

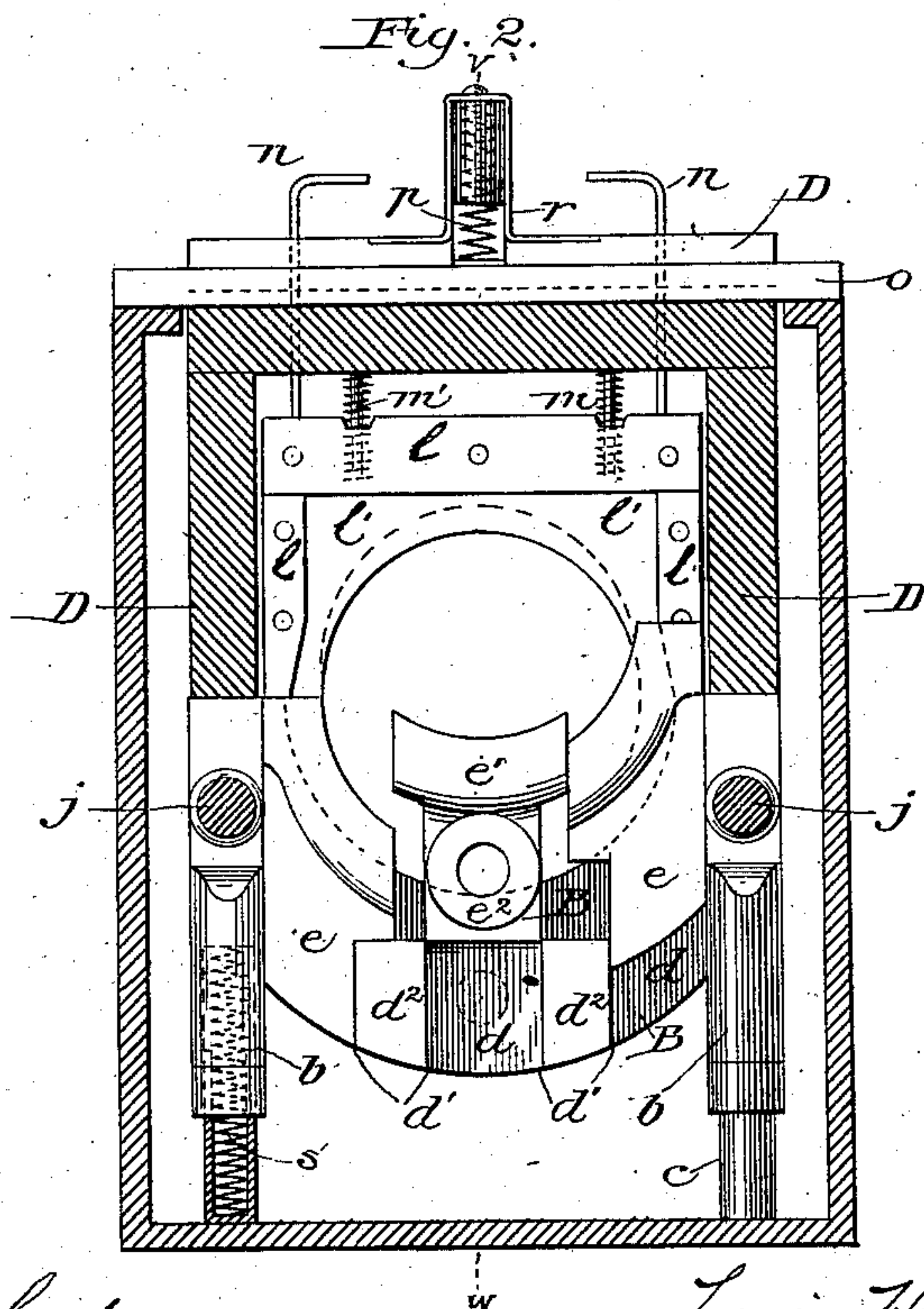
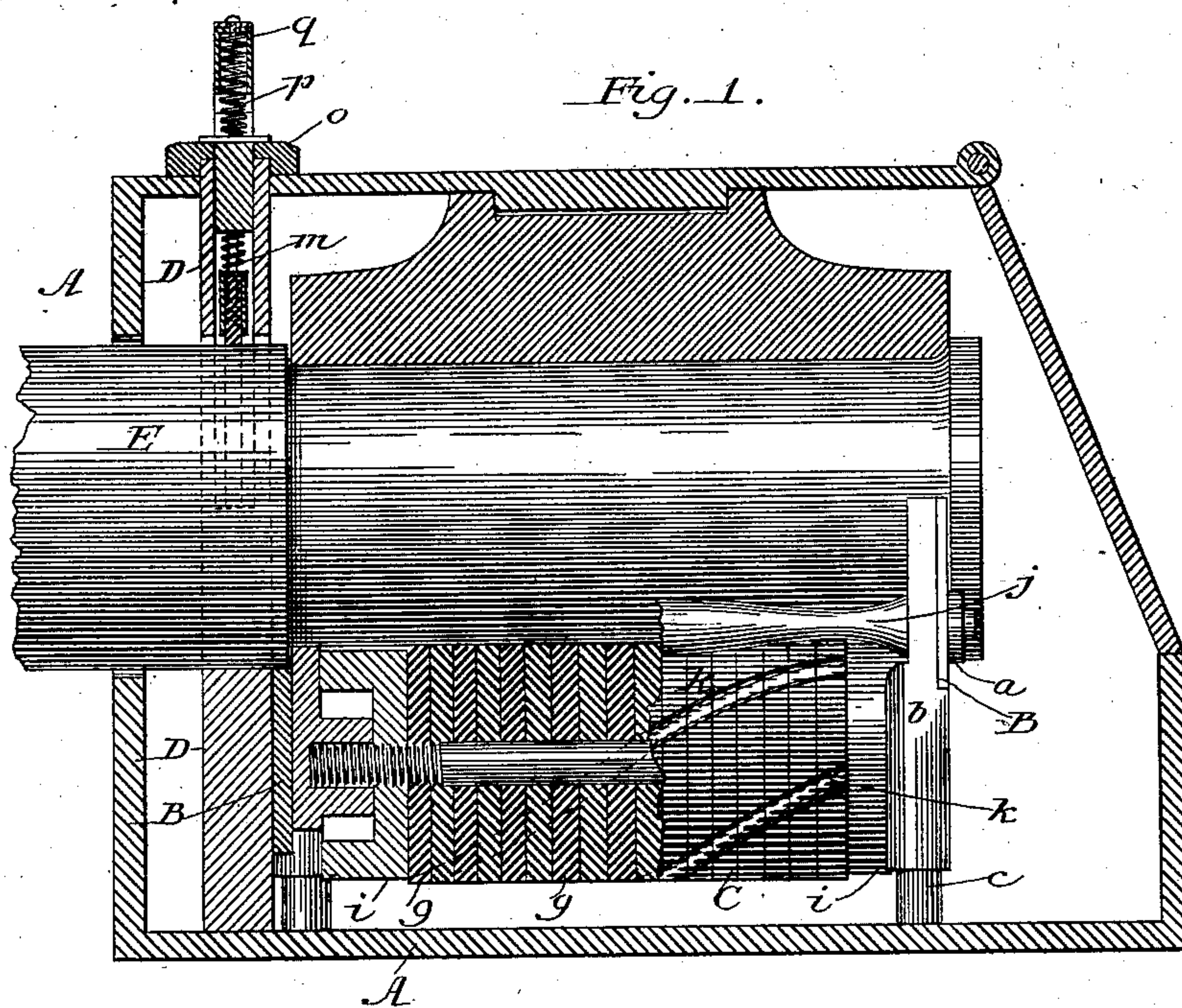
(No Model.)

L. H. TOURVILLE.

CAR AXLE BOX.

No. 259,948.

Patented June 20, 1882.



Witnesses:

Frank Blanchard  
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Inventor:

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# UNITED STATES PATENT OFFICE.

LOUIS H. TOURVILLE, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-THIRD TO  
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## CAR-AXLE BOX.

SPECIFICATION forming part of Letters Patent No. 259,948, dated June 20, 1882.

Application filed January 27, 1882. (No model.) Patented in Canada October 19, 1881, No. 13,566.

*To all whom it may concern:*

Be it known that I, LOUIS HONORÉ TOURVILLE, a subject of the Queen of Great Britain, formerly residing at St. Henri, Province of Quebec, Dominion of Canada, but now of Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Car-Axle Boxes; and I do hereby declare the following to be a full, clear, and exact description of the same, sufficient to enable others skilled in the art to make, construct, and use the said improvements or invention.

The objects of the invention are, first, to improve the lubrication of car-axle journals, so as to avoid the use of cotton waste or other packing, and the consequent danger from the ignition of such packing; second, to check the entrance of dust, grit, &c., into and against the journal-bearings, and as well to check the escape of lubricant onto the trucks or parts of the car contiguous to the journal.

To these ends my invention consists of certain improvements in the structure of car-axle boxes, substantially as hereinafter set forth, and particularly defined in claims.

Referring to the drawings which accompany and form a part of this schedule, and wherein like letters of reference denote like parts, Figure 1 shows a longitudinal section of axle-box and journal on lines *vw* of Fig. 2, a portion of the lubricating-roll and its bearing being in elevation. Fig. 2 shows a transverse section of the axle-box with journal and lubricating-cylinder removed, the movable journal-bearing for the latter being somewhat elevated from its seat and the check-plate in part broken away to show its interior structure.

Within the usual box or casing, A, and resting on its bottom plate, is an upright removable frame consisting of two curvilinear end plates, B B, which are firmly joined together at opposite points by the side rods, *j j*, said rods being screw-threaded and provided at one end with set-nuts *a a*, whereby the several parts may be securely held or taken apart, as desired.

Attached to or made in piece with the plates B B, and at each lower corner thereof, is an enlarged tubular standard or leg, *b*, which receives within its cylindrical cavity a coiled

spring, *s*, and as well a cup-like rest or support, *c*, that encompasses said spring and is free to slide within the tubular leg. By this arrangement the entire frame rests primarily upon the springs *s*, and so is adapted to yield to any irregularities of pressure, while the springs, being retained within the tubular legs *b* and cups *c*, are not displaced by any sudden movement or jar to which the frame may be subjected.

On the inner face of each of the end plates, B B, seats or recesses are formed, having dovetail edges and shoulders wherein fit and rest corresponding parts of the removable side pieces, *e*, and central section-piece, *e'*, said central piece being suitably perforated to receive the journal of the lubricating cylinder or roll C, and as well provided with the projection *e<sup>2</sup>* to afford a better bearing for the journal aforesaid. It is manifest that in making these several pieces (brasses) removable they can be readily replaced when broken or worn, and that the lubricating-roll can be reversed end for end or a new one substituted at will.

The lubricating-roll C consists preferably of a series of rings, *g g*, of felt, leather, cloth-tufted carpet, vulcanized fiber, or the like, arranged transversely upon the axle-rod *h*, and firmly clamped together between the retaining-plates *i i*, the screw-threaded perforations of which engage with like threaded portions of the rod *h*. A series of spiral grooves, *k k*, is cut peripherally on the edges of the rings to aid in elevating the lubricant in which roll C is immersed, as hereinafter described.

Through an opening in the upper part of the casing A is inserted a rectangular check-plate, D, the lower edge of which rests on the bottom of the box, said check-plate being transversely perforated, so as to allow for the free passage of the car-axle journal, which latter, when in position, fits snugly to the under curve of the perforation in the check-plate, while within the box said journal, substantially throughout its length, bears lightly upon the face of the lubricating-roll C, the springs *s* in the legs of the frames being of the tension requisite to insure such contact. The upper portion of the check-plate D is recessed or hollowed out to receive a slide, *l*, fitted with a leather or like strip, *l'*, of which the lower



edge is curved to conform closely to the journal E. Springs *m* on the stems *m'* bear against the slide *l* and the under side of the closed top of the check-plate, and so force the strip  
5 *l'* into close contact with the journal.

Two hand-rods, *n n*, attached to the slide *l* and projecting through the closed top of the check-plate, allow for the temporary withdrawal of the slide and attached strip within  
10 the recess whenever it is desired to remove the journal E from its position in the box.

A plate, *o*, rectangularly recessed to admit the check-plate D, rests upon the top of the box or casing A and sustains a spring, *p*,  
15 which is housed within an inverted cup, *q*, made rigid with the closed top of the check-plate by means of the bent strap *r*. The recoil of said spring *p* tends manifestly to lift the check-plate D, and in consequence keeps  
20 the lower curve of the perforation in said plate close against the journal E.

It is plain that by the construction of the several parts as described a tight joint is formed entirely around the journal, so that  
25 dust cannot enter nor the lubricant escape from the box, and yet the axle be free to adjust itself to sudden jars or strains.

The several parts being constructed and arranged as heretofore described, a quantity of  
30 oil or like lubricant is poured into the box A until the lubricating-roll C is about one-half submerged. It follows, then, that any rotation of the journal E causes corresponding rotation of the roll C, with which it is in contact,  
35 so that fresh portions of the lubricant, in the nature of a thin film, are being constantly elevated from the bottom of the box and distributed upon the journal over substantially the length in contact with the brass, such action  
40 continuing until the journal ceases to rotate or the lubricant falls so low as to no longer submerge the roll. The need of cotton waste or of like packing is avoided, the lubricant is used with minimum loss and is effectively distrib-  
45 uted, the necessity of refilling the box can be ascertained upon quick inspection, and there is practically no chance for a destructive heating of journal brasses or box, which the ignition of the cotton waste in the old forms of box was  
50 very apt to cause. When the rings *g g* of the roll C become worn they may be readily replaced, and by adjustment of the retaining-plates *i i* the rings can, within limits, be compressed into contact with the journal E. The  
55 check-plate D effectually excludes the dust, grit, &c., so that there is no destructive cutting of brasses or journal, and as well prevents the escape of lubricant, which, in the ordinary axle-box, causes unsightly stains upon the trucks,  
60 the frame-work, and the axle-boxes.

I am aware that it is not broadly new to set

the journals of rolls used to lubricate car-axle bearings in removable blocks or supports; but, so far as advised, said blocks were directly sustained upon recoil-springs prior to my in-  
65 vention, were apt to be thrown out of place by sudden jars, and were not related to the remaining parts of the frame to sustain the lubricating-roll, as in the invention hereinbefore detailed.

I am aware that check-plates have been used in connection with car-axle boxes to exclude dust and retain oil; but in these the plate has generally been made of upper and lower sections to encompass the axle, and not entire, as  
75 in my device, nor with an interior slide, nor yet with an outer plate resting upon the car-axle box, whereby, in combination with the check-plate, the latter may be held snugly against the axle.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a car-axle box, a removable frame to sustain the lubricating-roll, said frame having  
85 recessed end plates and separable section-pieces which directly fit and fill the recesses and support the journals of the roll, substantially as described.

2. In a car-axle box, a removable frame to  
90 sustain the lubricating-roll, said frame having recessed end plates and separable central section-pieces, *e'*, and side pieces, *e*, which directly fit and fill the recesses, substantially as set forth.

3. In a car-axle box, the combination, with the recessed check-plate, of a movable slide located within the recess and adapted to bear against the body of the car-axle, substantially  
100 as described.

4. In a car-axle box, the combination of the recessed check-plate D with the movable slide *l*, located within the recess and provided with the rods *n n*, substantially as set forth.

5. In a car-axle box, the combination, with  
105 the check-plate D, made in manner substantially as described, of the recessed plate *o*, which rests upon the exterior of the box, and the sustaining-spring *p*, all substantially as set forth.

6. In a car-axle box, the combination, with the check-plate D, slide *l*, and spring *m*, of the plate *o* and spring *p*, substantially as set forth.

In witness whereof I have hereunto set my hand this 19th day of January, A. D. 1882.

LOUIS HONORÉ <sup>his</sup> × TOURVILLE.  
mark.

Witnesses:

JAMES H. PEIRCE,  
NOAH PAQUETTE.