

No. 822,760.

PATENTED JUNE 5, 1906.

J. S. PATTEN.
CONVEX JOURNAL BOX AND DUST GUARD.
APPLICATION FILED AUG. 17, 1904.

2 SHEETS—SHEET 1.

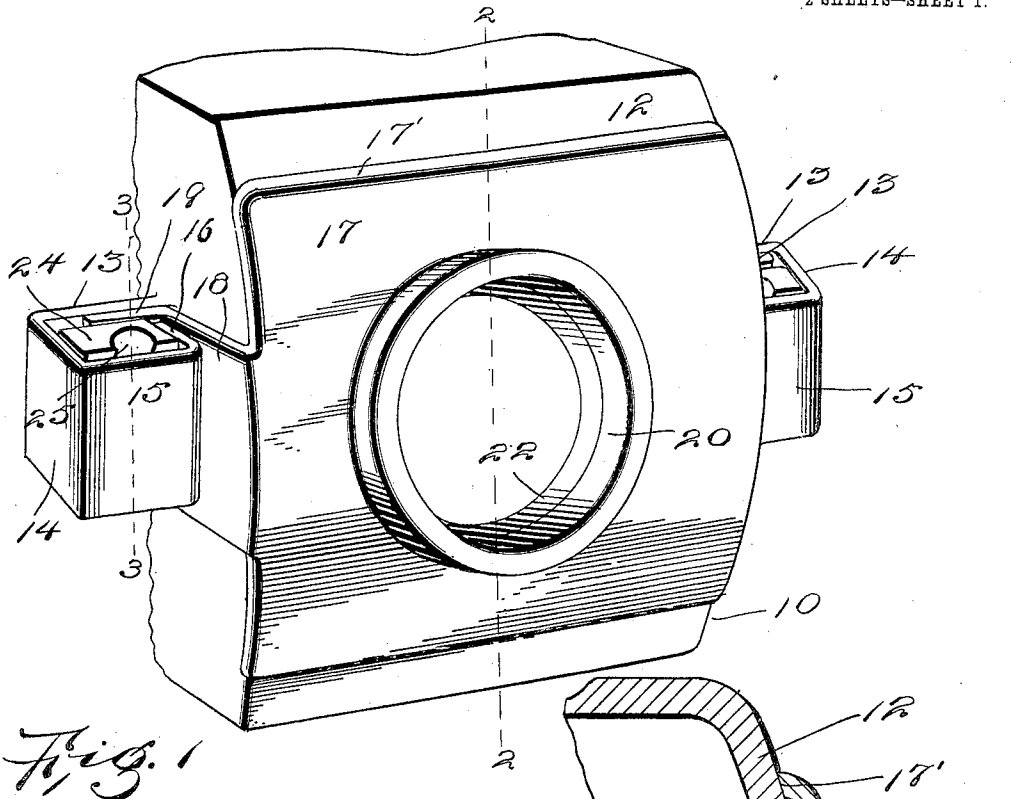


Fig. 1

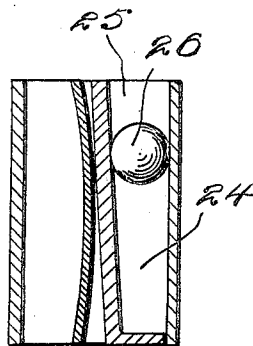


Fig. 3.

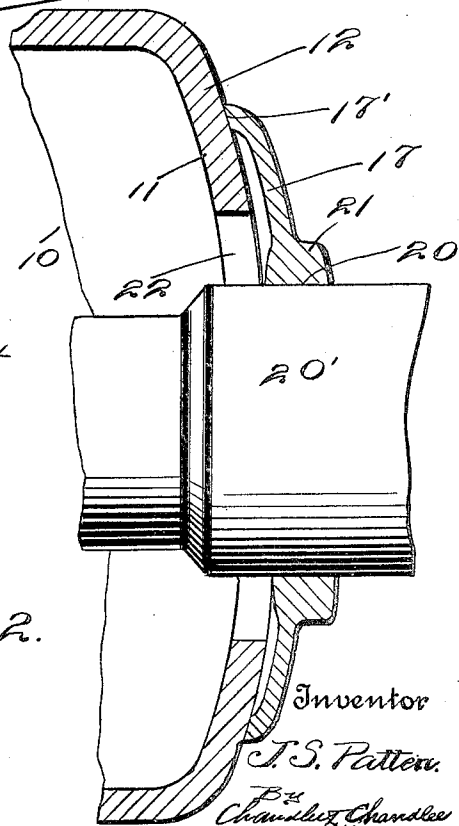


Fig. 2.

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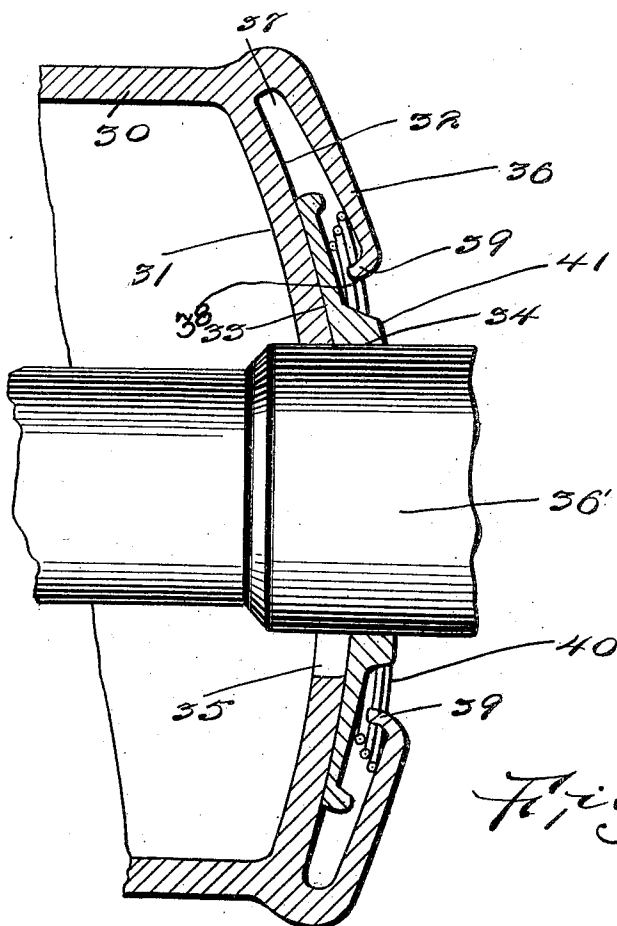


Fig. 5.

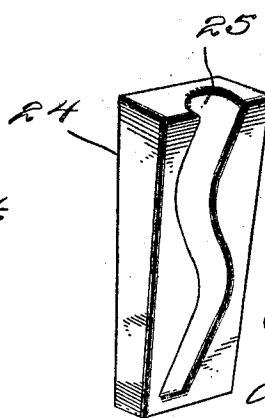


Fig. 4.

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UNITED STATES PATENT OFFICE.

JAMES S. PATTEN, OF BALTIMORE, MARYLAND, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO BALTIMORE JOURNAL BOX COMPANY, OF BALTIMORE, MARYLAND, A CORPORATION OF MARYLAND.

CONVEX JOURNAL-BOX AND DUST-GUARD.

No. 822,760.

Specification of Letters Patent.

Patented June 5, 1906.

Application filed August 17, 1904. Serial No. 221,041.

To all whom it may concern:

Be it known that I, JAMES S. PATTEN, a citizen of the United States, residing at Baltimore, State of Maryland, have invented certain new and useful Improvements in Convex Journal-Boxes and Dust-Guards; and I do hereby 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.

This invention relates to railway journal-boxes and dust-guards therefor, the object of the invention being to provide an outside guard for the inner end of the journal-box, and, further, to provide a construction wherein the shape will be distinguished from that illustrated in my copending application, filed August 17, 1904, Serial No. 221,040, and, further, to provide a construction such that the guard-plate will be supported at least in part by the box.

It is common to support the dust-guard plate upon the axle, but constant rotation of the axle in the plate wears away the upper face of the opening through which the axle passes and a corresponding space is left between the lower portion of the face of the opening and the bottom of the axle for ingress of dust. The wear is of course proportional to the friction and the friction is proportional to the weight of the plate upon the axle. It is therefore evident that if the weight of the guard-plate is supported partly by the box the wear of the plate on the axle will be decreased and the life of the plate will be correspondingly lengthened.

A further object of the invention is to provide a simple and efficient means for holding the guard-plate with a dust-proof joint close against the outer face of the inner end of the journal-box, while permitting of movement of the guard-plate over said face as it is shifted by movement of the journal-box with respect to the journal, and, further, to provide means which will permit of ready application and removal of the guard-plate. Other objects and advantages of the invention will be understood from the following description.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several

views, Figure 1 is a perspective view showing the inner end portion of a journal-box and a dust-guard plate embodying the present invention. Fig. 2 is a section on line 2 2 of Fig. 1. Fig. 3 is a section on line 3 3 of Fig. 1. Fig. 4 is a detail perspective view of the wedge. Fig. 5 is a view similar to Fig. 2, showing a different means for holding the guard-plate in position.

Referring now to the drawings, there is shown a portion of the journal-box 10, the inner end wall 11 of which is bowed outwardly, so that the inner end face 12 is convex, the curvature of the wall 11 being in a vertical plane only. At the sides of the box 10 are formed the integral guide-flanges, which extend first outwardly at right angles to the side faces of the box, as shown at 13, then rearwardly in the direction of the inner end of the box, as shown at 14, then toward the sides of the box, as shown at 15, parallel with the portions 13, and then inwardly toward the portion 13, as shown at 16, and parallel with the portions 14, so that between the portions 14, 15, and 16 there is formed a guide to receive a wedge, as hereinafter described.

In connection with the journal-box there is employed a dust-guard plate 17, which is curved or bent to correspond to the face 12 and which has at its edge a continuous flange 17', which is shaped to fit snugly and continuously against the face 12. The lateral ends of the plate 17 are extended forwardly at right angles to the plate, as shown at 18, and then outwardly, as shown at 19, parallel with the central or body portion 17 of the plate. The proportions of the plate 17 and its wings 19 are such that the plate may be lowered into place with its flange 17' close against the face 12, its portions 18 in close relation to the side faces of the box 10, and with its wings 19 between the portions 13 and 15. In the center of the plate 17 is an opening 20 to receive the journal 20', which fits the opening snugly and rotatably, there being an annular flange 21 formed upon the outer face of the plate, so as to thicken the wall of the opening 20 and give a greater bearing-surface for the journal. The opening 20 in the plate registers with the opening 22 in the end of the journal-box.

To hold the plate 17 close against the con-

vex face of the journal-box, a wedge 24 is employed at each side of the box, these wedges being engaged in the wedge-guides above described and is illustrated in Figs. 1 and 3 of the drawings, so that they bear against the wings 19 of the plate 17. In the faces of the wedges that are next to the portions 15 of the guides are formed longitudinal zigzag grooves 25, which are curved transversely and which gradually decrease in depth from their upper to their lower ends—that is, from the major to the minor end of the wedge. In the groove 25 of each of the wedges is disposed a ball 26, which moves downwardly in the groove until it presses the wedge against the corresponding wing 19 and forces the guard-plate 17, with its flange 17', close against the convex end face of the journal-box. This arrangement of wedge and ball holds the dust-guard plate so snugly against the end of the journal-box as to prevent passage of dust therebetween, while the plate is permitted the slight movement necessary to follow the journal. By making the groove 25 in each wedge zigzag the ball is prevented from bouncing out of place.

In Fig. 5 of the drawings there is shown a portion of the journal-box 30, having an outwardly-bowed end wall 31 and a corresponding convex face 32, against which is disposed a similarly-shaped dust-guard plate 33, having the opening 34, registering with the opening 35 in the wall 31, and which opening 34 snugly receives the journal 36'. Spaced outwardly from the end wall 31 is a supplemental wall 36, between which and the wall 31 is a guideway or pocket 37, which is open at the sides of the box to permit the plate 33 to be slid laterally thereinto to register its opening with the opening 35. The supplemental wall 36 has an opening 38, through which the journal 36' is passed, and at the edge of this opening is an inwardly-directed flange 39, which lies within a conical spring 40, which bears against the plate 33 and against the inner face of the wall 36 and surrounds or encircles the flange 41 on the outer face of the plate 33 about the opening 34. The spring 40 holds the plate 33 snugly against the face 32 with a dust-tight joint, while permitting movement of the plate with the journal. The spring when in place prevents loss of the guard-plate from the journal-box in ship-

ment—that is, when the journal is not engaged in the box.

What is claimed is—

1. The combination with a journal-box having a convex inner end face provided with an opening to receive a journal, of a dust-guard plate curved to correspond to said face and disposed thereagainst, said plate having an opening registering with that of the box and means for automatically shifting the plate in the direction of the box to compensate for wear of the contacting faces of the plate and box.

2. The combination with a journal-box having a curved inner-end face and an opening therethrough to receive a journal, of a dust-guard plate fitted movably against and supported upon a portion of said face, said plate having an opening registering with that of the box and means for automatically shifting the plate in the direction of the box to compensate for wear of the contacting faces of the plate and box.

3. The combination with a journal-box having a convex inner end face curved in a vertical plane and having an opening through its inner end to receive a journal, of a dust-guard plate fitted movably against and supported upon a portion of said face, said plate having an opening registering with that of the box and means for automatically shifting the plate in the direction of the box to compensate for wear of the contacting faces of the plate and box.

4. The combination with a journal-box, of guides carried by the box, an exterior dust-guard plate for the box, wedges disposed in said guides against said plate and arranged to hold the latter against the box, each of said wedges having a longitudinal groove in its face opposite to the contacting portion of the plate, which said groove decreases in depth from its upper to its lower end and a ball engaged in each of said grooves and impinging against the bottom of the groove and against the guide.

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

JAMES S. PATTEN.

Witnesses:

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F. C. JONES.