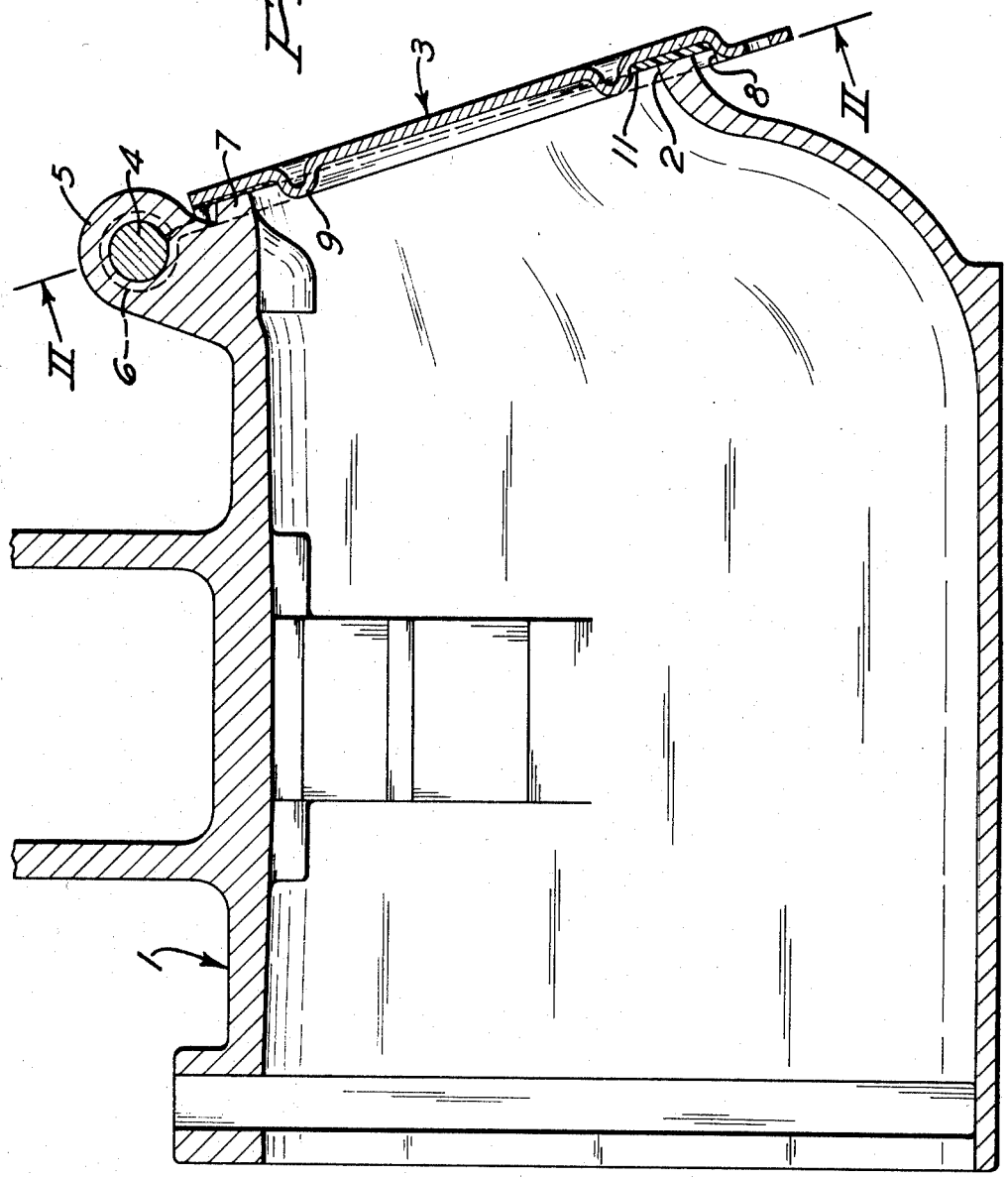
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JOURNAL BOX LID GASKET AND METHOD

Filed Feb. 23, 1967 Sheet 1 of 2

Fig. 1



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Sheet 2 of 2

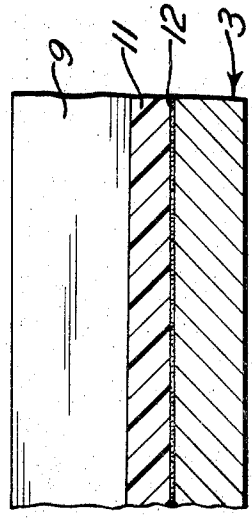


Fig. 4

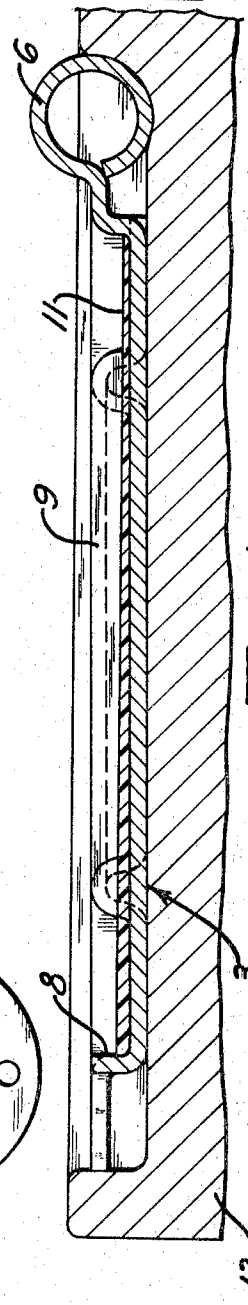


Fig. 3

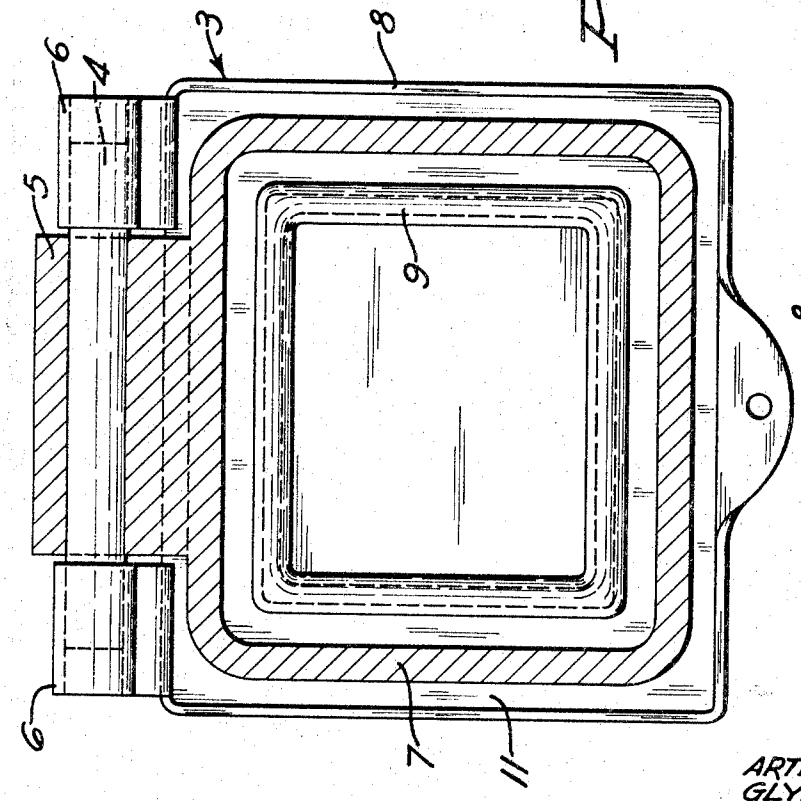


Fig. 2

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United States Patent Office 3,435,981
Patented Apr. 1, 1969

3,435,981

JOURNAL BOX LID GASKET AND METHOD

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Filed Feb. 23, 1967, Ser. No. 618,181
Int. Cl. B65d 53/00; F16c 3/02, 35/00
U.S. Cl. 220—46 6 Claims

ABSTRACT OF THE DISCLOSURE

A railroad car journal box lid is provided with a resilient polyvinyl chloride gasket, preferably by pouring liquid polyvinyl chloride onto the inner side of the lid after a primer has been applied to the lid, and then heat curing the polyvinyl chloride.

It is highly desirable that railroad car journal boxes be sealed in order to prevent the entrance of foreign matter, such as dust, sand, coal dust, and water. The access openings to such boxes are covered by hinged metal lids, but they do not seal the openings. Gaskets have been proposed for making the seal, but they have not been entirely satisfactory. Objections have been that the gaskets do not stay attached to the lids, or special operations on the lids are required in order to attach the gaskets securely to them. Another objection is that the gaskets used heretofore have deteriorated in use, due to the fact that they have not been resistant enough to one or more of the following elements: water, oil, corrosive liquids, dust, sand, lime, and coal dust. Also, at low temperatures the gaskets have hardened and have not sealed as well as when they are softer at higher temperatures.

It is among the objects of this invention to provide a gasket and a manner of making it and joining it to a journal box lid so that it will serve as an efficient seal at all ambient temperatures without being affected materially by liquids and abrasive materials encountered in railroad service.

The preferred embodiment of the invention is illustrated in the accompanying drawings, in which

FIG. 1 is a central lonigtudinal section through a journal box and lid;

FIG. 2 is a cross section taken on the line II—II of FIG. 1;

FIG. 3 is an enlarged vertical section of the lid resting on a support; and

FIG. 4 is a further enlarged portion of FIG. 3.

Referring to FIGS. 1 and 2 of the drawings, a railroad car journal box **1** is shown which is adapted to receive a car axle extending through a seal at the inner end of the box. The outer end of the box is provided with the usual access opening **2**, which normally is covered by a metal lid **3** hinged to the top of the box by a hinge pin **4** extending through a lug **5** projecting from the box. The ends of the pin extend into bearings **6** formed on the top of the lid. The lid may be held firmly against the box in various ways, which are well known and need not be illustrated. Around the access opening of the box there is a lip **7** with a flat face that is received in a shallow channel formed in the inner or box side of the lid by providing the lid with an inwardly projecting peripheral flange **8** spaced from a rectangular bead **9** integral with the lid. The inner surface of the lid in the channel of an ordinary lid is supposed to engage flat against lip **7** of the journal box but, due to the usual irregularities in such metal elements, there usually are small openings between the lid and the box that permit the entrance of water and fine abrasive materials.

Such openings are avoided in accordance with this invention, by using a resilient gasket **11** in the lid channel

for engaging the lip of the journal box opening. The lid presses the gasket against the lip to form a seal between the lid and box. Since the gasket will hold the lid itself a short distance away from the box, the lower part of the lid will be spaced farther from the plane of the flat face of the lip than the upper part of the lid will be spaced from the lip. To make sure that the gasket will fill this tapered space and engage the lip all around the box opening with substantially the same pressure, the gasket is tapered in thickness from its lower edge to its upper edge.

The material of which the gasket is made is important. It is polyvinyl chloride that is solid but resilient at both high and low ambient temperatures, and is substantially unaffected by water, gasoline and oil and by abrasive materials that may be thrown against it as the train travels along the track. Such a material is sold as a liquid by Michigan Chrome and Chemical Company, Detroit, Mich., as type PVC–MC768. The liquid, formed into the shape of the gasket, is cured by heat at a temperature between 350 degrees and 360 degrees F. for a minimum of about 10 minutes. Such a gasket can be formed independently of the lid and then attached to it by a suitable adhesive.

On the other hand, a more secure connection between the gasket and lid can be produced if the gasket is formed in place against the lid. To do this, the inner surface of the lid first is sand blasted to get down to the parent metal and then a primer is applied to the inner surface of the lid in its channel by painting or spraying. This thin priming coat **12** (FIG. 4) is an epoxy primer sold by the above-mentioned company as C–1445. It is a blend of thermo plastic and thermo setting resins that achieves optimum adhesion with the polyvinyl chloride. Either before or after the primer is applied, the lid is supported with its inner side up by means of a suitable fixture **13**, as shown in FIG. 3. After the coating has dried, a layer of the liquid polyvinyl chloride is poured into the lid channel to cover the primer to the desired depth. In order to produce the desired tapered gasket, the upper edge of the reclining lid is supported at a slightly higher level than its lower edge, as shown. In many cases, enough polyvinyl chloride is poured onto the lid to form a layer about ⅛ inch thick at its lower edge and tapering to about 1/16 inch at the upper edge, but it depends upon the relationship of the lid to the journal box. The liquid material is prevented from running off the lid by the side walls of the channel. If the peripheral flange **8** does not extend between the bearings at the top of the lid, a strip of suitable material may be applied to that area temporarily to form a flange or dam.

After the layer of liquid polyvinyl chloride has been poured onto the lid, the lid is transported to an oven without changing the inclination of the lid and then the material is heat cured as explained above. This produces the desired durable resilient gasket which is intimately joined by the primer to the surface of the metal lid. There is no danger of the gasket pulling away from the lid. It is permanently attached to it without the lid having to be altered in any way. When the lid is installed on the journal box, the gasket will be seen to taper from bottom to top as shown in FIG. 1 and will engage the lip of the box opening with substantially uniform pressure entirely around the opening.

According to the provisions of the patent statutes, we have explained the principle of our invention and have illustrated and described what we now consider to represent its best embodiment. However, we desire to have it understood that, within the scope of the appended claims, the invention may be practiced otherwise than as specifically illustrated and described.

We claim:

1. The method of providing the inner side of a railroad car journal box lid with a sealing gasket, comprising supporting the lid with its inner side up, applying a coating of epoxy primer to the upper surface of the lid, allowing the coating to dry, pouring a layer of liquid polyvinyl chloride on the primer, and heat curing the polyvinyl chloride to form a resilient gasket permanently joined to the lid by said coating.

2. The method recited in claim 1, in which the upper edge of the lid is supported at a slightly higher level than its lower edge to taper the depth of the polyvinyl chloride layer from said lower edge to its upper edge.

3. The method recited in claim 1, including first grit blasting the inner side of the lid to clean it, and supporting the upper edge of the lid at a slightly higher level than its lower edge while said polyvinyl chloride is being poured on the primer and during said curing, whereby said gasket will be tapered in thickness from its lower edge to its upper edge.

4. A lid assembly for sealing the access opening in the outer end of a railroad car journal box, said assembly comprising a metal lid formed at its top to receive a horizontal hinge pin, an epoxy primer coating on the box side of the lid, and a resilient layer of polyvinyl chloride permanently joined by said coating to the lid and forming a gasket for engaging the box around its access opening.

5. A lid assembly according to claim 4, in which the gasket tapers in thickness from its lower edge upwardly to its upper edge.

6. The method recited in claim 3, in which said curing is effected at a temperature between 350° and 360° F. for at least ten minutes.

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U.S. Cl. X.R.

117—75; 277—199; 308—47