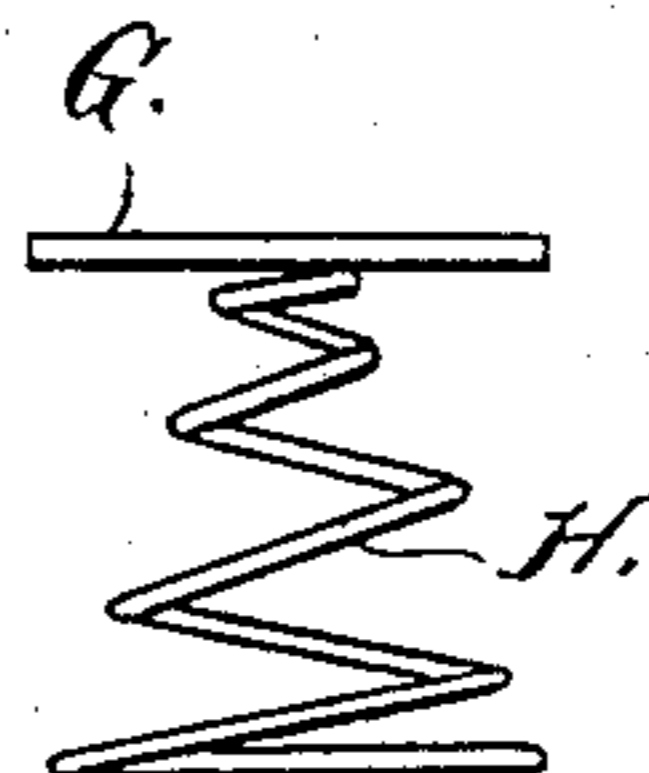


Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

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LUBRICATING DEVICE.

No. 855,386.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed January 6, 1904. Serial No. 187,962.

To all whom it may concern:

Be it known that we, JOSEPH S. COATES and GEORGE F. HART, both citizens of the United States, the said JOSEPH S. COATES residing at the city and county of Denver, State of Colorado, and the said GEORGE F. HART residing at Helper, in the county of Carbon and State of Utah, have invented certain new and useful Improvements in Lubricating Devices; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Our invention relates to means for automatically lubricating the journals of locomotive or car wheel axles, and consists of a construction adapted for use with solidified oil, hard grease or any lubricant not in solution.

Our invention consists in providing the journal box with suitable attachments, whereby the cellar of the journal box may be utilized as a receptacle for the grease or solidified lubricant. The portion of the cellar adjacent the journal is equipped with wire gauze or other suitable mesh material adapted to allow the passage of the lubricating material from the cellar below. The lubricant is acted on by a follower which engages the lower side of the lubricant cake and is in turn acted on by a spring placed under sufficient tension, to keep the inner face of the lubricant cake against the wire gauze of the cellar, until the cake of lubricant is practically exhausted. The spring bears against a hinged lid having an upwardly projecting lip or flange adapted to engage the inner extremity of the cellar, whereby the latter is held securely in place, and locked against longitudinal movement in one direction on the journal. The hinged lid is locked in place by means of a bolt passed through the two depending parts or jaws of the box in which the cellar is located.

This invention is distinguished from those

constructions in which a special lubricant containing case is inserted in the cellar of the journal box. 50

Having briefly outlined our improved construction as well as the function it is intended to perform, we will proceed to describe the same in detail reference being made to the accompanying drawing in which is illustrated an embodiment thereof. 55

In this drawing, Figure 1 is an end view of a locomotive driver journal box equipped with our improvements. Fig. 2 is a vertical section taken through the same, shown in connection with the hub of the driver. Fig. 3 is a similar view illustrating the manner of removing the lubricant-containing cellar of the journal box. Fig. 4 is a sectional detail view of the cellar showing the lubricant therein. Fig. 5 is a detail view of the follower and its actuating spring. 60 65

The same reference characters indicate the same parts in all the views. 70

Let A designate the regular frame having depending jaws A' in which the driver journal box B is located. This box has two depending parts B' between which the cellar C is located. The box B is provided immediately above the journal with the ordinary brass E. The upper extremity of the cellar is provided with a covering of wire gauze C' which is shaped to conform to the shape of the journal D. This cellar is provided with vertical side and end walls forming a receptacle for the lubricant cake F. This cake is hollowed out to conform to the shape of the wire gauze part C', and consequently to conform to the curve of the journal. Upon the face of the cake F opposite the journal, or upon the lower surface of the cake, is placed a follower G consisting of a plate of substantially the same area as the lubricant cake or slightly of less area, to enable the follower to move freely in the cellar. This follower G is acted on by a coiled spring, which is in turn held down against the follower with sufficient tension to operate the latter, by means of a plate I hinged to the journal box as shown at J, and having an up- 85 90 95

wardly turned lip or flange J', which engages the inner end of the cellar when the parts are in the operative position as shown in Figs. 1 and 2 of the drawing. The opposite end of the cellar is prevented from longitudinal movement on the journal by the hub of the wheel.

It will be observed that with my improved construction, the cake of lubricant is of substantially the same length as the journal to be lubricated.

The hinged plate I is held in place when the parts are in the operative position, by means of a bolt K passed through openings formed in the lower extremities of the parts B' of the journal box, and secured by a nut K'. The bolt K is passed through a spacing tube K², thus preventing the arms B' from being forced against the cellar to such an extent as to interfere with its freedom of removal from the journal box.

From the foregoing description it will be readily understood that the cellar C is readily removed from the journal box, by simply removing the bolt K, when the spring H will force the hinged part I downwardly and allow the cellar to be quickly removed. A new cake of lubricant may be placed therein and the cellar quickly returned to its position in the journal box. Quickness of removal and insertion or replacement in the journal box, is a matter of very great importance in a device of this class, and to this end, in my improved construction the cellar is of such width that it is allowed to move freely longitudinally, inwardly on the journal after the hinged plate I is unlocked by removing the bolt K. It will be seen by reference to Fig. 3 that as soon as the plate I is released by the removal of the bolt K, the said plate is thrown downwardly to its limit of movement, and the cellar C is then free to move inwardly and downwardly, permitting its quick and easy removal. This is an entirely different construction from a construction in which the cellar is so connected that the journal box with the cellar is only vertically movable and must be forced downwardly in a vertical direction only until it is released from the box. By reason of the lip J' of the plate I, it becomes practicable to make the cellar of such width that it can move as above stated after the locking plate I has been moved downwardly to the unlocked position.

Having thus described our invention, what we claim is:

1. The combination with a journal box of a locomotive or car wheel, of a cellar, mesh

covering applied to the cellar adjacent the journal, the cellar being adapted to hold a cake of lubricant which is placed directly therein, a follower located in the cellar below the cake of lubricant, a spring engaging the follower, and a plate hinged at its outer extremity to the journal box and having a short upwardly bent lip or flange adapted to engage the inner extremity of the cellar, and suitable means detachably connected with the journal box for holding the hinged plate in the closed position, the said plate being adapted to swing downwardly by the action of the spring to release the cellar when the means for holding the plate is detached, substantially as described.

2. The combination with a journal box, of a cellar located therein, a cake of lubricant located directly in the cellar, the latter being capable of moving longitudinally of the journal between the depending parts of the journal box, a follower located in the cellar and engaging the lubricant, a spring engaging the cellar, and a plate against which the spring bears, the said plate being hinged at its outer extremity and having a short upwardly projecting lip engaging the cellar at its inner extremity when in the locking position, and a removable bolt connected with the journal box for holding the hinged plate in the said position, substantially as described.

3. In mechanisms of the class described, the combination of a main box portion, a removable oil cellar, and a movable cellar retainer with upwardly extending flange lips at its forward end only for removably holding the oil cellar in position, substantially as described.

4. In mechanisms of the class described, the combination of a main box casting, a removable oil cellar, a swinging retaining block with upwardly extending flange lips at its forward end only for removably holding the oil cellar in position, and means for pivotally supporting said retaining block, substantially as described.

5. In mechanisms of the class described, the combination of a main box casting, a rectangular removable oil cellar provided with upwardly extending end and side walls, and a movable retaining block with upwardly extending flange lips at its forward end only for removably holding said oil cellar in position.

6. In mechanisms of the class described, the combination of a main box casting, a removable oil cellar provided with upwardly extending end and side walls, a swinging retaining block pivotally secured at its inner rear edge to the main box casting for remoy-

ably holding the oil cellar in position, and means at the forward portion of the journal box only for holding the forward end of the retaining block and thereby the oil cellar in
5 operative position, substantially as described.

7. In mechanisms of the class described, the combination of a main box casting, a removable oil cellar provided with upwardly extending outer walls, a swinging retaining
10 block pivotally supported in position and provided with upwardly extending flanged lip portions at its forward end only to prevent the removal of the oil cellar when the parts are in operative position, and means

for holding the parts in operative position, 15 substantially as described.

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

JOSEPH S. COATES.

Witnesses:

A. J. O'BRIEN,

DENA NELSON.

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

GEORGE F. HART.

Witnesses:

JNO. Q. MATTHEWS,

A. J. HOLINQUIST.