No. 803,747. PATENTED NOV. 7, 1905.

A. G. ELVIN.

CAR AXLE BOX.

APPLICATION FILED MAY 13, 1905.

FIG. 1.

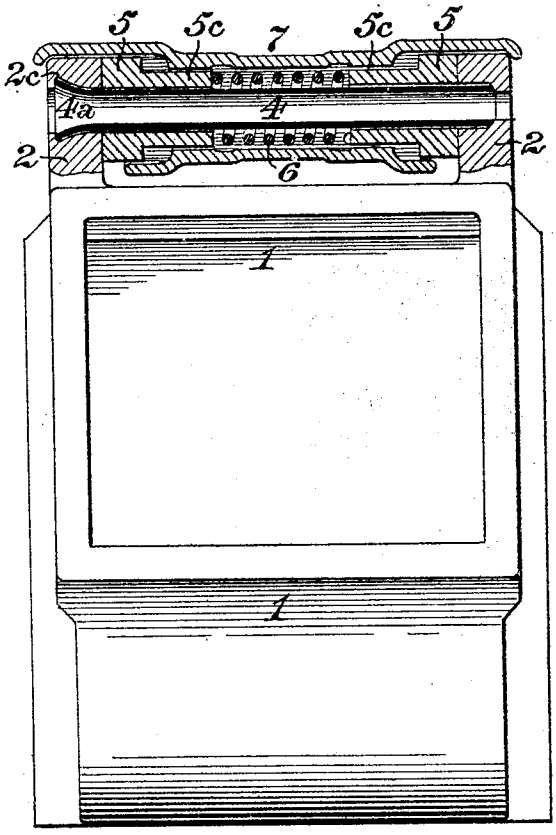


FIG. 2.

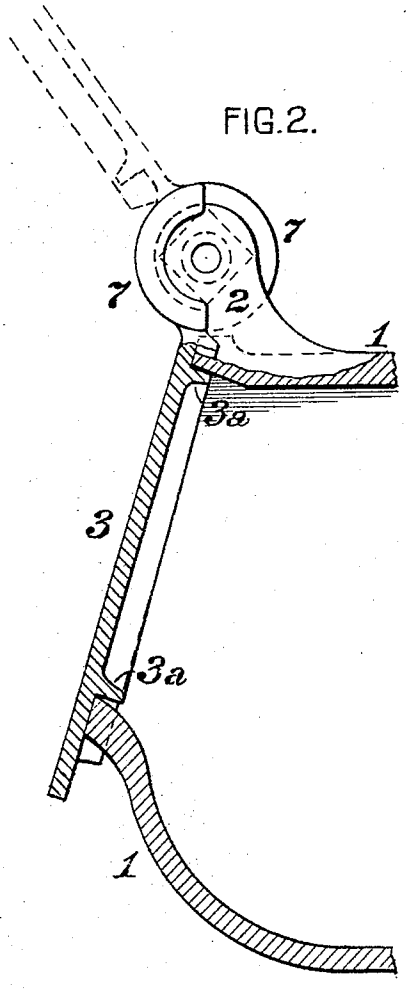


FIG. 3.

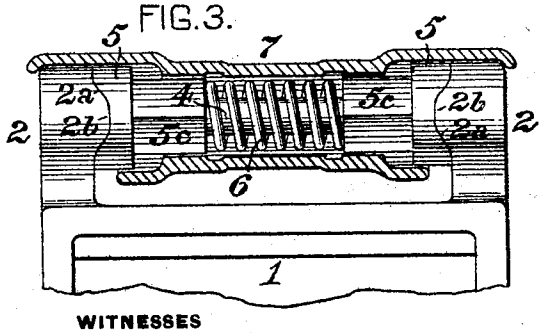


FIG. 5.

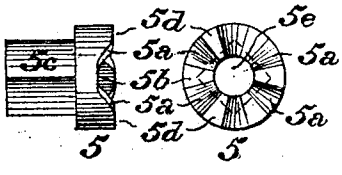


FIG. 4.

WITNESSES

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CAR-AXLE BOX.

No. 803,747. Specification of Letters Patent. Patented Nov. 7, 1905.

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To all whom it may concern:

Be it known that I, ALBERT G. ELVIN, of Franklin, in the county of Venango and State of Pennsylvania, have invented a certain new and useful Improvement in Car-Axle Boxes, of which improvement the following is a specification.

My invention relates to axle or journal boxes for railroad-car trucks having self-closing lids; and its object is to provide an axle-box of such type which shall be of simple, substantial, and inexpensive construction, in which the loss of the lid, looseness, and the entrance of dust shall be effectually prevented, and the lid be made capable of being opened or raised higher than in prior constructions, and of standing in desired position after being raised to a determined degree.

The improvement claimed is hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a front view, partly in section, of a car-axle box embodying my invention; Fig. 2, a partial vertical longitudinal section through the same; Fig. 3, a front view, partly in section, illustrating the relation of the abutting faces of the box-lugs and the dogs which engage therewith, the parts being shown in the positions occupied when the lid is closed; Fig. 4, a face view of one of the dogs, and Fig. 5 a side view of the same.

In the practice of my invention I construct an axle or journal box 1, which is provided with a vertical lug 2 on its top at each side of its front face and which, except as to the specific form and location of its lugs 2, may be of the Master Car-Builders' standard or any other known and preferred type. Diametrically opposite inclines 2^a are formed upon the inner sides of the lugs 2—that is to say, the sides nearer the vertical longitudinal plane of the box—each of said inclines being of segmental form and extending from the inner side of the lug to an upper flat bearing-face 2^b parallel therewith.

A flat lid 3, having flanges 3^a, fitting within the opening of the front of the box, closes said opening when shut down, as shown in Fig. 2, and is pivoted to the box by a tubular pivot-pin 4, which fits in the box-lugs 2, and is secured in position therein by a head 4^a, formed by outwardly expanding the metal at and adjoining one end of the pin into a conical recess 2^c in the adjacent box-lug 2, having an end wall against which the head abuts. In order to combine lightness with strength, as well as to admit of the ready formation of a head on the pin 4, it is made of a light steel tube, seamless drawn tubing being preferred, to obviate liability to splitting in the turning over of the head.

Under the above construction it will be seen that the pivot-pin will be effectually prevented from working out or being accidentally or wrongfully detached, and therefore that neither the pin nor the lid can by any possibility be lost in service, the substantial practical value of which result will be apparent to all who are familiar with the operation of railroad-cars.

In order that the box-lid may be self-closing and be held in either open or closed position as desired, the lid is coupled to the pivot-pin through the intermediation of two dogs 5, each of which engages with the inner face of one of the box-lugs and a spring 6, by which the faces of the dogs and of the box-lugs are maintained in engagement. The dogs 5 are provided with central cylindrical bores 5^e, which fit freely on the pivot-pin 4, and with squared stems 5^e, which fit and are adapted to slide longitudinally in corresponding sockets adjacent to the ends of a casing or tubular lug 7, formed upon the top of the box-lid and extending for equal distances on opposite sides of the central plane thereof. The spring 6, which surrounds the middle portion of the pivot-pin 4, abuts against the inner ends of the stems 5^e of the dogs and acts with a constant tendency to maintain their outer faces in contact with the adjoining inner faces of the box-lugs 2.

The outer faces of the dogs 5 are formed similarly to the inner faces of the box-lugs, so as to engage therewith, with the capacity of rotation with the lid on the pivot-pin 4 when the lid is raised or lowered. To this end diametrically opposite inclines 5^a, the inclination of which corresponds with that of the inclines 2^a of the box-lugs 2, are formed upon the outer face of each of the dogs 5, said inclines extending between flat lower bearing-faces 5^b and flat upper bearing-faces 5^d, which flat faces normally abut on the upper flat faces 2^b and the alternated lower faces of the box-lugs, respectively.

In the raising of the box-lid 3 the dogs 5 by reason of the engagement of their squared stems 5^e with the corresponding sockets of the casing 7 at the top of the lid rotate with the lid upon the pivot-pin 4, and their inclines slide over the corresponding inclines

of the box-lugs 2, thereby moving the dogs inwardly on the pivot-pin and compressing the interposed spring 6, by the tension of which the dogs are thereafter forced outwardly and the lid is closed and held closed when released. It will be seen that by reason of the alternated inclined and flat surfaces of the abutting faces of the dogs and the box-lugs long wearing-surfaces are presented when the spring which acts upon the dogs is under its maximum tension, and the liability to wear and looseness of the working parts is correspondingly minimized.

The range of swinging movement of the lid upon the pivot-pin which is permitted by the double inclines of the abutting faces of the box-lugs and dogs is such that the lid may be raised to a higher position than in prior constructions of the same general type, and the lid will, after being raised about four inches, stand in any position.

I claim as my invention and desire to secure by Letters Patent—

1. The combination of an axle-box having lugs on its top at each side of its front face, a lid adapted to cover the front opening of the box and having a tubular lug on its top, and a pivot-pin passing freely through the lug of the lid and having a conical head fitting in, and abutting against the end wall of, a corresponding recess in one of the lugs of the box.

2. The combination of an axle-box having lugs on its top on each side of its front face, a lid adapted to cover the front opening of the box and having a tubular lug on its top, a pivot-pin passing freely through the lug of the lid and fixed in the lugs of the box, dogs fitting freely on the pin and having squared stems engaging corresponding sockets in the lug of the lid, there being coöperating inclines on the outer faces of the dogs and the adjacent faces of the lugs of the box, and a spring interposed between and bearing on the inner ends of the dogs.

3. The combination of an axle-box having lugs on its top on each side of its front face, a lid adapted to cover the front opening of the box and having a tubular lug on its top, a pivot-pin passing freely through the lug of the lid and fixed in the lugs of the box, dogs fitting freely on the pivot-pin and having squared stems engaging corresponding sockets in the lug of the lid, there being coöperating engaging surfaces on the adjacent faces of the dogs and the lugs of the box, composed of alternated inclines and flats, and a spring interposed between and bearing on the inner ends of the dogs.

4. A dog for self-closing axle-box lids having a central cylindrical bore, a squared stem projecting from one of its ends, and a cam-face composed of alternated inclined and flat surfaces on its opposite end.

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Witnesses:
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