Nov. 7, 1933. E. R. SWANSON ET AL 1,933,569

COVER

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Fig. 1

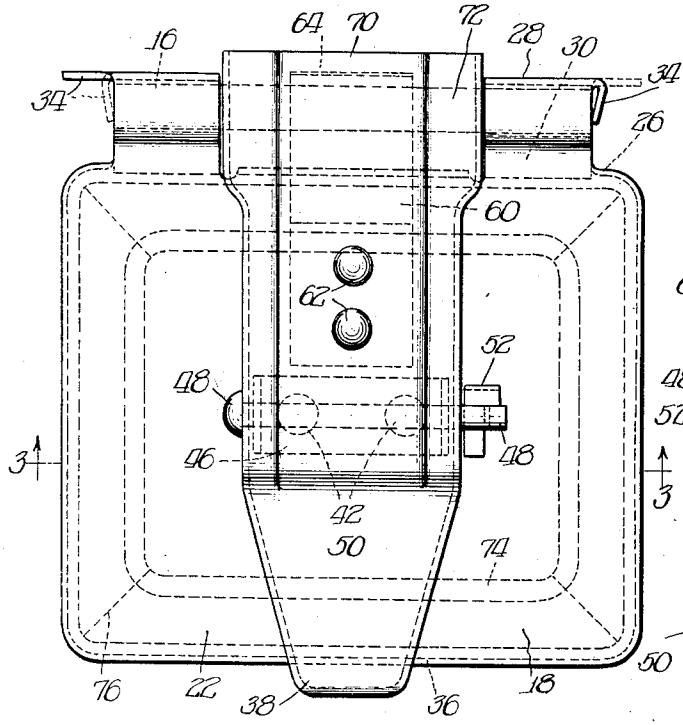


Fig. 2

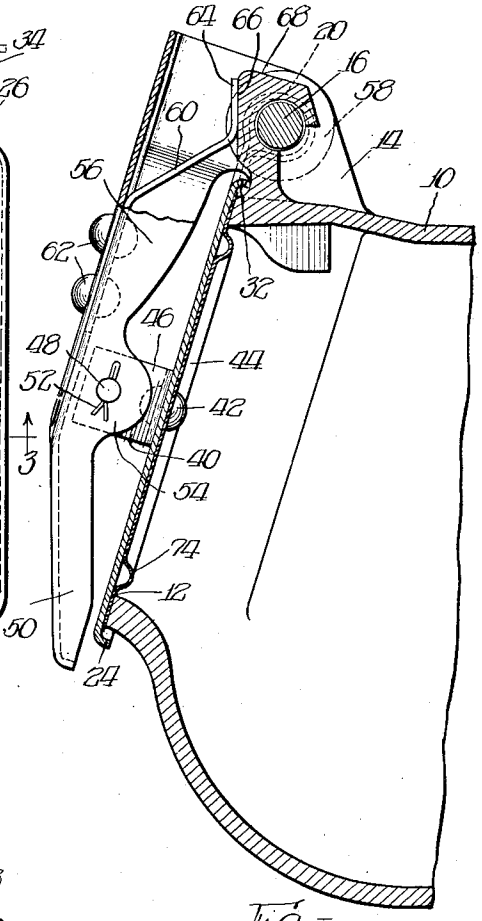


Fig. 3

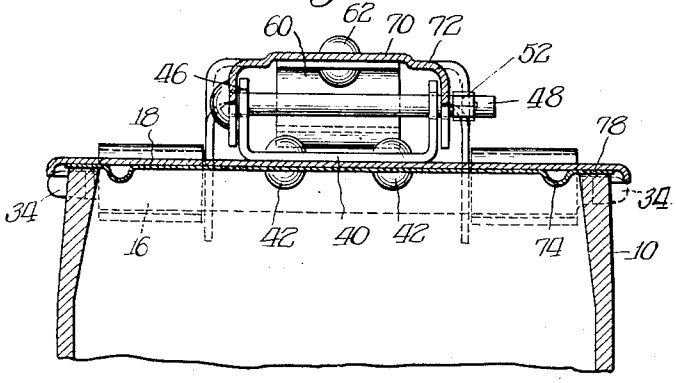


Fig. 4

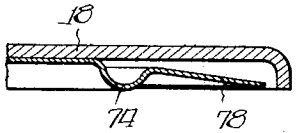


Fig. 5

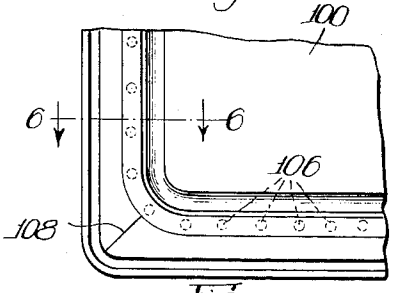
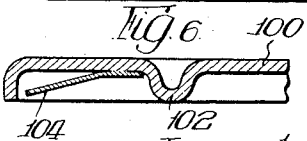


Fig. 6



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COVER

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Fig. 7

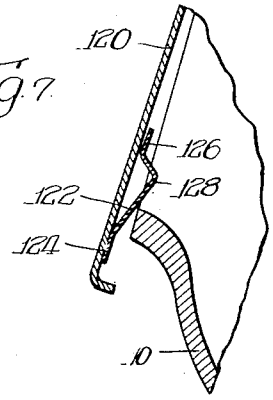


Fig. 8

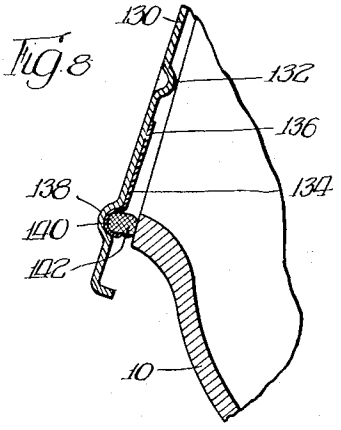


Fig. 9

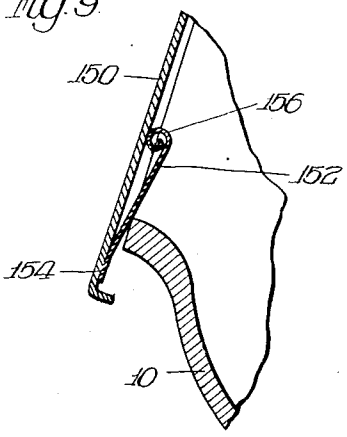


Fig. 10

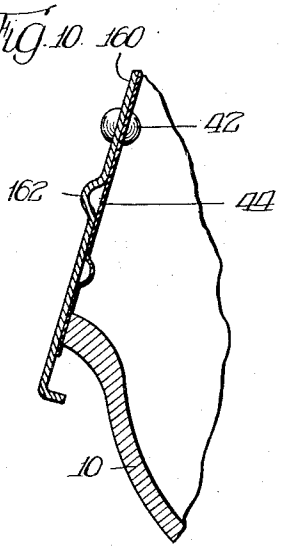


Fig. 11

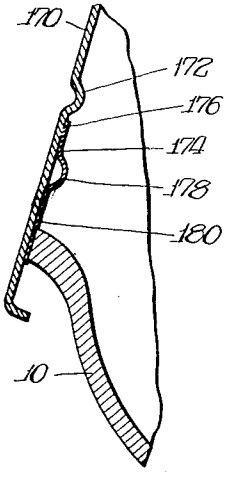
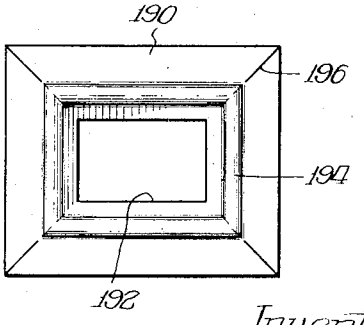


Fig. 12



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UNITED STATES PATENT OFFICE

1,933,569

COVER

Earl R. Swanson, Chicago, Ill., and Lawrence L. Markel, Warren, Ohio, assignors to Chicago-Cleveland Car Roofing Company, Chicago, Ill., a corporation of Delaware

Application May 26, 1930. Serial No. 455,697

5 Claims. (Cl. 308—50)

This invention pertains to sealing covers, and more particularly to journal box lids adapted for use on railroad vehicle journal boxes and particularly on the standard type of box.

The standard journal box now in use is adapted to be associated with an axle and provides either a primary or secondary source of lubricant for the axle and its associated bearings. The practice now is to cast the complete journal box either separate or integral with an associated frame, and with this procedure the face of the journal box opening normally adapted to be closed by the lid is a comparatively rough casting, the sides defining the opening being usually uneven and not co-planar. In order, then, to effect a satisfactory tight fit of the journal box lid against the opening, either the sides defining the opening must be machined, an expensive proceeding, or the lid must be made to accommodate itself to the unevennesses. It will be appreciated that it is very necessary that the lid have a tight fit to completely close the journal box opening, as otherwise dust, sand, grit and other foreign material will enter the journal box, causing detriment to the packing and lubricant therein, which produces excessive wear and other unfair use.

It is therefore an object of this invention to provide a journal box lid which will adequately and completely seal the journal box opening without the necessity of machining the periphery of said opening.

Another object of the invention is to provide a lid adapted for journal box use which is readily operable through means which will prevent damage to the body of the lid.

Still another object is to provide a journal box lid which is inexpensive to make and maintain and fulfills all requirements of manufacture and service.

With these and various other objects in view, the invention may consist of certain novel features of construction and operation, as will be more full described and particularly pointed out in the specification, drawings and claims appended hereto.

In the drawings, which illustrate an embodiment of the device and wherein like reference characters are used to designate like parts—

Figure 1 is a top plan view of a journal box lid embodying the invention;

Figure 2 is a fragmentary sectional side elevation through the journal box showing the lid illustrated in Figure 1 associated therewith;

Figure 3 is a transverse sectional elevation through the journal box and lid, the same being taken substantially in the plane as indicated by the line 3—3 of Figure 1;

Figure 4 is a fragmentary sectional elevation through a portion of the journal box lid showing the position of the seal member when the lid is in open or inoperative position;

Figure 5 is a fragmentary bottom plan view of a modified form of journal box lid;

Figure 6 is a fragmentary sectional elevation taken substantially in the plane as indicated by the line 6—6 of Figure 5;

Figures 7 to 11, inclusive, are fragmentary sectional elevations corresponding substantially to Figure 2 showing different modified forms of the invention, the lids being shown in closed or in operative positions; and

Figure 12 is a bottom plan view of one form of sealing member, particularly shown in Figure 11.

Referring first of all more particularly to Figures 1 to 4, inclusive, the journal box 10 is provided with the opening 12 and the upper hinge lugs 14 disposed adjacent the opening, preferably cast integral with the journal box. The hinge lugs 14 are adapted to receive the plain pivot pin 16 for pivotally mounting the journal box lid 18 on the journal box through the hinge butts 20. The journal box lid includes a main body portion or plate 22 having its edges downwardly flanged as at 24. The rear edge 26 is interrupted and formed with the hinge butts 20 which are preferably made of looped strap portions 28 integral with the body portion 22, the loops being elongated whereby there is a loose fit with the pin 16, as shown in Figure 2, to facilitate fitting and closing the lid, the edges 30 of the loops being preferably closed by spot welding as at 32.

The outer edges of each of the loops are formed with projections or tongues 34 which are adapted to be bent downwardly to embrace the ends of the pin 16 for maintaining the same in assembled position with the hinge butts. It will thus be seen with this construction that the pin does not have to be a headed one, nor are additional locking members, which may be knocked off or lost, used.

Instead of lifting the journal box lid by hooking a tool on its lower flanged edge 36, a lifter 38 is provided, which lifter may take the form of a spring housing. This lifter or spring housing is connected to the journal box lid through a housing connection clip 40 which is substantially U-shaped and, as shown, is secured to the journal box lid by means of the rivets 42 passing through

the lid adjacent the center thereof and also forming securing means for the inner seal 44. The upwardly extending arms 46 of the housing connection clip are apertured for receiving the pin 48 which extends through registering apertures in portions of the side flanges 50 of the spring housing, the pin being preferably a headed one and provided with a key slot for receiving the locking key 52. The side flanges 50 of the spring housing are preferably formed to provide maximum strength and to this end are provided with a portion 54 which is provided with the apertures for receiving the pin 48. The flange 50 is also provided with a portion 56 which is formed on a curve simulating a uniformly loaded beam. The end of the spring housing adjacent the hinge lugs is provided with a portion 58 which is apertured for receiving connecting pin 16.

The spring housing is provided with a spring member 60 secured thereto as by means of the rivet 62, said spring having a foot 64 adapted to have contact with the respective sides 66 and 68 of the hinge lugs provided on the journal box for respectively urging and maintaining the journal box lid in closed or open positions. The spring housing projects slightly below the lower edge 36 of the journal box lid whereby it may be readily engaged to move the lid to open position, and the top of said spring housing is embossed or corrugated as at 70 and flared as at 72 adjacent hinge butts 28 to provide increased strength for the housing.

The inner seal 44 is of resilient metal and is provided with a corrugation 74 forming an oil drip, the corrugation preferably being continuous, extending around the periphery of the seal, but spaced from the edges thereof. The corners of the seal are slit as at 76, permitting the edges 78 outwardly of the corrugation to extend away from the body portion of the journal box lid when it is in open or inoperative position, as viewed in Figure 4. When the lid is in closed position, the portions 78 are of course depressed by the portions of the journal box defining the opening, causing a tight seal, preventing ingress of foreign matter to the journal box and preventing egress of the oil or waste, the oil drip tending to direct the oil inwardly of the journal box.

In the form of the construction shown in Figure 5, the journal box lid 100 is provided with the corrugation 102 forming the oil drip, and a resilient metallic member 104 is spot welded as at 106 outwardly of the corrugation 102, the edges being split as at 108 to permit the member extending away from the plane of the lid 100 in normal open position as viewed in Figure 6.

In the construction shown in Figure 7, the journal box 10 is closed by the lid 120 which may or may not be provided with the oil drip, the journal box lid being provided with the oil seal 122 which extends completely around the inside of the journal box lid, being welded thereto as at 124, the edges being slit to permit the ready resilient action of the seal. The inner edges 126 are normally spaced from the lid and free, and the shape of the member 122, due to the knuckle 128, is such that the member itself forms an oil drip.

In the construction shown in Figure 8, the journal box 10 is provided with the lid 130 provided with the drip 132, a seal member 134 being welded as at 136 to the lid and extending around the periphery thereof. The lid is outwardly corrugated as at 138 to provide a recess for receiving the outwardly projecting portion 140 of the seal, which projecting portion forms a clip for the packing 142, which packing is preferably of soft laid cotton rope, rolled felt, or the like. In this case the packing holder or seal member 134, instead of being a complete member, may be made up in four parts, and this of course is equally applicable to any of the seal members which are not continuous across the inner face of the journal box lid, such as shown in Figures 1 and 10.

In the construction shown in Figure 9, the journal box 10 is provided with the lid 150 having the seal member 152 secured thereto as at 154 and extending inwardly, being provided with the inwardly curved portion 156 tending normally to urge the dust ring or seal toward the journal box by a spring action.

The construction shown in Figure 10 is similar to that shown in Figures 1 to 4, inclusive, with the exception that the journal box lid 160 is outwardly corrugated as at 162 for strength purposes, the corrugation being preferably parallel to the sides of the journal box lid.

In the construction shown in Figure 11, the journal box is provided with the lid 170, the lid being inwardly corrugated as at 172 for strength and oil drip purposes. The dust ring 174 is preferably of resilient metal as before, being spot welded to the lid as at 176 and corrugated as at 178, providing an additional oil drip and strength member. The outer edge 180 is free and adapted to form the seal with the journal box.

In the form of inner seal shown in Figure 12, the plate 190 is shown apertured at the center as at 192 and is provided with a corrugation 194, the edges being slit as at 196 for permitting ready flexure of the ring, and it will be noticed that the slit 196 does not traverse corrugation 194, though this may be the case in this embodiment as well as in Figure 1. This form of dust ring is applicable to any of the forms of dust guard members which are not complete plates, but is particularly applicable to that form shown in Figure 11.

It is to be understood that we do not wish to be limited by the exact embodiments of the device shown, which are merely by way of illustration and not limitation, as various and other forms of the device will of course be apparent to those skilled in the art without departing from the spirit of the invention or the scope of the claims.

We claim:

1. A lid for a journal box or the like, comprising a member having a body portion, and a guard member having a portion secured to said body portion and provided with a free edge spaced in relation thereto and adapted to be disposed between said body portion and box when said lid is in its closed position.

2. A lid for a journal box or the like, comprising a member having a body portion, and a guard member having its inner portion secured to said body portion and provided with a free outer edge normally spaced in relation thereto, said free edge being adapted to be disposed between said body portion and box when said lid is in its closed position.

3. A lid for a journal box or the like, comprising a member having a body portion, and a guard member having a portion secured to said body portion and provided with a resilient free edge normally in spaced relation thereto and adapted to be disposed between said body portion and box when said lid is in its closed position, said

guard member having an inwardly disposed protuberance substantially coextensive with said free edge.

4. A lid for a journal box or the like, comprising a member having a body portion, and a guard member having a portion secured to said body portion and provided with a resilient free edge normally in spaced relation thereto and adapted to be disposed between said body portion and box when said lid is in its closed position, one of said members having an inwardly disposed protuberance substantially coextensive with the periphery thereof and providing a drip portion.

5. A journal box comprising a member having a body portion, a guard member secured thereto and having a free edge portion normally spaced in relation to said body portion, said guard member having slitted portions forming resilient sealing means for said lid.

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