June 16, 1953 A. O. BUCKIUS 2,642,319

JOURNAL BOX LID

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Fig 1

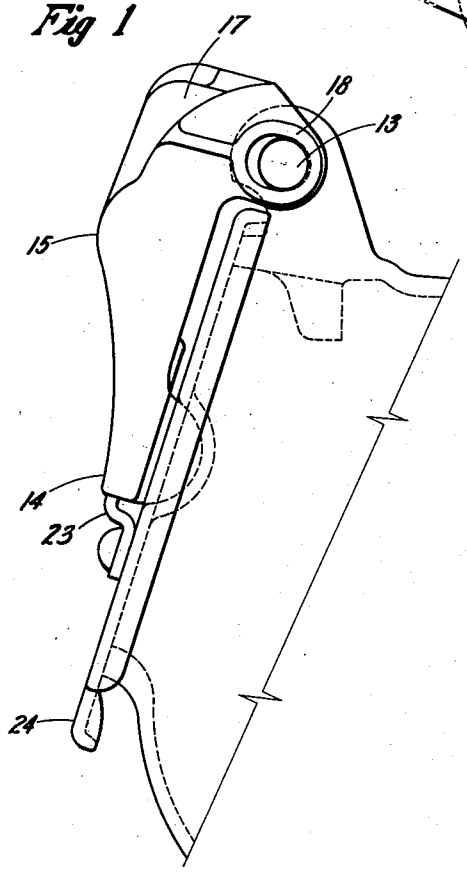
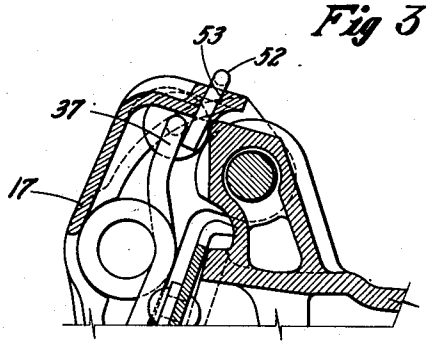


Fig 2

Fig 3



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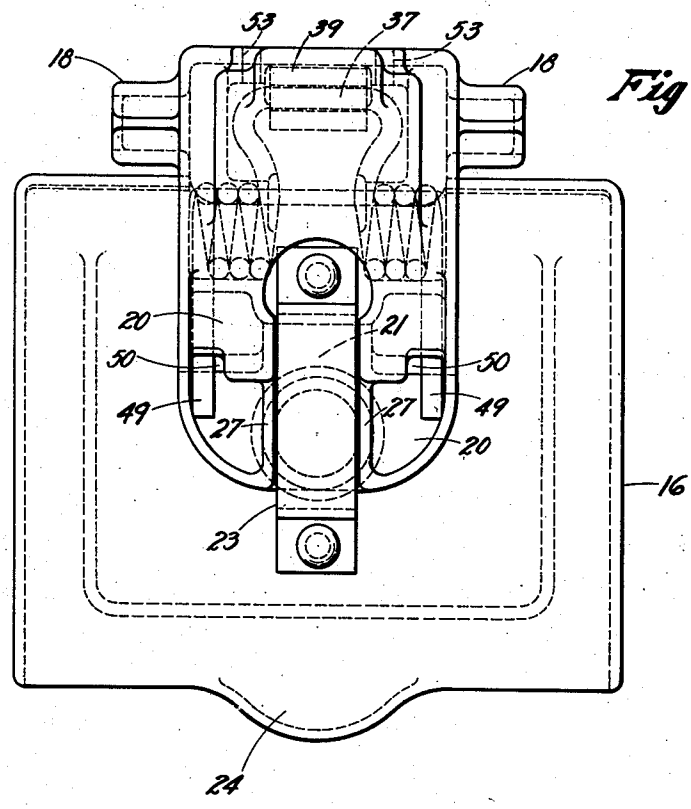
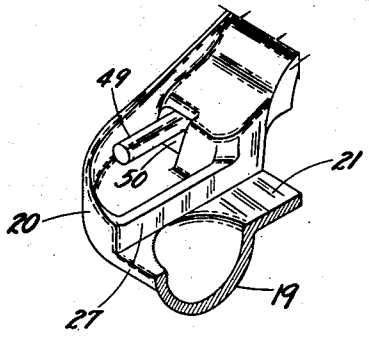


Fig 4

Fig 5



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JOURNAL BOX LID

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5 Claims. (Cl. 308—47)

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

It is the main object of my invention to provide a new and improved lid for a journal box, in which the force for holding the lid in closed position is applied at the central portion thereof.

Another object is to provide a journal box lid having a ball and socket connection between the closure member and hood member thereof and also having means at the connection for limiting relative angling of the members.

A further object is to provide a journal box lid in which the closure member is connected to a hood member for universal movement relative thereto and in which stop means is located adjacent the connection to limit this movement to facilitate opening and closing the lid.

A still further object is the provision of a lid having a relatively large ball and socket union at the center of the lid for effecting a closing pressure on the closure member thereof, the closure member and hood member being tied together at the ball and socket union by a strap which additionally serves to limit the relative movement between the members to facilitate opening and closing of the lid.

My invention also contemplates a channel structure in the hood member of the lid for receiving a strap which, in addition to tying the hood member to a closure member, cooperates with the channel structure to restrict relative angling between the hood and closure members.

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

Fig. 1 is a side elevational view of a lid embodying the invention applied to a journal box.

Fig. 2 is a vertical sectional view of the lid shown in Fig. 1, the dot-dash lines illustrating the open position of the lid.

Fig. 3 is a partial view in vertical section showing the method of disconnecting the lid from the journal box.

Fig. 4 is a front elevational view of the lid shown in Fig. 1.

Fig. 5 is a perspective view of a portion of the lid.

Referring to the drawings there is shown a journal box 10 having a front opening 11 for access to the inside of the box and a conventional hinge lug 12 which is apertured for receiving a horizontal pivot pin 13 to which is connected the lid 14. The lid comprises a hood member 15 and a plate or closure member 16 which closes opening 11. Hood member 15 comprises a chambered portion 17 having a pair of apertured ears 18 which receive hinge pin 13 about which the lid is hinged.

At the lower end of hood 15 is a ball portion 19 which is joined to the chambered portion 17 by means of spaced legs 20 and a connecting

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web 21. Closure member 16 is generally in the shape of a flat plate and has a spherical depression 22 in the center thereof for receiving ball portion 19 of the hood. The hood and closure member are, at the ball and socket connection, loosely but securely tied together for limited relative movement by means of a strap 23 which is suitably secured to the closure member. Ball portion 19 is formed integral with web 21 which in the assembled lid is bridged by strap 23. Web 21 is spaced from and extends parallel to closure member 15, while strap 23 is so formed that a clearance exists between portion 25 thereof and web 21 so as to allow a limited amount of universal angling of the closure member relative to the hood and thereby permit the closure member to adjust itself on the face of the box.

Adjacent the sides of strap 23, legs 20 are formed with upstanding guide flanges 27 which serve to limit relative angling between the members in the plane of the closure member. It will be observed that web 21 in conjunction with flanges 27 forms a vertically extending channel portion for receiving strap 23 and restricting the movement thereof during opening and closing of the lid. Movement of the closure member in a direction normal to its plane is limited by the engagement between the underside of strap portion 25 and web 21 of the hood member. Thus it will be seen that the closure member, while flexibly connected to the hood to permit the lid to adjust itself so as to assure tight engagement of the closure member with the box about opening 11, is securely held by strap 23 to facilitate opening and closing the lid.

When the lid is to be opened, the force applied to the lower end of the closure member first causes it to pivot about its contact with the box at the upper end of the opening 11 until the underside of strap portion 25 engages the upper portion of web 21, after which the closure member and hood act as an integral member and pivot about hinge pin 13 to open position of the lid, as shown in dot-dash lines in Fig. 2. When a force is applied to the end of the closure member at 24 to close the lid, the closure member first angles relatively to the hood about the ball and socket joint until the inner end 29 of the closure member engages the adjacent portion of the hood, after which the parts pivot about pin 13 as an integral member to closed position.

A torsion spring 35 carried in the chambered portion of the hood provides the closing force against the lid. This spring contains a loop portion 37 on which is mounted a roller 39 which travels on surfaces 41 and 43 of the hinge lug during opening and closing of the lid. Extending from loop portion 37 are coil portions 45 which bear against arcuate portions 47 of hood 15. The spring terminates in a pair of leg portions 49 which extend through openings 50 in the hood member and bear against legs 20 of the hood. Leg

portions 49 transmit the closing force of the spring to the hood only and therefore this force is applied to the closure member solely by means of ball portion 19. This arrangement results in the application of the closing force of the spring to the center of the closure member through the ball and socket connection and thus permits the closure member to adjust itself against the face of the box with substantially equal pressure on the contacting surfaces.

To disconnect the lid from the box the lid is pulled partly open to compress the spring sufficiently to permit a U-shaped pin 52 to be inserted into openings 53 in the upper end of the hood, with the legs of the pin adjacent the loop portion 37 of the spring. The spring is thereby retained under compression within the hood, and the lid is raised further until it is in approximately horizontal position after which pin 13 may be withdrawn and the lid removed from the box.

The lid is applied to the box by applying the preceding steps of disassembly in reverse order. The spring of a new lid is initially compressed by means of a press or other suitable device and the U-shaped pin inserted into the hood to hold the spring compressed.

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. 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, a spring terminating in a pair of leg portions engaging said hood member whereby the closing force of said spring acts directly against said hood member, said hood member having means at its upper end for pivotal connection to said box and having a pair of spaced legs with a channel portion connecting the lower ends of said legs, said channel portion having a ball portion facing said closure member, said closure member having a centrally disposed socket for receiving said ball portion to provide for universal movement between said members, said ball portion engaging said socket and serving to transmit the closing force of said spring from said hood member to said closure member, and strap means received in and bridging said channel portion and being secured to said closure member, said channel portion comprising upstanding flanges extending lengthwise of said strap means and being disposed adjacent the sides of said strap means for engaging therewith to limit relative angling between said members in the plane of said closure member.

2. A lid for closing the front opening of a railway journal box, said lid comprising a closure member and a hood member flexibly connected to said closure member, said hood member having means at its upper end for pivotal connection 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, said ball portion being in engagement with said socket, a strap bridging said ball portion and being secured to said closure member, and stop means extending from said ball portion toward said pivotal means and interposed between said strap and said closure member, said stop means being adapted to engage said strap at a point remote from said ball portion during opening of said lid to limit relative movement between said hood and closure members.

3. A lid for closing the front opening of a railway journal box, said lid having a hood member, a closure member and a spring having leg portions reacting directly against said hood member for maintaining said lid in closed position, said hood member comprising an upper end adapted for pivotal connection to a journal box, a ball portion disposed so as to be substantially central of said closure member and facing the latter, and a web extending from said ball portion toward the upper end of said hood member, said closure member having a socket for receiving said ball portion, the spring force being transmitted from said hood member to said closure member solely through the engagement of said ball portion in said socket, a strap bridging said ball portion and said web and being secured to said closure member, said strap being adapted to engage said web at a substantial distance from said ball portion to limit angling of said closure member relative to said hood member during opening of said lid.

4. A lid for closing the front opening of a railway journal box, said lid having a hood member, a closure member and a spring having leg portions reacting directly against said hood member for maintaining said lid in closed position, said hood member comprising a ball portion facing said closure member, a pair of upstanding flanges adjacent said ball portion and a web joining said flanges and extending from said ball portion toward the upper end of said hood member, said closure member having a socket for receiving said ball portion, the spring force being transmitted from said hood member to said closure member solely through the engagement of said ball portion in said socket, a strap disposed between said flanges and bridging said ball portion and said web and being secured to said closure member, said strap being adapted to engage said flanges to limit angling of said closure member relative to said hood member in the plane of said closure member, said strap being adapted to engage said web to limit angling of said closure member relative to said hood member during opening of said lid.

5. A lid for closing the front opening of a railway journal box, said lid comprising a hood member and a closure member having means comprising a ball and socket connection therebetween to permit universal movement of said closure member relative to said hood member, said connection comprising a ball portion on said hood member engaging a socket in said closure member, said hood member having stop means adjacent said connecting means, and a strap secured to said closure member and overlying said stop means and connecting means, said strap being adapted to engage said stop means at a point remote from said ball and socket connection to limit movement of said closure member relative to said hood member during opening of said lid.

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