May 21, 1968 J. J. HENNESSY, JR 3,384,381

RAILWAY JOURNAL BOX LID SEAL

Filed Aug. 4, 1966

FIG. 1

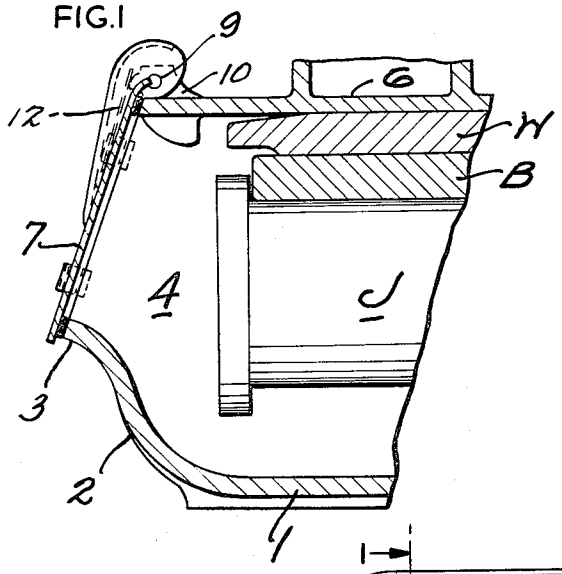


FIG. 4

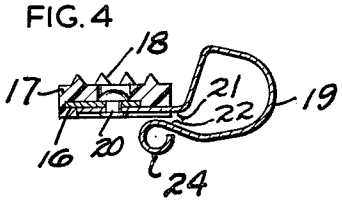


FIG. 2

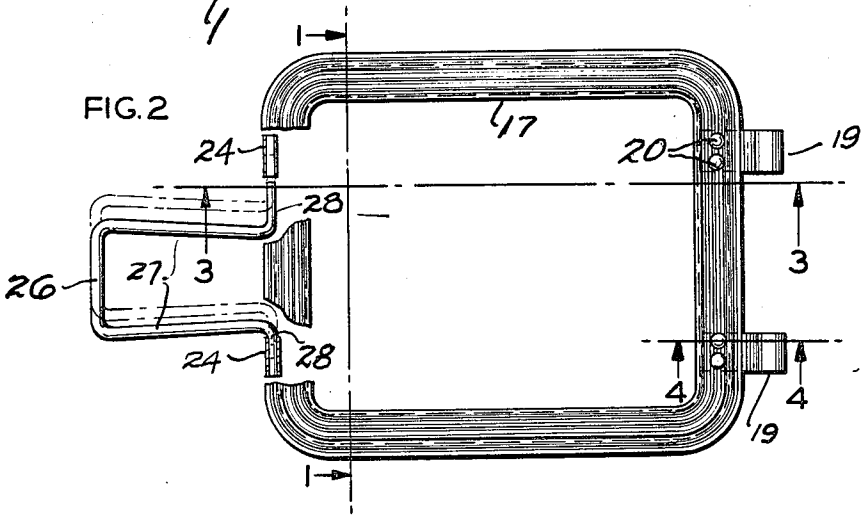


FIG. 3

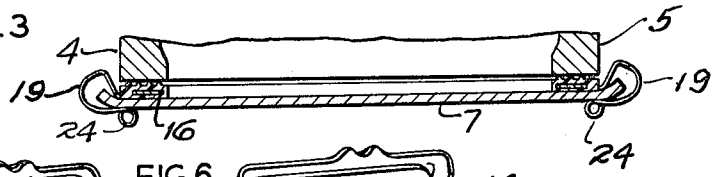


FIG. 5

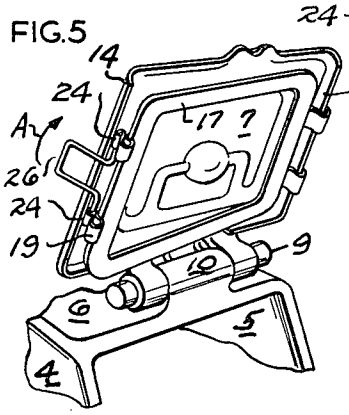
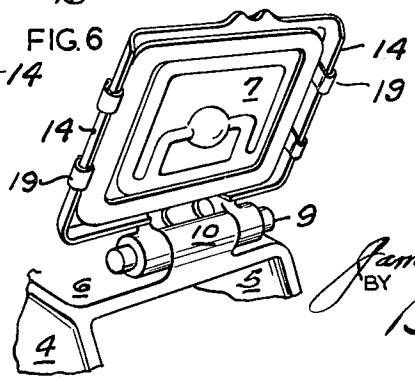


FIG. 6



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3,384,381
RAILWAY JOURNAL BOX LID SEAL

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6 Claims. (Cl. 277—10)

The invention relates to railway journal boxes of the type having an open outer end and a plate-like lid for closing the opening hinged to the outer end of one wall of the box and normally spring-pressed to a position in which it engages the outer ends of the other walls to close the box opening.

The invention includes a seal in the form of a flat open rectangular frame of rubber-like material between the lid and the ends of the box walls and the seal is attached to the lid by C-shaped stiff metal spring clips each having a pair of jaws receiving between them the marginal portion of the lid. Such seal structure is disclosed in United States Patent 3,161,444 issued to the present inventor, and while useful for its intended purpose, is not readily applied to and removed from the lid and is susceptible to disalignment with the ends of box walls and it is desired to modify and supplement the seal to facilitate its application to and removal from a journal lid and to increase its effective sealing qualities.

This object is attained by providing the open rectangular seal with a stiffening member holding the seal to its contour and to which the attaching clips are secured, without materially decreasing the capacity of the seal to flex transversely of its general plane according to the irregularities of the opposing surfaces of the box and lid, and by the provision of a simple lever-like applicator engageable with the edge of the stiffener member as well as the edge of the lid to spread opposing clip jaws apart for ready insertion of the lid margin between them and to facilitate removal of the seal from the lid.

In the accompanying drawings illustrating an embodiment of the invention:

FIG. 1 is a vertical longitudinal section through the forward portion of an Association of American Railroads (A.A.R.) standard axle journal box having the improved seal mounted on its lid.

FIG. 2 is a front view of the seal, sectioned in part to better illustrate the structure, and showing an applying and removal tool assembled therewith.

FIG. 3 is a horizontal section through the lid and seal on the line 3—3 of FIG. 2.

FIG. 4 is a similar detail section on line 4—4 of FIG. 2 and on a larger scale, but showing the seal only.

FIG. 5 is perspective of the seal during its application to the box lid.

FIG. 6 is a similar perspective showing the seal assembled with the lid and the applicator removed.

The cast metal journal box includes a bottom wall **1**, the forward portion of which curves upwardly at **2**, terminating in an outturned lip **3**, side walls **4**, **5** and a top wall **6**.

The forward ends of the walls lie in a common plane and define a rectangular opening to the box interior for access to the journal J and for insertion and removal of the usual bearing B and wedge W. A plate-like metal lid **7** is hinged at **9** to lug **10** on top wall **6** and a spring **12** thrusts the lid toward the ends of the box walls to close the opening as shown in FIG. 1. The side margins **14** of the lid may be inclined to the general plane of the lid to better deflect air currents from the joint between the box and lid.

The seal includes an open rectangular frame **16** of rigid material which is enclosed in an envelope **17** of

rubber-like plastic material which yields to irregularities in the opposing surfaces of the box and lid and for this purpose one or both faces of the envelope may be ribbed, as indicated at **18**, to yield more readily. A pair of C-shaped clips **19** of stiff spring metal are secured by rivets **20** or otherwise to each of the upright sides of the frame. Each clip forms a pair of opposing jaws **21**, **22** urged toward each other at their outer ends but the jaws of each clip may be pried apart to receive the margin of the lid between them and firmly grip the lid to maintain assembly of the lid and seal against their separation by any jars, blows or other forces applied directly to the seal or to the lid. The outer jaw of each clip terminates in a return bend forming a sleeve **24** the axis of which is substantially parallel to the plane of the seal and is aligned with the axis of sleeve **24** of the corresponding jaw on the other clip on the same side of the frame.

The above description corresponds generally to that disclosde in Patent 3,161,444 except that the patent does not show the rigid frame **16**, enveloped by the yielding seal material.

When the seal is applied to the lid, the jaws at one side of the seal (e.g. at the right hand side of FIG. 2) are readily thrust manually over one margin of the lid to the position indicated at the left hand side of FIG. 3.

To facilitate the mounting and removal of the opposite pair of jaws **19** there is provided an applicator tool comprising an elongated rod bent into a U-shape and having a crosspiece **26** and legs **27** with outturned ends **28** one of which is received in one jaw sleeve **24** as indicated at the left hand side of FIG. 2 and then the tool is shifted to the broken line position. The member **26**, **27**, **28** then becomes a lever which may be rotated manually (FIG. 5) in one direction (see arrow A) to fulcrum about the adjacent edge of the lid and spread the jaws apart to receive and, when released, to snap over lid margin **14** and tightly grip the lid and securely hold the seal and lid assembled.

To readily disassemble the lid and seal, the lever may be again applied and rotated in the opposite direction against the lid edge as a fulcrum to spread the jaws so as to release the lid from the jaws and permit the lid to be removed from between them. When not being used to spread the clip jaws apart, the lever is readily detached from the seal by shifting the outturned ends to the full line position shown in FIG. 2 and dislodging one end **28** from its engaged sleeve **24** then shifting in the reverse direction to free the other end **28** from the other sleeve.

The structure above described retains the desirable qualities of the seal of the above mentioned patent namely, lightness, low cost and mounting on the box lid to engage the edges of the walls about the opening in the end of the box without machining the lid or bonding or welding the seal to the lid or using rivets, bolts or other attaching means which make it virtually impossible to readily apply a lid seal in the field or to renew a seal when it has worn out or otherwise needs replacement, thus avoiding substantial expense for time and equipment. The easy spreading of the clip jaws by the lever only requires a few seconds and avoids the use of a prying tool on each jaw, or trying to hammer the clips onto or off of the lid which may break the jaws or bend them out of shape. Ordinarily a single applicator will be included with each box of seals. It will be understood that a single clip, particularly a wider clip, may be used at the end of the frame instead of two spaced clips as illustrated. Other details of the structure may be varied without departing from the spirit of the invention and the exclusive use of those modifications coming within the scope of the claims is contemplated.

What is claimed is:

1. In combination a railway journal box lid seal of rubber-like material, comprising four wide relatively

thin side members forming an open rectangular frame, having an outer contour corresponding to the contour of the lid to which it is to be applied,

there being a C-shaped attaching clip of stiff spring material opening inwardly of the frame and including a jaw secured to one side member of the frame and an opposing jaw urged toward the first mentioned jaw and movable away from the latter to receive the marginal portion of the box lid between the jaws,

a similar attaching clip similarly secured to the opposite side member of the frame,

and a lever member pivoted on said second mentioned jaw and adapted to engage with the outer edge of the lid and to rotate about the latter as a fulcrum to spread said jaws apart to receive the marginal portion of the lid between them.

2. A combination as described in claim 1 in which there are a pair of C-shaped attaching clips spaced apart on at least one of the two opposite side members of the frame,

one jaw of each of said pair of clips terminating in a sleeve,

the sleeves of the jaws of said pair having a common axis substantially paralleling the plane of the frame,

said lever member having elements pivotally engaging said sleeves, said lever member being engageable with the adjacent edge of the lid as a fulcrum and movable manually to force the jaws of both of said pair of clips apart to permit entrance or removal of the lid to and from between said jaws.

3. A combination as described in claim 1 in which there are a pair of C-shaped attaching clips spaced apart on at least one of the two opposite side members of the frame,

one jaw of each of said pair of clips terminating in a sleeve,

the sleeves of the jaws of said pair having a common axis substantially paralleling the plane of the frame,

there being an elongated U-shaped rod forming said

lever member including a cross-piece and a pair of legs extending therefrom with outer ends diverging from each other in the general plane of the cross-piece and legs, and being readily insertable in and removable from said sleeves by moving said leg ends along the frame side member,

said lever member being swingable about the common axis of said sleeves to fulcrum the lever member legs against the adjacent edge of the lid whereby the jaws of both the associated clips may be forced apart to receive the adjacent margin of the lid between them.

4. A combination as described in claim 3 in which the distance between the outer ends of the legs is no greater than the distance between the opposing edges of the pair of sleeves, and the lever member is shiftable bodily along the frame side member to insert the leg terminals into and out of the jaw sleeves.

5. A combination as described in claim 2 in which a relatively rigid metallic inner frame is enveloped by the frame of rubber-like material, and the spring clip jaws are rigidly secured directly to said metallic inner frame.

6. A combination as described in claim 4 in which the distance between said legs is less than the distance between the opposing edges of said pair of sleeves, the lever member being slidable bodily along the frame side member toward and away from each of said sleeves alternately to insert said ends in and to remove said ends from respective sleeves.

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C. DORITY, *Assistant Examiner.*