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JOURNAL BOX LID

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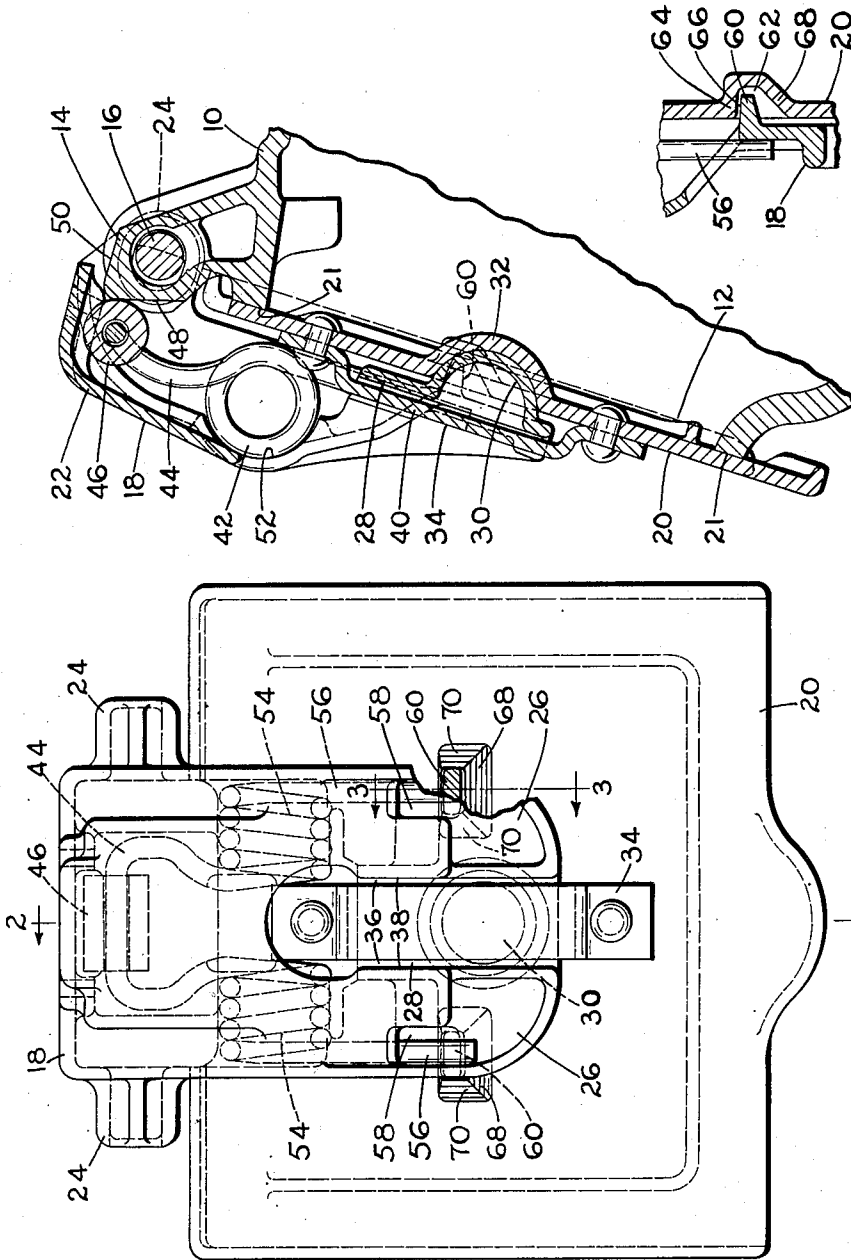


Fig. 2

Fig. 1

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JOURNAL BOX LID

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7 Claims. (Cl. 308—47)

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This improvement relates to railway journal boxes and more particularly to a lid for closing the opening in the front end of the journal box.

Related subject matter is disclosed and claimed in my copending application Serial No. 45,125, filed August 19, 1948. In that application there is disclosed a journal box lid comprising a closure member and a hood member having a ball and socket connection therebetween, the members being loosely but securely tied together at the connection for limited relative movement by means of a strap which is secured to the closure member. The strap bridges the ball and socket connection and is received in a channel shaped portion of the hood member positioned on the vertical center line of the lid. The strap is normally out of contact with the sides or bottom of the channel portion to allow limited relative angling between the members. This arrangement for limiting relative movement between the members is very satisfactory so long as the strap is properly positioned on the vertical center line of the closure member before being secured thereto. However, in the event the strap is improperly secured to the closure member so that it does not lie on the vertical center line thereof, angling of the closure member in the direction of its plane may be so restricted as to make it impossible to adjust this member properly on the face of the box opening to assure a tight seal.

The present improvement consists in the provision of stop means in the aforementioned lid, which independently of the strap serve to limit the relative angling between the hood member and closure member in the plane of the latter. This limiting of the relative angling between the members is particularly important during opening and closing of the lid in service, as it assures that the closure member will at all times be in proper position to seal the box opening whenever the lid is swung closed. The strap is formed narrower than formerly so that the stop means will be effective to limit angling of the closure member before the strap contacts the sides of the channel in the hood member. Accordingly, it is the main object of my invention to provide in a journal box lid of the type disclosed in my above mentioned application stop means for limiting relative movement between the hood member and closure member thereof in the plane of the closure member.

Other objects and advantages of my invention will be apparent from the following description taken in conjunction with the drawings in which:

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Fig. 1 is a front elevational view of a lid embodying the invention applied to a journal box, a portion of the hood member being shown broken away.

Fig. 2 is a vertical sectional view taken along line 2—2 of Fig. 1.

Fig. 3 is partial sectional view taken along line 3—3 of Fig. 1.

Referring to the drawings there is shown a journal box 10 having a front opening 12 for access to the inside of the box. The lid for closing opening 12 is connected to the conventional hinge lug 14 by means of a horizontal pivot pin 16. The lid comprises a hood member 18 and a cover or closure member 20 which engages the face 21 about opening 12. Hood member 18 comprises a chambered portion 22 having a pair of apertured ears 24 which receive hinge pin 16.

Extending downwardly from chambered portion 22 are spaced legs 26 which are connected at their lower ends by a web 28 which is formed with a ball portion 30. Closure member 20 is generally in the shape of a flat rectangular plate and has a centrally disposed spherical depression 32 for receiving ball portion 30. This arrangement permits universal movement of closure member 20 relative to the hood so that the closure member is permitted to adjust itself to the face 21 of the box. Hood 18 and closure member 20 are loosely but securely tied together at the ball and socket connection by means of a strap 34 which is suitably secured to the closure member. It will be observed that strap 34 bridges ball portion 30 and web 28. A substantial clearance as at 36 is provided between the sides of strap 34 and the adjacent walls 38 of the hood. It will also be noted that walls 38 in conjunction with web 28 form a channel shaped recess in the hood for receiving strap 34. Web 28 is spaced from and extends parallel to closure member 20, while strap 34 is so formed that a clearance exists between portion 40 thereof and web 28.

A torsion spring 42 carried in the chambered portion 22 of the hood provides the closing force against the lid. The spring has a loop portion 44 on which is mounted a roller 46 which travels on surfaces 48 and 50 of the hinge lug during opening and closing of the lid. Bearing against the arcuate portions 52 of the hood are coil portions 54 of the spring. The outer ends of coil portions 54 terminate in legs 56 which extend through openings 58 in the hood and bear against legs 26 thereof. The closing force of the spring acts through legs 56 thereof directly to the hood and thence is applied to the closure member

solely through ball portion 30. Thus the closing force of the spring is applied to the center of the closure member through the ball and socket connection which permits the closure member to adjust itself against the face of the box with substantially equal pressure on the contacting surfaces.

Extending inwardly of the journal box from legs 26 of hood 18 are a pair of stop lugs 60 disposed on either side of ball portion 30. Lugs 60 are preferably positioned adjacent the side edges of the hood and substantially in line with ball portion 30. Closure member 20 is provided with depressions or pockets 62 for receiving lugs 60. Each pocket 62 is formed on its upper side with an abutment wall 64 spaced from but adapted to be engaged by the upper surface 66 of lug 60 when closure member 20 is angled with respect to hood 18 in the plane of member 20. Thus lugs 60 and abutment walls 64 in conjunction with the ball and socket joint serve to limit angling of the closure member in the direction of its plane and therefore during opening and closing of the lid as in service the closure member will at all times be maintained in proper position to assure full surface contact with face 21 of the box opening. Also, in service during travel of the car the lugs will serve to limit angling of the closure member relative to face 21. The previously mentioned clearance 36 between strap 34 and walls 38 of the hood is large enough so that the strap does not contact these walls during the above mentioned angling of the closure member. It will be understood that either one of lugs 60 will contact wall 64, depending on the direction in which the closure member is angled. Bottom wall 68 and side walls 70 of pocket 62 are preferably positioned so as to extend away from lug 60 so that the latter will not engage these walls during angling of the closure member.

Angling of the closure member in all directions other than in the plane of the member is limited by the engagement of strap 34 with web 28 of the hood.

While in the embodiment illustrated stop lugs 60 are shown as being formed on the hood member, these lugs may be formed on the closure member, in which case the pockets for receiving the lugs will be in the hood member. The lugs and pockets as thus arranged will function to limit the aforesaid relative angling between the hood and closure member in the same manner as in the embodiment herein illustrated.

The terms and expressions which I have employed are used as terms of description and not of limitation, and I have no intention, in the use of such terms and expressions, of excluding any equivalents of the features shown and described or portions thereof, but recognize that various modifications are possible within the scope of the invention claimed.

What I claim is:

1. In a lid for closing the front opening of a railway journal box, said lid comprising a closure member and a hood member flexibly connected together by means of a ball and socket joint to enable universal movement of said closure member with respect to said hood member, inwardly extending projections on said hood member spaced laterally from said joint, and abutment means on said closure member normally spaced from said projections, said projections having plane top surfaces extending substantially at right angles to the plane of said closure member

and being adapted for engagement with said means to limit angling of said closure member relative to said hood member in the plane of said closure member.

2. In a lid for closing the front opening of a railway journal box, said lid comprising a closure member and a hood member flexibly connected together by means of a ball and socket joint to enable universal movement of said closure member with respect to said hood member, a pair of transversely spaced inwardly extending lugs on said hood member, said lugs being spaced laterally of and on opposite sides of said ball and socket joint, and a pair of inwardly extending pockets on said closure member for receiving said lugs, said pockets having top, bottom and side walls, said lugs having top surfaces adapted to engage the top walls of said pockets to limit pivotal movement of said closure member about said joint in the direction of the plane of said closure member.

3. In a journal box lid a hood member for pivotal attachment to the hinge lug of a journal box, a closure member adapted to pivot with said hood member, a ball and socket joint connecting said members to enable universal movement of said closure member relative to said hood member, a pair of stop lugs on said hood member extending toward said closure member, said lugs being spaced transversely of and on opposite sides of said joint said lugs having plane upper surfaces extending substantially at right angles to said closure member, and abutments on said closure member adapted to engage said surfaces to limit rotation of said closure member about said joint in the plane of said closure member.

4. A journal box lid comprising a hood member and a closure member, said members having a ball and socket joint therebetween to enable pivotal movement of said closure member relative to said hood member, said hood having a pair of lugs positioned on opposite sides of said joint and substantially in horizontal alignment therewith, said closure member having a pair of pockets for receiving said lugs, said pockets being spaced laterally of and on opposite sides of said joint and having top, bottom, and side walls, said top walls being spaced from and adapted to engage said lugs to limit pivotal movement of said closure member about said joint in the plane of said closure member.

5. A lid for closing the front opening of a railway journal box, said lid comprising a hood member and a closure member having a ball and socket connection therebetween to permit universal movement of said closure member relative to said hood member, said hood having a channel portion adjacent said connection, a strap extending into and bridging said channel portion and being secured to said closure member, said strap being spaced from the sides of said channel to allow angling of said closure member about said connection in the direction of the plane of said closure member, and means for limiting said angling of said closure member, said means comprising a pair of lugs on said hood member positioned on opposite sides of said connection and pockets in said closure member for receiving said lugs, said pockets having top, bottom and side walls, said lugs being adapted to engage the top walls of said pockets to limit said angling of said closure member in the direction of its plane.

6. A lid for closing the front opening of a railway journal box, said lid comprising a hood member and a closure member flexibly connected

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to said hood member, said hood member being pivotally connected at its upper end to said box and having a ball portion facing said closure member, said closure member having a socket for receiving said ball portion to permit universal movement of said closure member relative to said hood member, a strap bridging said ball portion and being secured to said closure member, and means for limiting pivotal movement of said closure member relative to said hood member in the direction of its plane, said means comprising a projection on one of said members spaced laterally of said socket and a pocket in the other of said members for receiving said projection, said pocket having top, bottom and side walls, said projection being normally spaced from said walls and being adapted to engage said top wall of said pocket to limit said pivotal movement of said closure member.

7. A lid for closing the front opening of a railway journal box, said lid comprising a hood member pivotally connected to said box, a closure member flexibly connected to said hood member by means of a ball and socket connec-

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tion to permit universal movement of said closure member relative to said hood member, said hood member having an inwardly extending stop lug spaced laterally of one side of said connection adapted to engage an abutment on said closure member to limit angling of said closure member about said connection in one direction in the plane of said closure member, said hood having another inwardly extending stop lug spaced laterally of the other side of said connection adapted to engage an abutment on said closure member to limit angling of said closure member in the plane of the latter about said connection in the opposite direction.

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

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