

DICKINSON & NELSON

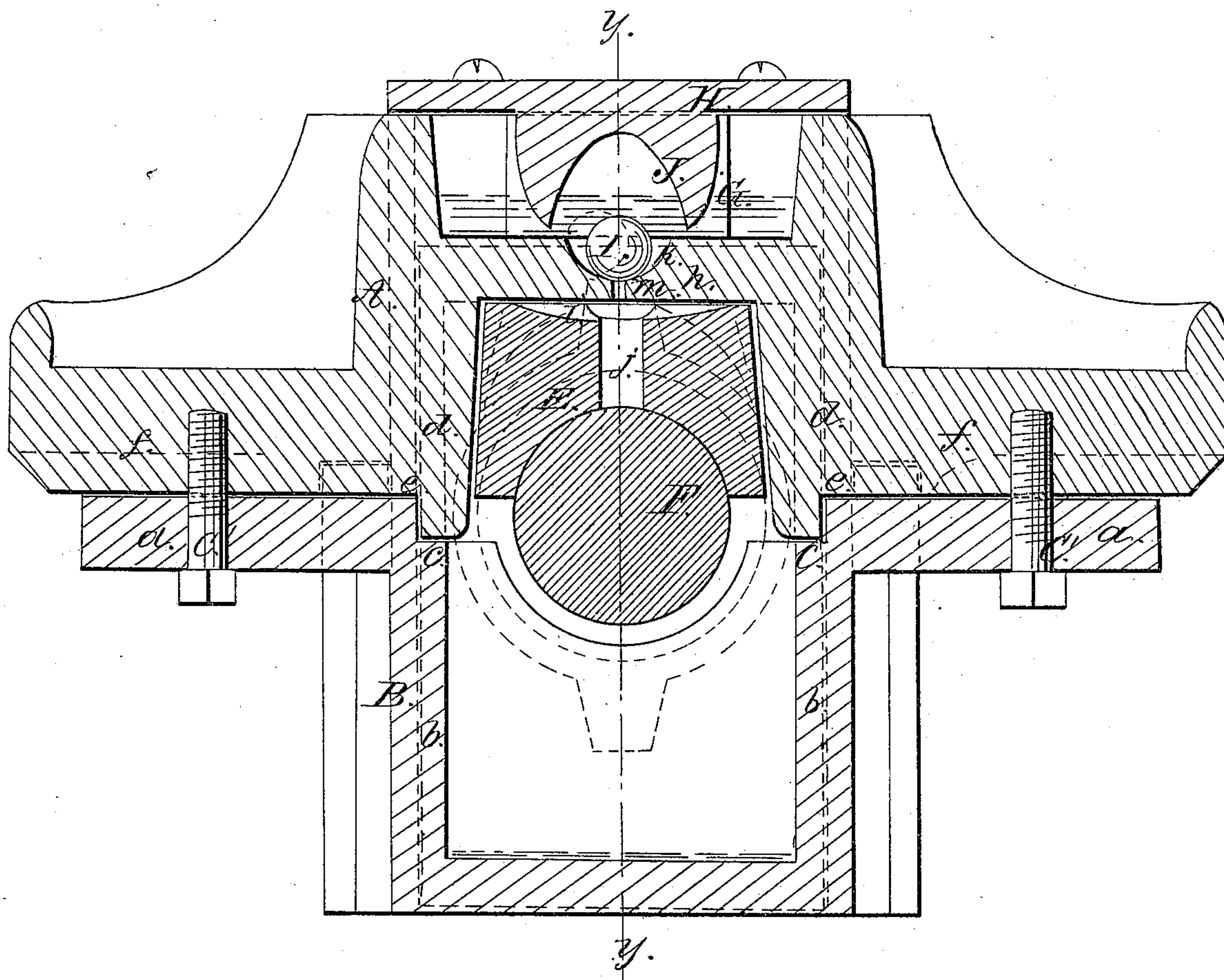
2 Sheets—Sheet 1

Car-Axle Box.

No. 44,407.

Patented Sept. 27, 1864.

Fig. 1.



Witnesses:

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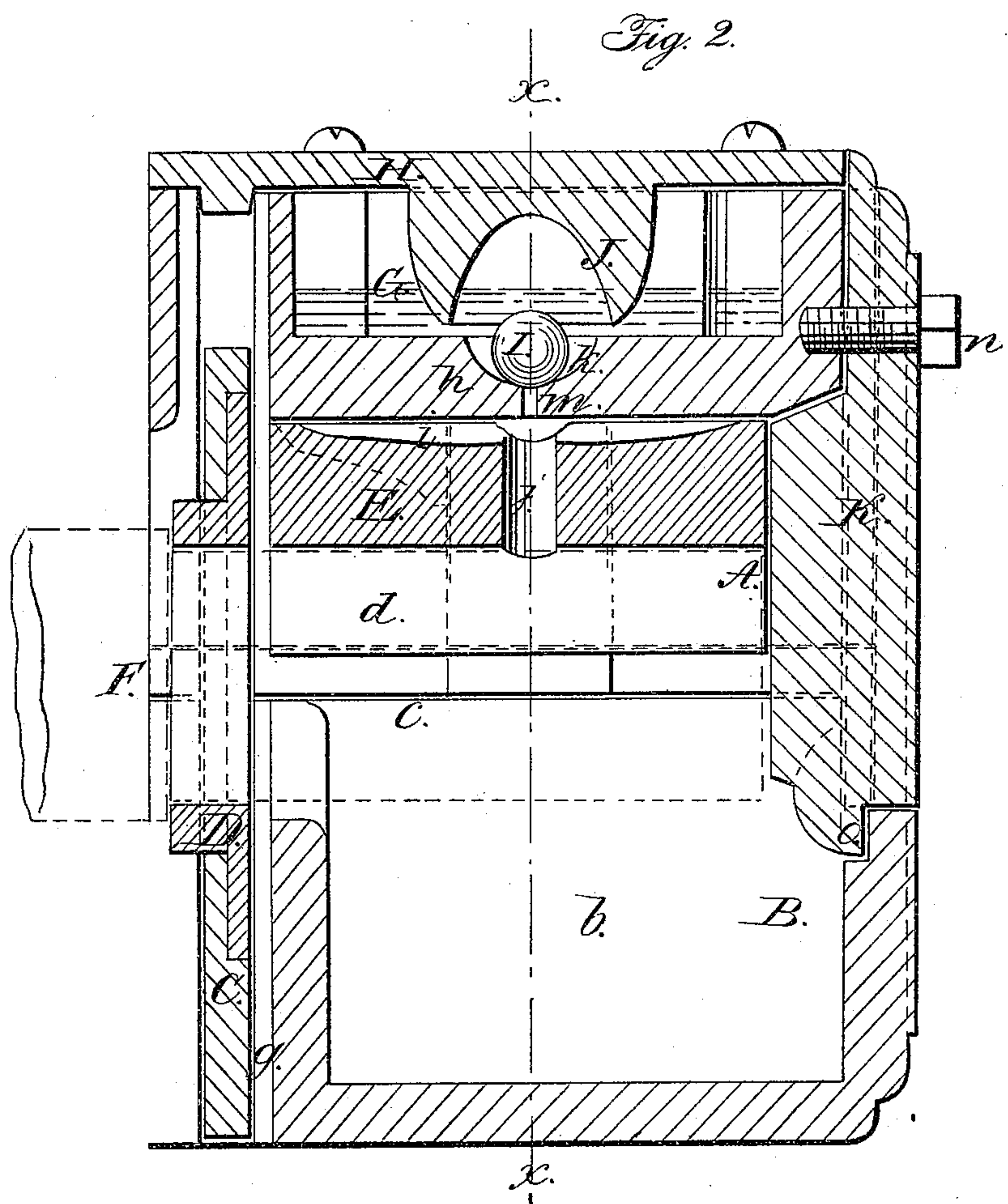
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UNITED STATES PATENT OFFICE.

E. S. DICKINSON AND WILLIAM D. NELSON, OF NEW YORK, N. Y.

IMPROVEMENT IN JOURNAL-BOXES.

Specification forming part of Letters Patent No. **44,407**, dated September 27, 1864; antedated September 18, 1864.

To all whom it may concern:

Be it known that we, E. S. DICKINSON and WILLIAM D. NELSON, both of the city, county, and State of New York, have invented certain new and useful Improvements in Journal-Boxes for the Axles of Railroad-Cars; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical section of our invention, taken in the line *x x*, Fig. 2; Fig. 2, a vertical section of the same, taken in the line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

This invention consists, first, in constructing and casting the box in two separate and distinct parts, and in such a manner as to admit of said parts being fitted together and secured by two bolts, which do not pass through the interior of the box, whereby the box, when the two parts are secured together, is rendered oil-tight, the waste of oil in the ordinary journal-boxes, caused by the leakage of the same through the bolt-holes, being entirely obviated.

The invention consists, secondly, in an improved packing to prevent the escape of oil from the box around the axle, and also to prevent the admission of dust into the box, said packing consisting of a metal plate provided with a bushing of soft metal to fit upon the axle, the plate being fitted loosely in grooves at the rear of the box, and arranged in such a manner as to admit of the box, under the wear of the journal, to settle freely, while the packing will remain fitted snugly on the axle without being subjected to any undue pressure or wear.

The invention consists, thirdly, in the self-operating lubricating-valve placed in an oil-chamber within or at the upper part of the box, and so constructed and arranged as to admit oil in suitable quantities down upon the journal, whereby the latter will always be supplied with pure oil, and much wear of the journal avoided.

To enable those skilled in the art to fully understand and construct our invention, we will proceed to describe it.

A B represent the two parts of the box, A being the upper and B the lower part. These two parts are cast separately, and the lower part, B, has an ear or horizontal projection, *a*, cast at two opposite sides, *b b*, and there is a recess in the upper edges of said sides to form a shoulder, *c*, at the inner surfaces of the sides *b b*, the shoulders extending the whole length of the sides *b b*, as shown in Fig. 2. The lower edges of the sides *d d* of the upper part, A, of the box have similar recesses cast in them to form shoulders *e e*, the latter being at the outer surfaces of the sides *d d*. The part A of the box has an ear or projection, *f*, cast at each side of it, and when the two parts of the box are in contact the ears or projections *f* rest upon the ears or projections *a*, and the lower edges of the sides *d d* of the upper, A, rest upon the shoulders *c* at the inner surfaces of the sides *b b* of the part B, while the upper edges of the sides *b b* bear against the shoulder *e* at the outer surfaces of the sides *d d* of the part A, the two parts being held firmly in contact by bolts *C*, passing through the ears or projections *a* into the ears or projections *f*. (See Fig. 1.) By this arrangement the two parts of the box will be firmly connected by an oil-tight joint, and without any apertures or openings through which oil can escape from the box. In the ordinary boxes, the parts of which are connected together by bolts passing through the box, oil is liable to escape around the bolts through the bolt holes—a contingency which cannot occur in our invention, as the connecting-bolts are at the outer side of the box. The ears or projections *f* of the upper part, A, of the box are at their upper sides, are of socket form, (see Fig. 1,) and receive the supports or pedestals of the car. At the rear of the box, in the inner surfaces of the sides *b d* of the two parts A B, there are vertical grooves *g g*, which receive the edges of a metal plate, *C*, said plate being fitted loosely in the grooves *g*. In this plate *C* there is made an opening which receives an annular collar or bushing, *D*, constructed of any soft metal or composition similar to that of which bearings for shafts are made. Brass or Babbitt metal would answer.

E is the bearing, which is placed within the upper part, A, of the box, and bears against the under side, *h*, of the top of the same, as shown

clearly in Fig. 2. The upper surface of the bearing is grooved both longitudinally and transversely, as shown at *i*, and has a vertical hole, *j*, made centrally through it, as shown in both figures. The journal F of the axle passes through the collar or bushing D, the plate C serving to prevent the passage of dust into the journal-box and the escape of oil therefrom, while the box is allowed to descend, under the wear of the bearing and journal, without at all affecting the plate C, which always remains loosely on the journal, the box being allowed to move vertically, on account of the plate C being fitted loosely in the grooves *g g'*. By this arrangement a durable and self-adjusting packing-plate is obtained at the rear end of the journal-box, and one that may be very readily repaired when necessary, for the collar or bushing D, when worn away, may be replaced by a new one with the greatest facility. The front side of the journal-box is provided with a door or plate, K, secured to it by a bolt, *n*, and lip or flange *o*. (See Fig. 2.)

In the top of the upper part, A, of the journal-box there is an oil-chamber, G, having a top plate, H, screwed closely down upon it, to prevent the admission of dust. The bottom of this oil chamber forms the top *h* of the portion of A of which the bearing E is placed, and in the upper surface of *h*, at its center, there is made a semi-spherical recess, *k*, in which a ball, I, is placed, the recess *k* being sufficiently large to admit of a certain degree of play or movement of the ball. At the center of the recess *k* a hole, *m*, is made through the bottom of the oil-chamber, said hole being in line with the hole *j* in the bearing E. (See both figures.) The under side of the top plate, H, of the oil-chamber is cast with a pendent socket, J, which is concentric with the recess *k* and retains the ball I therein, as will be understood by referring to both figures. The ball I performs the office of a valve, closing the hole *m* when the car is stationary; but when the car is in motion the ball or valve I

will have a lateral movement or play imparted to it, so as to admit of a gradual flow of oil down through the hole *m* into the grooves *i* in the upper surface of the journal F and through the hole *j* in the bearing to the journal F. By this arrangement it will be seen that the journal F will be gradually supplied with oil as required, and as the same oil is not used repeatedly or over and over, as is the case with the ordinary journal-boxes, the journal and bearing will not become worn or cut by impurities, as is now the case to a greater or less extent. The oil passes or drops from the journals F into the lower part, B, of the box, and cotton waste, or other material may be placed in B to absorb the oil which drops from the journal. It is not designed, however, to have this waste come in contact with the journal.

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

1. The employment or use, in a journal-box for car-axes, of an oil-chamber provided with a valve, I, so constructed and arranged that said valve will, under the motion of the car, oscillate or roll so as to intermittingly open and close the oil-passage and gradually supply the journal with oil and keep it in a properly lubricated state.

2. The combination of the two parts A B, projecting ears or flanges *a f*, screws *U'*, and shoulders *c* and *e*, when the said parts are constructed and arranged as herein described, and operate in the manner and for the purposes specified.

3. The packing-plate C, fitted in the rear of the journal-box and provided with the collar or bushing D, substantially as and for the purpose herein set forth.

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Witnesses:

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