

J. F. O'CONNOR.
JOURNAL BOX AND LID FOR RAILWAY CARS.
APPLICATION FILED JAN. 11, 1909.

1,003,405.

Patented Sept. 12, 1911.

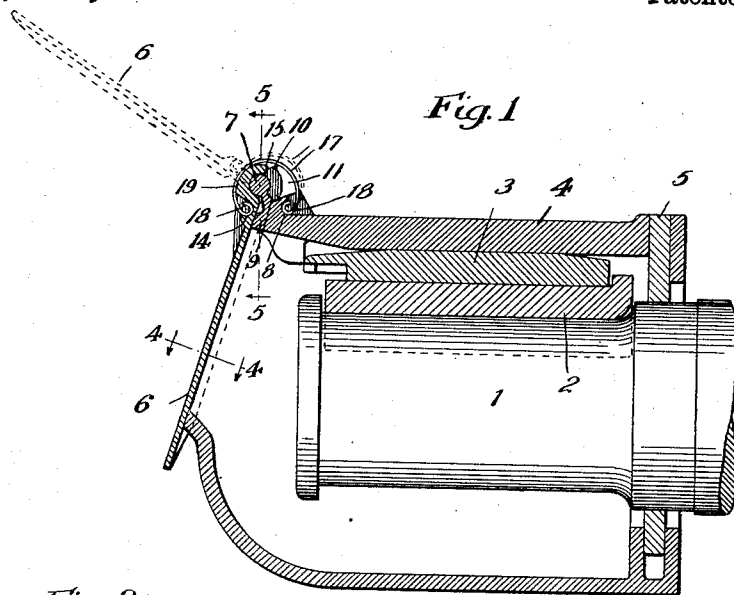


Fig. 2

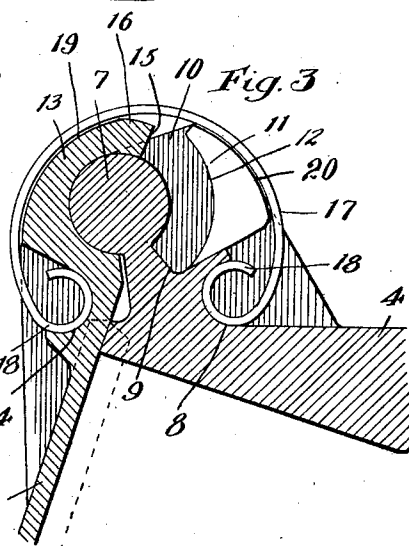
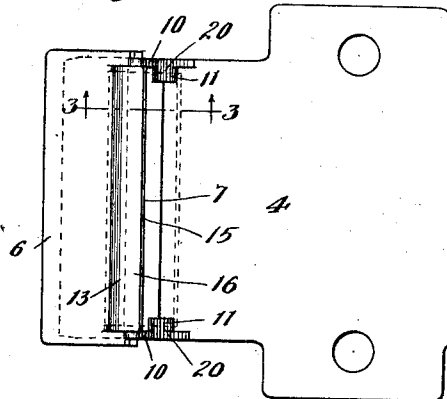


Fig. 3

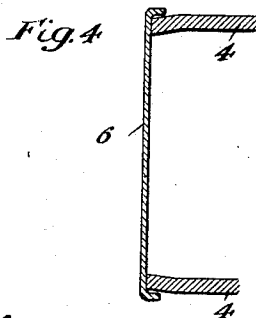


Fig. 4

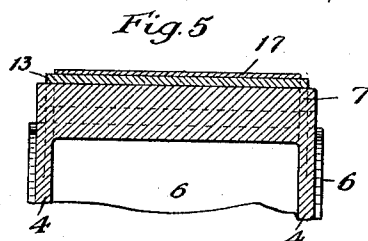


Fig. 5

Witnesses:

Wm. Geiger
A. M. Munday.

Inventor:
John F. O'Connor

By Munday, Darts, Adcock & Clarke.

Attorneys

UNITED STATES PATENT OFFICE.

JOHN F. O'CONNOR, OF CHICAGO, ILLINOIS.

JOURNAL-BOX AND LID FOR RAILWAY-CARS.

1,003,405.

Specification of Letters Patent.

Patented Sept. 12, 1911.

Application filed January 11, 1909. Serial No. 471,547.

To all whom it may concern:

Be it known that I, JOHN F. O'CONNOR, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Journal-Boxes and Lids for Railway-Cars, of which the following is a specification.

My invention relates to improvements in journal boxes for railway cars.

The object of my invention is to provide a journal box and lid of a simple, efficient and durable construction; in which the lid will be tightly and securely held closed by the spring both at its hinge end and at its free end, so that all rattling and wear of the lid on the journal box by the jarring motions of the car and consequent speedy destruction will be prevented; which may be opened as required without causing undue strain upon the spring; and in which the spring itself will serve as a housing or covering for the hinge members of the journal box and lid as well as to hold the lid in its opened and closed position; and in which also the lid may automatically close when the car is in motion in case it should have been accidentally left open.

My invention consists in the means I employ to practically accomplish this object or result. That is to say, it consists in a journal box having a hinge member, preferably a trunnion, at its outer upper edge, and provided also with a spring seat or hook near the axis of said trunnion, in combination with a lid having a hinge member, preferably a segmental socket, and provided also with a spring seat or hook adjacent to said hinge member and a spring fitting at one end in the spring seat on the journal box and at its other end on the spring seat on the lid and surrounding and embracing or covering the hinge members of the journal box and lid.

It further consists in connection with these parts, in providing the hinge members of the journal box and lid with inter-engaging stops or shoulders to limit the opening movement of the lid and also with guard wings or shoulders to prevent the lid from being forcibly disengaged from the journal box by using the lid itself as a lever for its own removal.

My invention further consists in the novel construction of parts and devices and

in the novel combinations of parts and devices herein shown and described and more particularly specified in the claims.

In the accompanying drawing forming a part of this specification, Figure 1 is a central, vertical, longitudinal section of a journal box and lid embodying my invention. Fig. 2 is a plan view. Fig. 3 is an enlarged detail vertical section on line 3—3 of Fig. 2. Fig. 4 is a detail section on line 4—4 of Fig. 1. Fig. 5 is a detail vertical section on line 5—5 of Fig. 1.

In the drawing, 1 represents a car or other axle journal, 2 the journal bearing, 3 the wedge, 4 the journal box, 5 the dust guard and 6 the lid of the journal box.

The journal box 4 is provided at its outer upper end or edge with an integral hinge member 7, preferably a trunnion, and also with a spring seat or hook 8 adjacent to the axis of said trunnion. The journal box is further provided with a stop shoulder 9 and with side flanges 10 having inwardly projecting curved guard lugs or shoulders 11, the curved face 12 of the guard lugs 11 being concentric with the curvature of the trunnion 7.

The lid 6 is furnished with an integral hinge member 13, preferably a segmental socket fitting the trunnion 7 on the journal box, and also with a spring seat or hook 14 adjacent to the axis of the trunnion to receive the other end of the spring. The hinge member 13 of the lid has a stop shoulder 15 adapted to engage the corresponding stop shoulder 9 on the journal box and thus limit the outward or opening movement of the lid. The hinge member of the lid has a curved guard acting lip 16 adapted to engage the guard lug 11 and thus prevent the lid from being forcibly pried or wrenched off the journal box by forcibly lifting on its lower or free ends as a lever.

The spring 17 is a broad, flat, circularly curved spring substantially equaling in width the width of the journal box and the lid or the hinge members thereof and covering and embracing the same as a housing. It is preferably provided at its extremities with curved ends or coils 18, 18 of substantially circular shape, which fit in the similarly curved spring seats 8 and 14 on the journal box and lid. The curvature of the spring is preferably substantially circular and it preferably somewhat snugly embraces the

hinge members of the journal box and lid so that the curved outer faces 19 (of the lid hinge member) and 20 (of the lugs 10 on the journal box) will serve as an internal support for the spring against damage or injury from external blows thereon. The journal box and lid and their hinge members and the spring thus mutually cooperate not only in holding the cover snugly and tightly closed on the journal box and in holding the cover in its open position while the journal box is being oiled or repacked, but also, in covering and housing the hinge members of the box and lid and thus excluding dust and cinders from the hinge members, but further in protecting the spring itself from injury.

When the lid is fully open as shown by the dotted lines in Fig. 1, the line joining the centers of the spring seats on journal box and lid approaches to but preferably does not quite coincide with the center of the trunnion about which the lid turns. In other words, the lid does not open quite far enough to permit the line joining the centers of the spring seats to pass the center of the trunnion, but approaches sufficiently near such center that the spring by reason of the friction between the hinge members of the box and lid will serve to hold the lid in its open position. This at the same time permits the lid to automatically close in case it should be accidentally left open when the train starts up, as the jarring motion of the car in connection with the gravity of the lid will speedily close it under action of the spring. As the spring seats on the box and lid for the ends of the curved spring are each closely adjacent to the center or axis about which the lid turns in opening and closing, I am enabled to employ an exceedingly strong spring without causing undue tension or strain thereon by turning the lid into its open position as the distance between the spring seats on the journal box and lid when the lid is open does not greatly exceed the distance between said spring seats when the lid is closed, as will be readily understood from Figs. 1 and 3 of the drawing. As the spring exerts a strong clamping pressure holding the lid firmly against the journal box both at its hinge end and at its opposite or free end, all rattling, jarring or other movements of the lid in respect to the journal box is absolutely prevented, and the lid is at all times held tightly closed against the journal box at both its upper and lower end edges and at its side edges; the lid thus entirely excludes dust and cinders from the journal box.

I claim:—

1. The combination with a journal box having an open inner end for the axle journal to project through and provided at its outer end with a hinge member and a spring

seat adjacent thereto and disposed radially therefrom, of a lid having a hinge member and a spring seat adjacent thereto and disposed radially therefrom, and a C-shaped spring fitting at its ends in said spring seats of the journal box and lid and surrounding and externally housing the hinge members of the journal box and lid, substantially as specified.

2. The combination with a journal box having an open inner end for the axle journal to project through and provided at its outer end with a hinge member and a spring seat adjacent thereto and disposed radially therefrom, of a lid having a hinge member and a spring seat adjacent thereto and disposed radially therefrom, and a C-shaped spring fitting at its ends in said spring seats of the journal box and lid, and surrounding and externally housing the hinge members of the journal box and lid, said hinge members of the journal box and lid having external curved faces engaging to support the spring on the inner face thereof, substantially as specified.

3. The combination with a journal box having an open inner end for the axle journal to project through and provided at its outer end with a hinge member and a spring seat adjacent thereto and disposed radially therefrom, of a lid having a hinge member and a spring seat adjacent thereto and disposed radially therefrom, and a C-shaped spring fitting at its ends in said spring seats of the journal box and lid, and surrounding and externally housing the hinge members of the journal box and lid, said hinge members of the journal box and lid having inter-engaging curved guards, substantially as specified.

4. The combination with a journal box having an open inner end for the axle journal to project through and provided at its outer end with a hinge member and a spring seat adjacent thereto and disposed radially therefrom, of a lid having a hinge member and a spring seat adjacent thereto and disposed radially therefrom, and a C-shaped spring fitting at its ends in said spring seats of the journal box and lid, and surrounding and externally housing the hinge members of the journal box and lid, said hinge members of the journal box and lid having inter-engaging stop shoulders, substantially as specified.

5. The combination with a journal box having an open inner end for the axle journal to project through and provided at its outer end with an externally projecting hinge trunnion, and a spring seat socket adjacent thereto and disposed radially therefrom, of a lid having at its end a segmental hinge socket engaging said trunnion on the journal box and provided with a spring seat socket adjacent to said hinge socket and dis-

posed radially therefrom, of a flat curved spring externally surrounding and embracing the hinge members of the journal box and lid, and provided with circular coils at its ends fitting and turning in said spring seat sockets of the journal box and lid, substantially as specified.

6. The combination with a journal box having an open inner end for the axle journal to project through and provided at its outer end with an externally projecting hinge trunnion, and a spring seat socket adjacent thereto and disposed radially therefrom, of a lid having at its end a segmental hinge socket engaging said trunnion on the journal box, and provided with a spring seat socket adjacent to said hinge socket and disposed radially therefrom, of a flat curved spring externally surrounding and embracing the hinge members of the journal box and lid, and provided with circular coils at its ends fitting and turning in said spring seat sockets of the journal box and lid, said journal box having a curved guard lug concentric with the trunnion, and said lid having a curved guard lip adapted to fit between the trunnion and the curved guard lug of the box when the lid is open, substantially as specified.

7. The combination with a journal box having an open inner end for the axle journal to project through and provided at its outer end with an externally projecting hinge trunnion, and a spring seat socket adjacent thereto and disposed radially therefrom, of a lid having at its end a segmental hinge socket engaging said trunnion on the journal box, and provided with a spring seat socket adjacent to said hinge socket and disposed radially therefrom, of a flat curved spring externally surrounding and embracing the hinge members of the journal box and lid, and provided with circular coils at its ends fitting and turning in said spring seat sockets of the journal box and lid, said journal box and lid having interengaging stop shoulders, substantially as specified.

8. The combination with a journal box having an open inner end for the axle journal to project through and provided at its outer end with an externally projecting hinge trunnion, and a spring seat socket adjacent thereto and disposed radially therefrom, of a lid having at its end a segmental hinge socket engaging said trunnion on the journal box and provided with a spring seat socket adjacent to said hinge socket and disposed radially therefrom, of a flat curved spring externally surrounding and embracing the hinge members of the journal box and lid, and provided with circular coils at its ends fitting and turning in said spring seat sockets of the journal box and lid, the hinge member of said lid having a curved outer face adapted by engagement with the

inner face of the spring to support and protect the spring from injury, substantially as specified.

9. The combination with a journal box having an open inner end for the axle journal to project through and provided at its outer end with an externally projecting hinge trunnion, and a spring seat socket adjacent thereto and disposed radially therefrom, of a lid having at its end a segmental hinge socket engaging said trunnion on the journal box and provided with a spring seat socket adjacent to said hinge socket and disposed radially therefrom, of a flat curved spring externally surrounding and embracing the hinge members of the journal box and lid, and provided with circular coils at its ends fitting and turning in said spring seat sockets of the journal box and lid, the hinge member of said lid having a curved outer face adapted by engagement with the inner face of the spring to support and protect the spring from injury, and said journal box having lugs furnished with curved outer faces adapted by engagement with the inner face of the spring to support and protect the spring from injury, substantially as specified.

10. The combination with a journal box having an open inner end for the axle journal to project through and provided at its outer end with an externally projecting hinge trunnion, and a spring seat socket adjacent thereto and disposed radially therefrom, of a lid having at its end a segmental hinge socket engaging said trunnion on the journal box and provided with a spring seat socket adjacent to said hinge socket and disposed radially therefrom, of a flat curved spring externally surrounding and embracing the hinge members of the journal box and lid, and provided with circular coils at its ends fitting and turning in said spring seat sockets of the journal box and lid, said spring serving to clamp the lid snugly against the journal box at its upper and lower ends and prevent rattling and other movements and wear, substantially as specified.

11. The combination with a journal box having an open inner end for the axle journal to project through and provided at its outer end with a hinge member and a spring seat adjacent thereto, of a lid having a hinge member and a spring seat adjacent thereto and disposed radially therefrom, and a C-shaped spring fitting at its ends in said spring seats of the journal box and lid and surrounding and externally housing the hinge members of the journal box and lid, said spring forcibly clamping the lid against the journal box at its upper and lower ends and preventing rattling or other movements and wear, substantially as specified.

12. The combination with a journal box

having an open inner end for the axle journal to project through and provided at its outer end with a hinge member and a spring seat adjacent thereto, of a lid having a hinge member and a spring seat adjacent thereto and disposed radially therefrom, and a C-shaped spring fitting at its ends in said spring seats of the journal box and lid, and surrounding and externally housing the hinge members of the journal box and lid, said hinge members of the journal box and lid having interengaging stop shoulders, said stops preventing the lid from opening far enough to cause a line joining said spring seats from passing the axis of the hinge, thus enabling the lid to automatically close when the car is under motion, while remaining open when the car is stationary, substantially as specified.

13. The combination with a journal box having an open inner end for the axle journal to project through and provided at its outer end with an externally projecting hinge trunnion, and a spring seat socket adjacent thereto and disposed radially therefrom, of a lid having at its end a segmental hinge socket engaging said trunnion on the journal box, and provided with a spring seat socket adjacent to said hinge socket and disposed radially therefrom, of a flat

curved spring externally surrounding and embracing the hinge members of the journal box and lid, and provided with circular coils at its ends fitting and turning in said spring seat sockets of the journal box and lid, said journal box and lid having interengaging stop shoulders, limiting the opening movement of the lid so that when the lid is open, the line joining the centers of said spring seat sockets approaches but does not pass the center of the trunnion to enable the lid to automatically close when the car is under motion, substantially as specified.

14. The combination with a journal box having an open inner end for the axle journal to project through and at its outer end furnished with a hinge member, of a lid furnished with a hinge member, and a curved spring conforming substantially in width to the width of the journal box and its lid and engaging the box at one end and the lid at the other, and surrounding and externally housing the hinge members of the lid and journal box, substantially as specified.

JOHN F. O'CONNOR.

Witnesses:

H. M. MUNDAY,
PEARL ABRAMS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."