July 17, 1928. 1,677,321

D. S. BARROWS

JOURNAL BOX LID

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Fig. 2

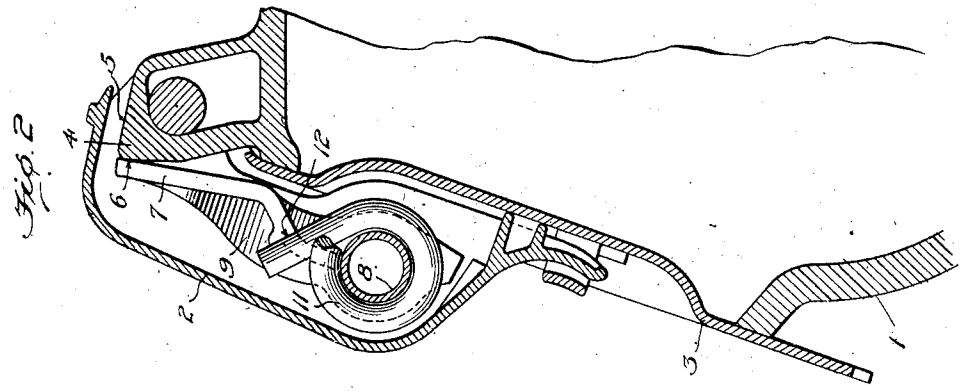


Fig. 1

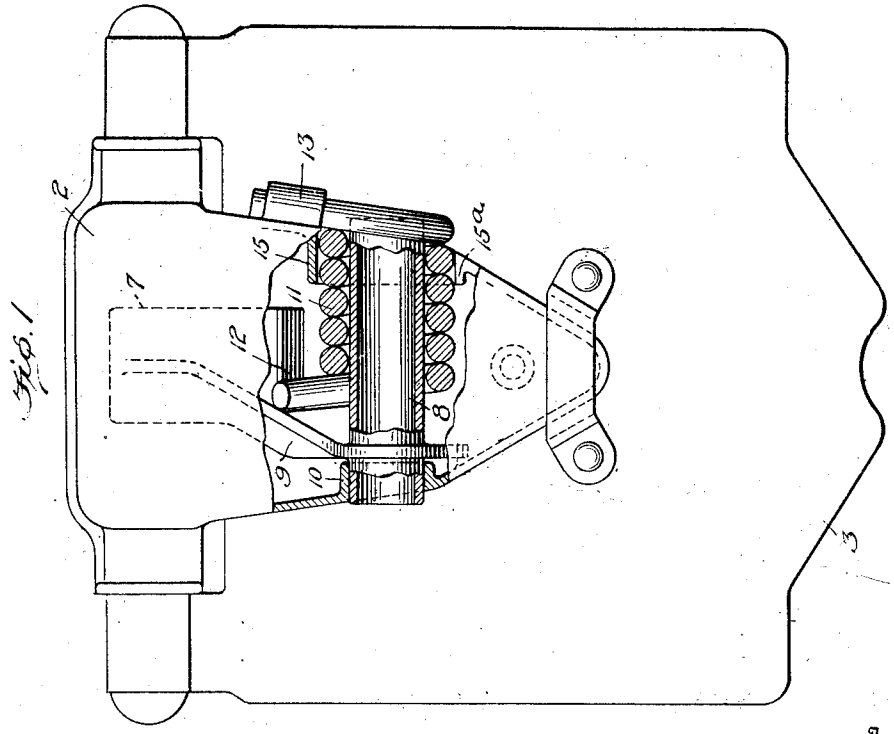
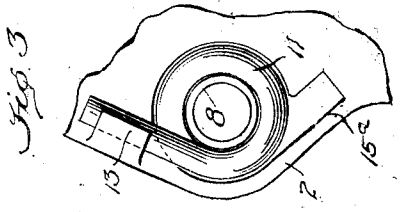


Fig. 3



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Fig. 5.

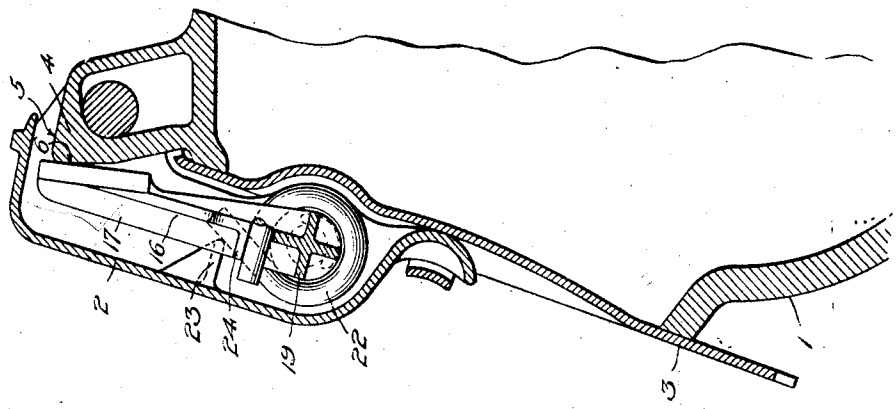


Fig. 4.

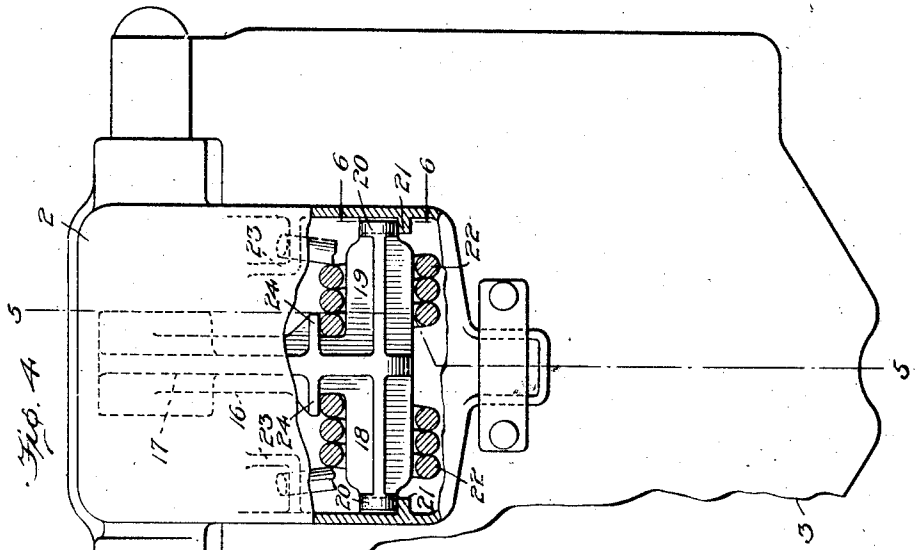
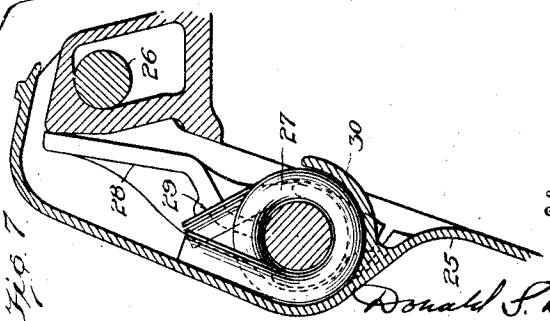


Fig. 6



Fig. 7



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UNITED STATES PATENT OFFICE.

DONALD S. BARROWS, OF ROCHESTER, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE SYMINGTON COMPANY, A CORPORATION OF MARYLAND.

JOURNAL-BOX LID.

Application filed February 20, 1924. Serial No. 693,986.

The invention relates to journal boxes for railway vehicles and more particularly to journal boxes which are provided with hinged lids.

One of the principal features of the invention, generally stated, is to provide a comparatively simple, strong and durable means for effectively hinging the lid to the journal box, said means including among other things a torsion spring and shoe member which is advantageously mounted with respect to the lid for securely maintaining said lid in closed position.

Another object of the invention, particularly stated, resides in the provision of a hinged lid having bearing means for the pivotal portion of the shoe member or lever supporting the torsion spring, additional means being provided for housing and supporting one end of the spring in the nature of a bearing therefor.

A further object of the invention is to provide an articulated lid for journal boxes which can be economically manufactured, readily assembled, and effectively maintained in position under service conditions, the several parts being capable of easy replacement in event of repair.

With these and other objects in view, the invention further consists in the combination, arrangement and construction of the several parts to be hereinafter described.

In the drawings illustrating the invention, the scope whereof is pointed out in the claims:

Figure 1 is a view in front elevation with portions in section.

Figure 2 is a vertical sectional view through the lid shown in Figure 1 applied to the journal box.

Figure 3 is a detail end view of a portion of the lid illustrating the torsion spring and the manner of supporting the same against the lid.

Figure 4 is a front elevation of a modified construction of lid with portions in section.

Figure 5 is a vertical sectional view thereof on the line 5—5 of Figure 4 and showing the same applied to the journal box.

Figure 6 is a detail sectional view on the line 6—6 of Figure 4.

Figure 7 is a detailed sectional view illustrating a further modified construction in which the torsion spring and shoe or lever member are mounted in a lid of the non-articulated type.

Referring to the drawings in which similar reference characters designate corresponding parts in the several views, the journal box 1, as shown in Figures 1 to 6, is provided with an articulated type of lid composed of the upper or hinged portion 2 and the lower cover portion 3. The journal box is provided with a lug 4 having a top portion 5 adapted to cooperate to maintain the lid in open position, and a vertical portion 6 with which the shoe member or lever 7 of the lid coacts. The shoe member 7, shown in Figures 1 and 2, is formed with a pivot portion 8 preferably formed as a hollow sleeve-like portion, and a projecting arm or lever portion 9, the upper end of said lever portion coacting with the respective lug surfaces 5 and 6. One end of the pivot portion 8 is journaled within a selected internally disposed flange 10, said flange forming an effective bearing located in relatively close proximity to the upwardly extending lever portion 9.

The torsion spring 11, and more specially the helix thereof, is adapted to surround the pivot portion 8 of the shoe member, one end of said spring bearing against the shouldered portion 12 of said shoe member, and the other end of said spring being arranged in contact with the upper portion 2 of the lid and more particularly an outstanding projection or lip 13. In this construction the torsion spring is adapted to function in the usual manner for effectively seating the lower portion 3 of the lid against its seat on the journal box while also operating effectively to maintain the lid in elevated position.

The outer end of the spring adjacent the portion maintained against the projection or lip 14 is surrounded by an internally disposed flange 15 which serves as an effective bearing for the spring. The foregoing construction and more specially the cylindrical portion 8 of the shoe member provides a stable pivot member for the spring which, it will be noted, serves to effectively maintain the shoe member in position for coaction with the cam surfaces.

In the modified construction shown in

Figures 4, 5 and 6, the shoe member or lever 16 may be and preferably is formed of a solid metal piece, there being an intermediate upstanding projecting portion 17, the upper end of which is adapted to coact with the respective cam faces provided on the journal box. The laterally extending portions 18 and 19 of the shoe member are each provided with a trunnion 20 adapted to seat in the bearing portion 21 extending inwardly of the upper or hinged section 2 of the lid.

In this construction a plurality of torsion springs 22 is disposed around the projecting portions 18 and 19 of the shoe member, the outer ends of said springs bearing against the respective projections 23 provided on the lid section 2, and the inner ends of said springs contacting respectively the projections 24 on the shoe member. In this construction the torsion springs can be readily inserted together with the shoe member and positioned for operation for effectively maintaining the lid in either closed or open position.

In the modified construction shown in Figure 7 the lid 25 is pivotally mounted upon the pintle 26, the upper portion of said lid being so shaped as to receive the torsion spring 27 and shoe member 28. One end of the torsion spring is adapted to bear against the lid, as shown, the other end of said spring contacting the shoulder 29 provided on the shoe member or lever. The upper end of the shoe member is adapted to cooperate with the respective lug faces, the lower end of said member forming the circular pivot portion for the spring. The spring is further maintained in position by means of the inwardly extending bearing flange 30 shown herein as formed integral with the lid.

According to the preferred embodiment of the invention, the lid section 3 is loosely pivoted on the pintle which also supports the upper cover section 2 enclosing the torsion spring and shoe member or lever, said pivotal connections, together with the arrangement of spring and lever acting to effectively maintain the lid in snug contact with the journal box. The offset relation of the upwardly extending arm portion of the shoe member provides for the effective positioning of the torsion spring which is inserted through the opening in the section 2 bordered by the flange 15. The slotted portion 15^a in the end of the section 2 and intersecting the opening adjacent the flange 15 permits of the introduction of the spring. The outer end of the spring is held in position by the lip or projection 13 which may be bent over said end after the parts are assembled in position. The introduction of the shoe or lever member is easily accomplished and when the pivot portion thereof is surrounded by the helix of the spring it becomes effectively journaled therein, the end portion of the spring being in turn journaled in the bearing flange 15. It will be observed that the assembly of the parts illustrated in the modified construction of journal box is equally advantageously effected and a detailed description thereof is not believed necessary.

I claim:

1. The combination with a journal box having a hinged lid, of means maintaining said lid in a plurality of positions, said means including a lug on the journal box having a plurality of faces, a lever provided with a portion adapted to cooperate with said surfaces and another portion forming a pivot, a torsion spring mounted on the pivot portion of said lever and having one end operable against said lever and the other end pressing outwardly on said lid, and bearings provided on the lid adapted to respectively support one end of the pivot portion of the lever and surround a portion of the torsion spring at the other end of the pivot member.

2. The combination with a journal box having a hinged lid, of means for maintaining said lid in a plurality of positions, said means including a lug having a plurality of surfaces, a lever provided with a portion adapted to co-act with said surfaces and another portion forming a pivot, a torsion spring mounted on said pivot portion of the lever, one end of said spring bearing against said lever and the other end of said spring bearing against the lid, and means on said lid including a bearing for said pivot portion and one for said spring for maintaining said spring and lever in position.

3. The combination with a journal box having a hinged lid, of means for maintaining said lid in a plurality of positions, said means including a lug having a plurality of surfaces, a lever provided with a portion adapted to co-act with said surfaces and another portion forming a pivot, a circular bearing formed on the lid for one end of said pivot portion, a torsion spring having its helix disposed around said pivot member, and a bearing portion on the lid for supporting said helix, said spring having one end thereof bearing against the lever and another portion bearing outwardly on the lid.

4. The combination with a journal box having a loosely hinged lid member forming the cover of said box, another member loosely connected to said lid and hinged to the journal box, a lever having a portion journaled in said second named member, said lever having an offset portion, a torsion spring surrounding a portion of said lever and having one end reacting against said offset portion and the other end bearing outwardly against the second named member, and means including a lug provided on said

journal box having portions adapted to cooperate with said lever for maintaining the lid in a plurality of positions.

5. The combination with a journal box provided with a lug and having an articulated lid connected thereto, a lever having a spindle or pivot portion journaled directly in one section of the lid and provided with a projection disposed adjacent said portion adapted to coact with said lug for maintaining the lid in a plurality of positions, a torsion spring having its helix disposed around said spindle portion and providing a bearing therefor, said spring having one end bearing against the lever and the other end bearing against the aforesaid section of the lid, and a bearing for the end of the spring adjacent that portion bearing against the section.

6. The combination with a journal box having a lug, a lid connected to said lug, and means for maintaining said lid in a plurality of positions, said means including a lever having a projection cooperating with said lug, said lever being pivotally mounted at one end directly in the lid and a torsion spring mounted in the lid and completing the pivotal mounting of said lever, said spring having one end pressing inwardly on the lever and the other end pressing outwardly on said lid.

7. The combination with a journal box, of a lid connected thereto, and means for maintaining said lid in a plurality of positions, said means including a lever having a portion forming a pivot, and a helical torsion spring having its helix forming a bearing for a part only of the pivot portion of said lever, the other end of said pivot portion being movably mounted directly in the lid, said spring having one end bearing inwardly against the lever and the other end pressing outwardly against the lid.

8. The combination with a journal box, of a lid pivoted thereto, and means for maintaining said lid in a plurality of positions, said means including a torsion spring and a lever having a portion forming a pivot therefor, said spring having one end bearing inwardly against said lever and the other end projecting through one end of the lid, and means including a projection on the lid for connecting the projecting end of the spring thereto.

9. The combination with a journal box, of a lid having an opening at one end thereof pivoted thereto, and means for maintaining said lid in a plurality of positions, said means including a lever having a pivot portion, a torsion spring insertable through the opening in the lid, said spring surrounding the pivot portion and having one end thereof bearing inwardly against the lever, the other end of said spring being disposed upon the outside of the lid, and means including a suitable projection on said lid for releasably maintaining said last mentioned end of the spring in operative position.

In testimony whereof I affix my signature.

DONALD S. BARROWS.