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RAILWAY JOURNAL BOX LID

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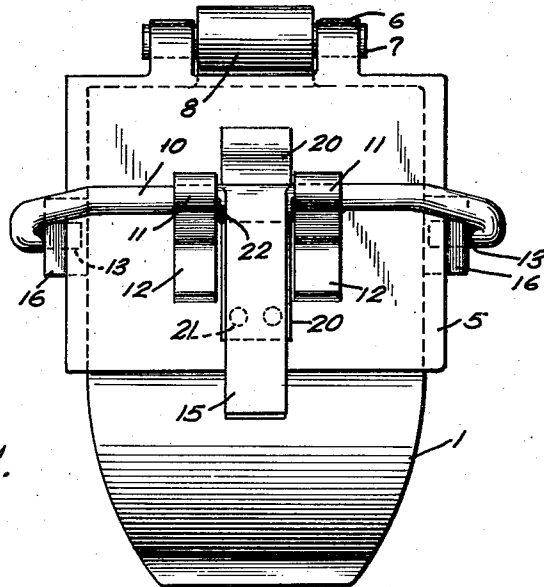


Fig. 1.

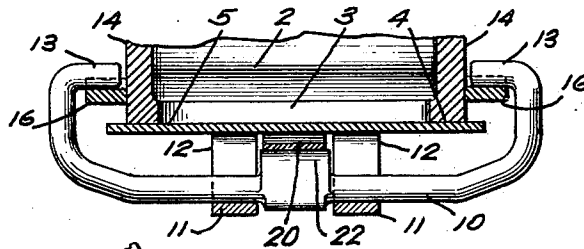


Fig. 3.

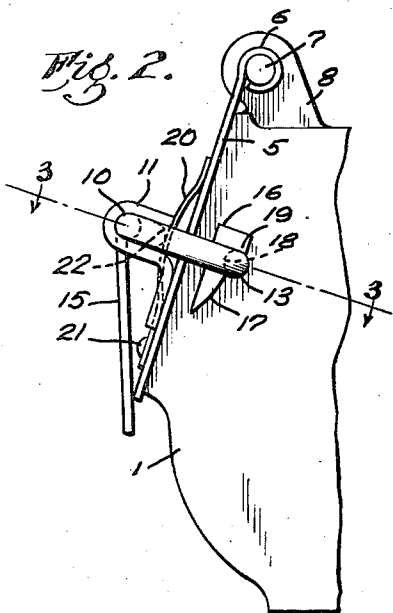


Fig. 2.

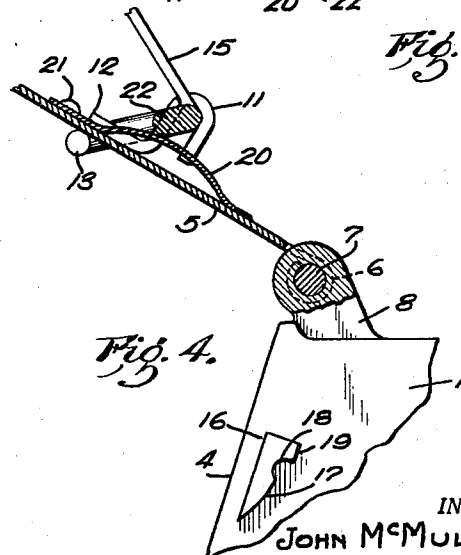


Fig. 4.

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RAILWAY JOURNAL BOX LID

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1 Claim. (Cl. 308—51)

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This invention relates to railway journal boxes, and more particularly to the covers or lids therefor.

One object of the invention is to provide an improved journal box including a cover and yielding means for locking, clamping or holding it releasably in closed position with pressure applied and maintained around the entire periphery of the box opening, thereby protecting the bearing by avoiding or preventing the admission of dirt or foreign bodies into the box cavity, and also protecting the hinge joint by preventing chatter, vibration and excessive wear.

Another object is to improve the locking and holding parts, which here are of simple form, reducing initial cost and maintenance charges, and to enable the invention to be applied by simple operations not only to new boxes but also as replacement parts for boxes already in service.

Another object is to provide an improved arrangement of the character described, in which almost all of the operative parts are not only attached to and carried by the cover or lid, but are also more or less permanently attached thereto, so that the lid and operating parts may be made and assembled as a unit at the factory ready for the final step of attachment to the box when desired.

Still another object is to provide improved locking mechanism of the character described, in which the same handle which operates the lock or clamp is also used for manipulating the cover in opening and closing the box, thus simplifying the construction.

Further objects of the invention in part are obvious and in part will appear more in detail hereinafter.

In the drawings, which represent one suitable embodiment of the invention, chosen for purposes of illustration only, and not in any sense of limitation,

Fig. 1 is a front elevation, showing the cover in closed position;

Fig. 2 is a side elevation of the front portion of the box with the cover closed;

Fig. 3 is a sectional plan view on the line 3—3, Fig. 2; and

Fig. 4 is a detail side elevation showing the cover open.

In the form shown in the drawings I indicate, conventionally, an ordinary railway car journal box provided with the usual cavity or chamber 2 to receive the journal (not shown); such cavity being provided with an opening 3 through which the journal may be inspected and

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served, as is usual. Since the invention may be applied to any form of journal box, the details of its construction require no further description.

The lip around the entire periphery of the opening 3 has its outer exposed face 4 surfaced off in a single flat plane to form a seat to receive the cover or lid. The latter, illustrated at 5, is a plain flat metal sheet, of generally rectangular form, provided along one edge with ears 6 bent into cylindrical form to receive the hinge pintle 7, which is mounted in an opening in a lug or boss 8 attached to or formed integrally with the body of the box 1, all providing the usual hinge connection between the box and its lid or cover. When the lid is in closed position the inner surface of the plate-like cover rests upon the seat 4, being here applied to said seat, around the entire periphery of the opening 3, with spring pressure, as will appear, thus completely sealing the box opening and avoiding the entrance of dirt or foreign objects to the box chamber. This protects the bearings and the journal box waste.

Upon the cover are mounted its locking and manipulating parts. These include a rod or bar 10 confined in the elongated bends or loops 11 of metal straps 12 riveted, welded or otherwise secured to the cover. The middle portion of the bar 10 is straight, but its outer ends are bent into hook form to provide two locking portions or members 13, oppositely disposed and in alignment, one on each side of the cover, and extending toward each other. When the parts are assembled these locking members 13 lie behind the plate metal cover and along the side walls 14 of the box.

Attached to rod 10, between the straps 12, is an arm 15, serving as an operating handle.

On the box itself, and serving as keepers for the locking members 13, are two lugs or blocks 16. In new boxes these may be metal parts cast with the metal of the box itself, or separate parts welded, riveted or otherwise secured thereto, and, of course, in replacement work on a box not heretofore provided with the invention, such lugs will be provided and will be attached to the box in the field.

Each keeper block 16 is provided with a rear cam surface 17, beyond which is a recess 18 and beyond that a shoulder or abutment 19 forming a stop.

Assuming the cover in open position, as shown in Fig. 4, to close the box the cover is swung down to the closed position, applying its inner surface to the seat surface 4 around the opening. The

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locking projections 13 pass beneath the lower ends of keeper blocks 16, and when the cover reaches closed position the handle may be depressed, thus swinging the locking members 13 in a counter-clockwise direction, Fig. 4, moving them up along the cam surfaces 17 until they reach the seats 18, where they are stopped by the abutments 19. Such operation is utilized to apply spring pressure to the outside of the box lid and to releasably lock it in place.

For the purpose described the lid, beneath the rod 10, is provided with a spring, here shown as an elongated, curved leaf spring 20. Said spring may be fastened to the lid, as by rivets, at each of its ends, but as shown it is secured only at one end as at 21, providing a little more motion and resiliency or, in other words, more yieldability, for the same spring than when both ends are secured. As the handle 15 is turned to the locking position described, a projection or cam portion on the rod 10, shown as a lug or projection 22, moves along the spring 20 into position between said spring and the rod 10, with a compressing action upon the spring. Thus, when the parts reach the home position the plate-like cover is applied to the edges of the box opening with yielding pressure sufficient to tightly seal the cover to its seat, the parts being held releasably in that position by reason of the engagement of the locking members 13 in their seats 18. In this position chatter and vibration of the parts are avoided and the construction is silent in operation. It is particularly effective in its avoidance of the application of spring pressure to the hinge pin, with its constant tendency to force the upper edge of the cover away from the box.

The invention also compensates for wear of the parts in use, particularly wear in the hinge joint, such as might produce lost motion and again permit the opening of cracks or crevices between the lid and box. Thus, the journal box and waste always are protected against entry of foreign substances.

To open the box the hand or tool is applied to the handle 15 which is lifted up. This action, accompanied with slight depression of spring 20, permits the locking members 13 to leave their seats 18 and travel down along the cam surfaces 17 until they pass beyond lugs 16, whereupon the continuation of the lifting effect upon the handle elevates the cover to any suitable upper position, such as that shown in Fig. 4, in which it may be releasably held by any suitable means (not shown).

The entire construction is quite simple, involving a minimum number of parts which may be made and assembled and serviced at low cost. Practically all of the parts, indeed, all parts excepting the blocks 16, are attached to and carried by the cover, thus reducing the number of parts to be carried in stock and the operations of applying covers to the boxes either in the factory or in the field.

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Other advantages of the invention will be apparent to those skilled in the art.

What I claim is:

In combination, a journal box provided with a rectangular service opening having opposed parallel side edges and a lip surrounding said opening and provided with a seat, a cover hinged to the box on an axis parallel to one side edge of said opening and having a peripherally extending inner surface adapted in cover-closed position for sealing engagement with said seat, two spaced brackets mounted upon the outer surface of the cover, a rigid shaft spanning the space between said brackets and rotatably mounted in them on an axis parallel to that of the cover hinge and extending across the service opening, when the box is closed, midway between the side edges of said opening to which it is parallel, the outer end portions of said shaft, beyond the side walls of the box, being bent toward each other to form arms provided with rigid terminal locking fingers, rigid keeper members, one mounted upon the outer surface of each side wall of the box below said lip and each having a curved track terminating in a locking recess, an elongated leaf spring secured to the cover and lying beneath said shaft in the space between said brackets, the end portions of said spring bearing upon the cover at two points spaced equally from and on opposite sides of said shaft, said shaft opposite the middle portion of said spring being provided with a cam and with a handle which swings downwardly away from the hinge and toward the cover when locking the same, whereby upon depression of said handle with the cover closed the fingers move from below the keeper members and engage and travel along the tracks and enter the locking recesses thereof and the cam simultaneously engages and depresses and flexes said spring, said spring being of such length and strength that when the cover is closed and the handle is depressed the spring, through its spaced end portions, applies yielding but substantial pressure to the cover at two points equally spaced from said shaft, and thereby releasably locks the cover in sealing engagement with said seat under yielding pressure applied uniformly to the lip around the entire opening, and said cover cannot be unlocked and released by reverse handle movement without again flexing and increasing the pressure applying tension of said spring.

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The following references are of record in the file of this patent:

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Certificate of Correction

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JOHN McMULLEN

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Column 4, line 36, for "from" read *down*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 2nd day of November, A. D. 1948.

[SEAL]

THOMAS F. MURPHY,
Assistant Commissioner of Patents.