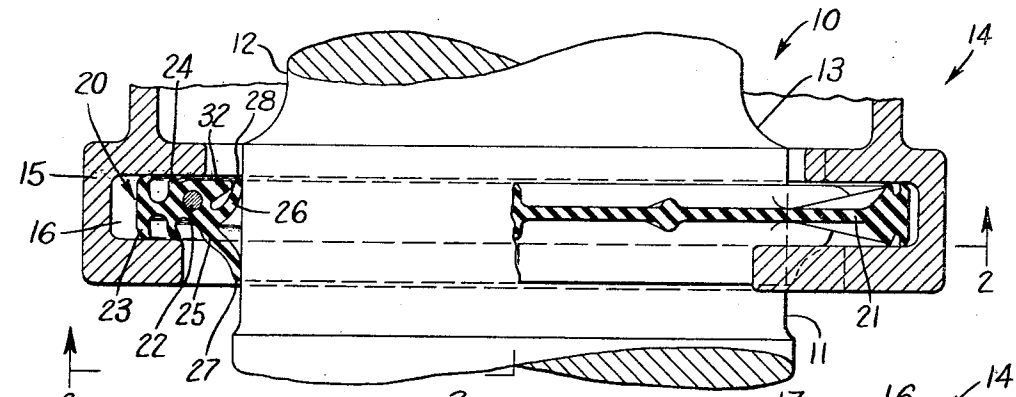
Feb. 10, 1970 T. J. SWEGER 3,494,625

DUST GUARD SEAL FOR RAILWAY CAR JOURNAL BOXES

Filed Nov. 14, 1967 6 Sheets-Sheet 1

Fig. 1.



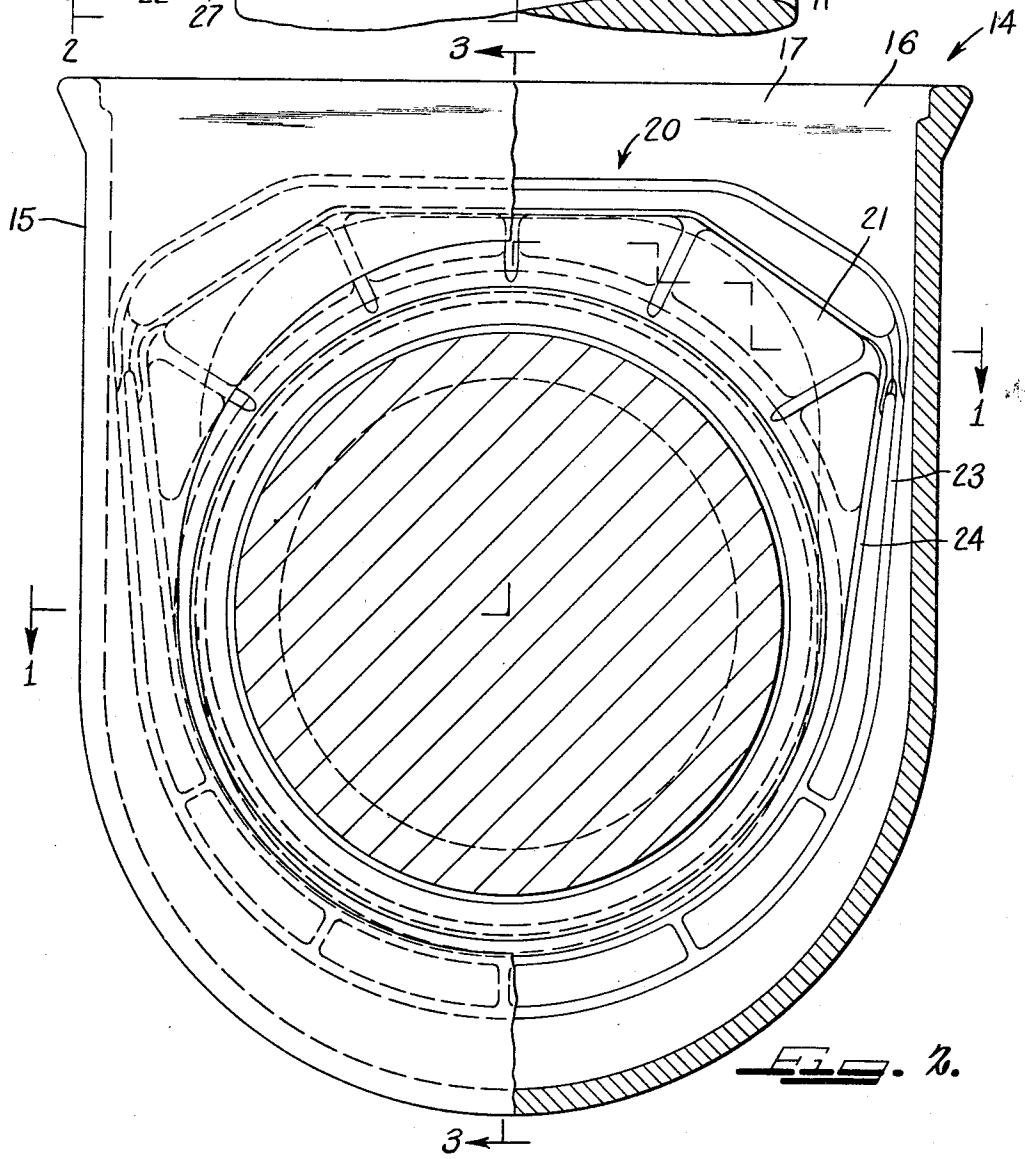


Fig. 2.

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DUST GUARD SEAL FOR RAILWAY CAR JOURNAL BOXES

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Fig. 3.

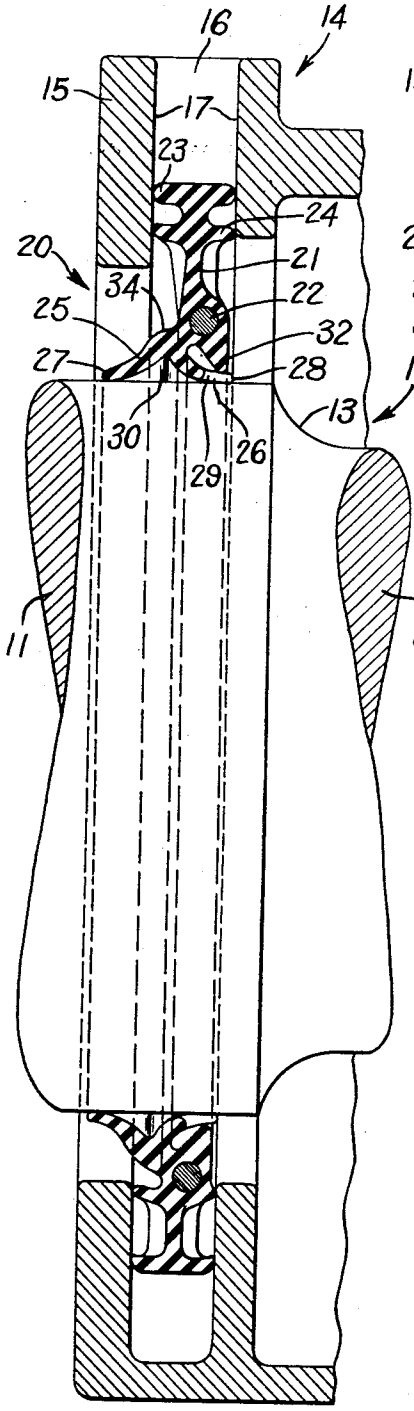


Fig. 4.

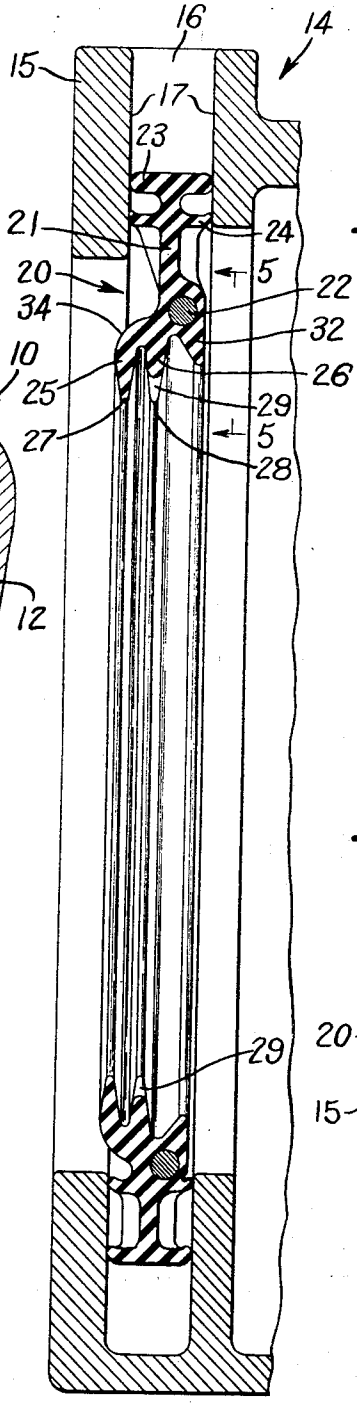


Fig. 5.

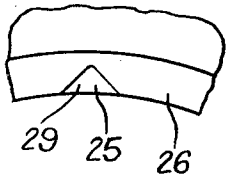
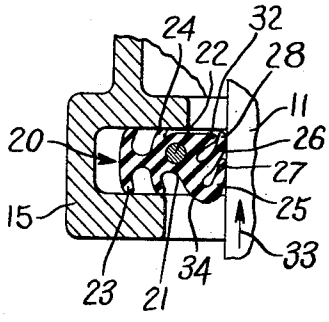


Fig. 6.



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DUST GUARD SEAL FOR RAILWAY CAR JOURNAL BOXES

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Fig. 8

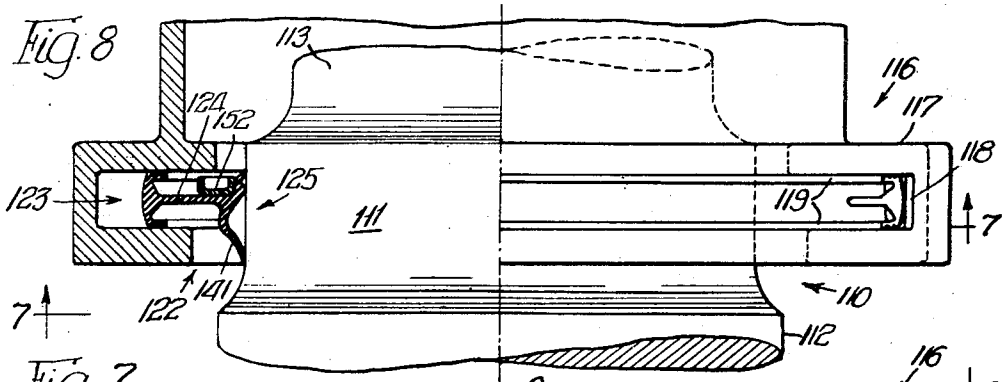
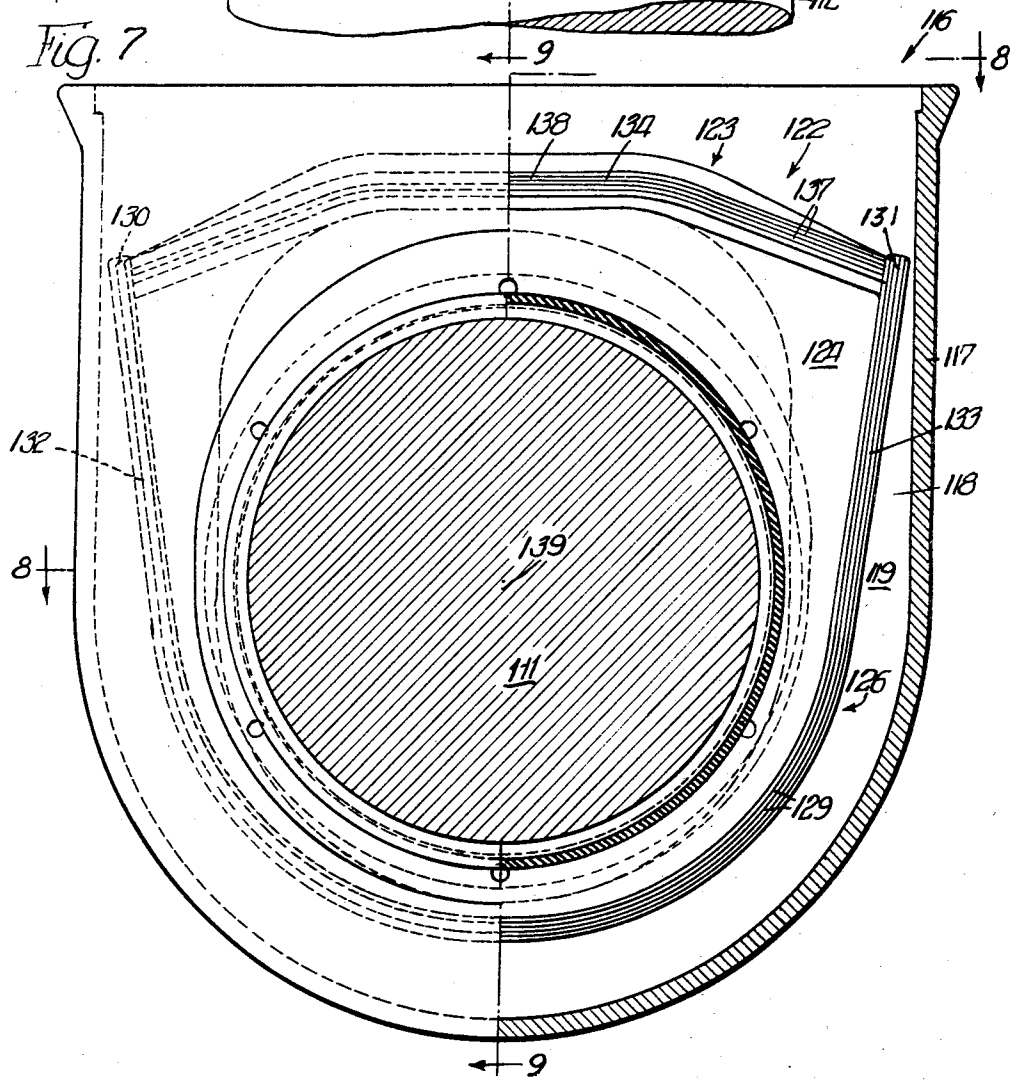


Fig. 7



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DUST GUARD SEAL FOR RAILWAY CAR JOURNAL BOXES

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Fig. 9

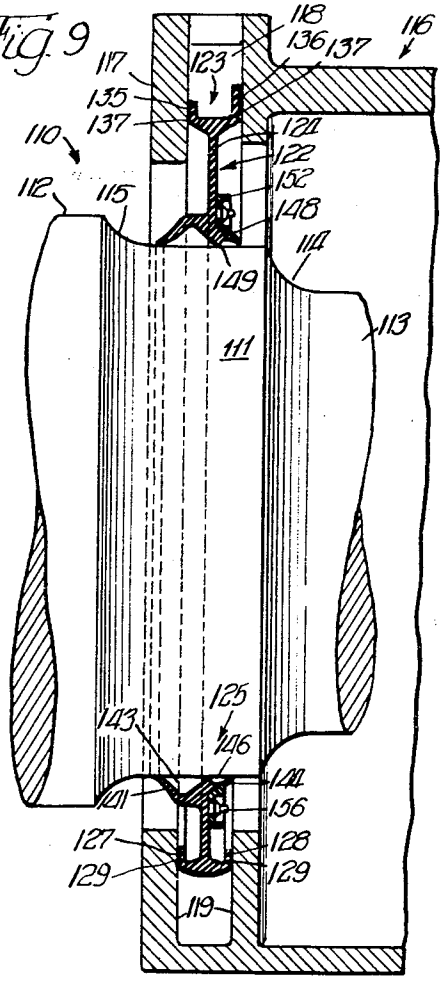


Fig. 10

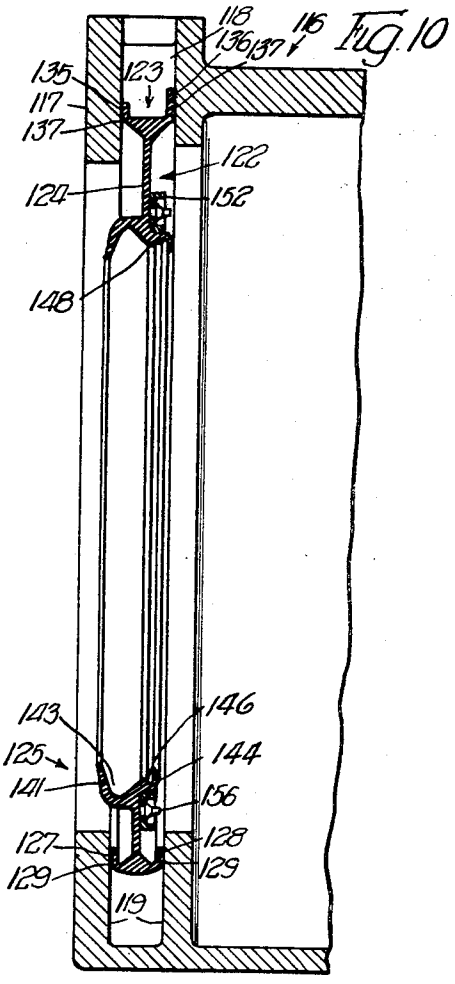


Fig. 17

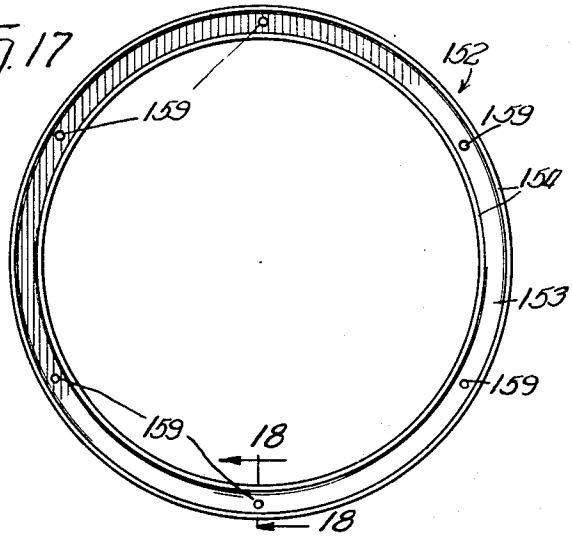
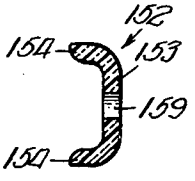


Fig. 18



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DUST GUARD SEAL FOR RAILWAY CAR JOURNAL BOXES

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Fig. 12

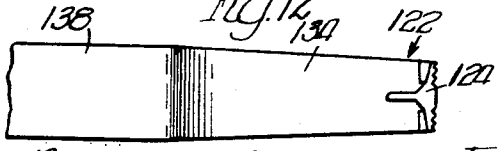


Fig. 11

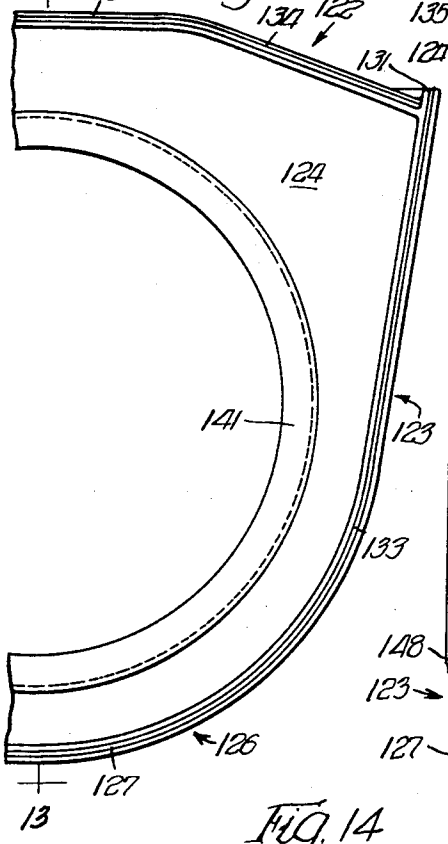


Fig. 13

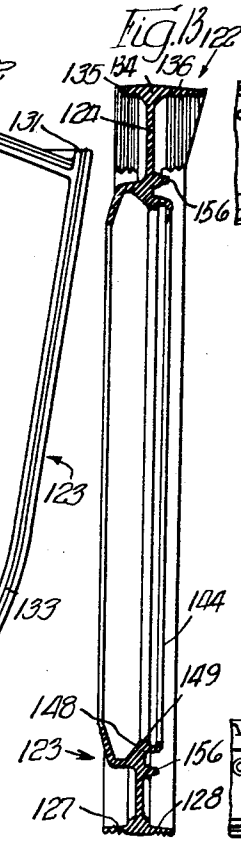


Fig. 16

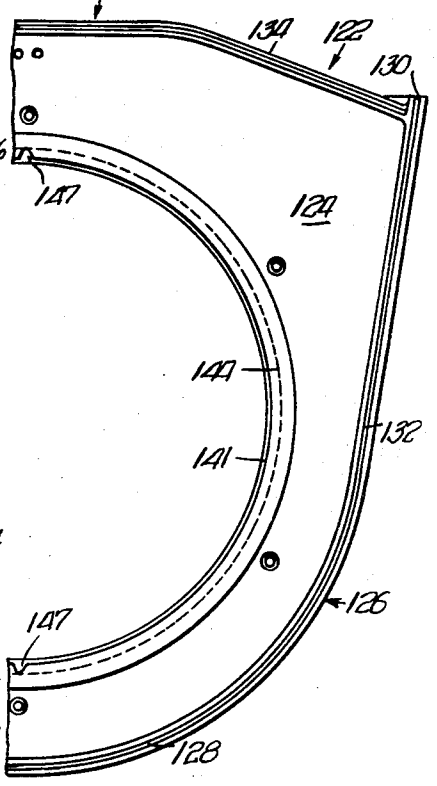


Fig. 14

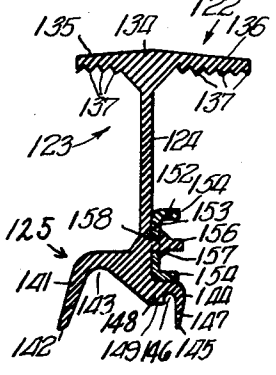
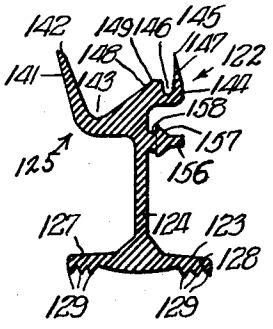


Fig. 15



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DUST GUARD SEAL FOR RAILWAY CAR JOURNAL BOXES

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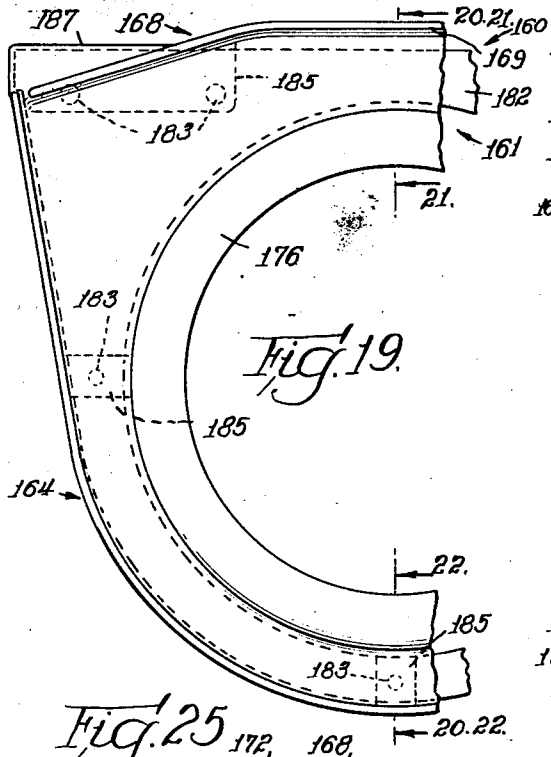


Fig. 19.

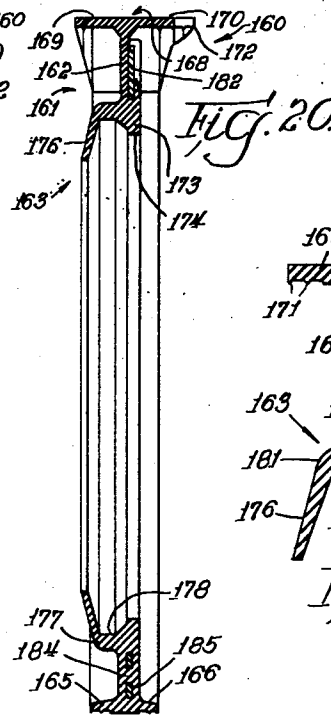


Fig. 20.

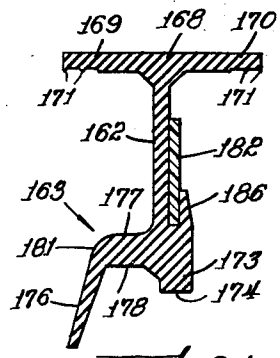


Fig. 21.

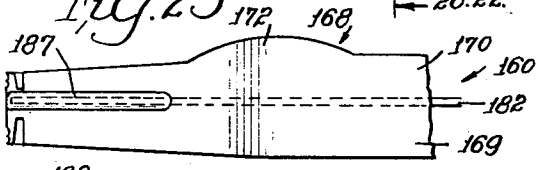


Fig. 25

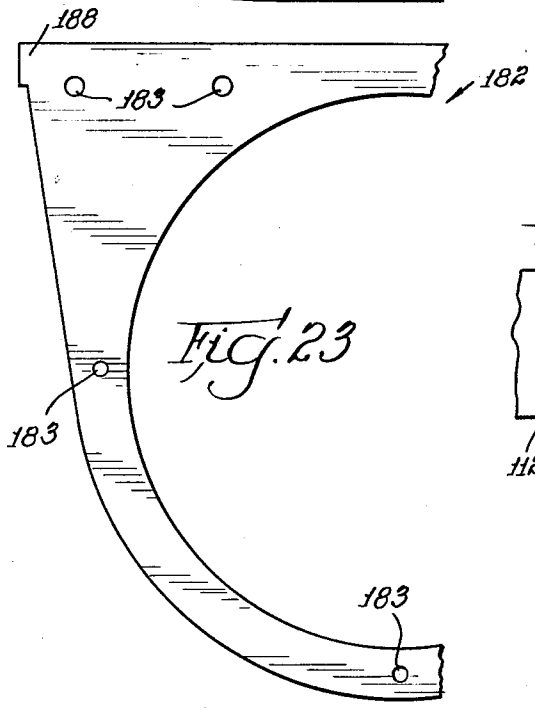


Fig. 23

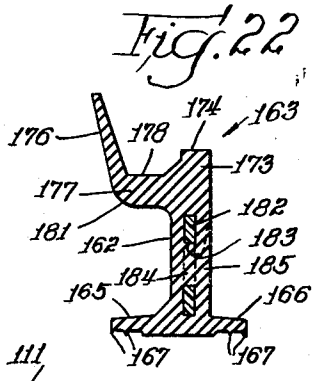


Fig. 22

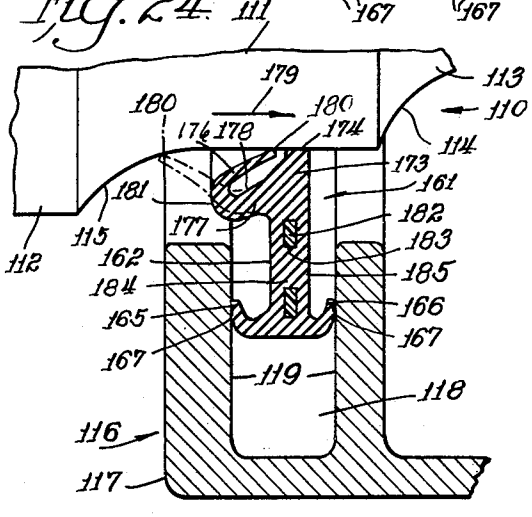


Fig. 24

United States Patent Office 3,494,625 Patented Feb. 10, 1970

3,494,625

DUST GUARD SEAL FOR RAILWAY CAR JOURNAL BOXES

Theodore J. Sweger, Naperville, Ill., assignor to Illinois Railway Equipment Company, Chicago, Ill., a corporation of Illinois

Continuation-in-part of applications Ser. No. 529,131, Feb. 21, 1966, and Ser. No. 571,587, Aug. 10, 1966. This application Nov. 14, 1967, Ser. No. 682,868

Int. Cl. F16j 15/32, 15/54

U.S. Cl. 277—132 10 Claims

ABSTRACT OF THE DISCLOSURE

Dust guard for railway car journal box having sealing lips one of which is offset from the body portion in dust guard well and shifts from initial position to running position after insertion of the axle. The dust guard includes major and minor sealing lips with lubricant containing grooves therebetween. A backup rib overlies the distal portion of one of the lips to hold it in place. A reenforcing member extends along the body portion of the dust guard. Openings in the reenforcing member receive portions of the dust guard to provide an integral bond thereto. One of the lips is notched to facilitate flow of lubricant into the space between the lips.

This invention is an improvement over the construction shown in U.S. Patent No. 3,353,831, issued Nov. 21, 1967. This application is a continuation-in-part of application Ser. No. 529,131, filed Feb. 21, 1966 now abandoned and of application Ser. No. 571,587, filed Aug. 10, 1966 now abandoned.

Among the objects of this invention are: To provide an improved seal for the seat of a railway car axle to prevent entrance of foreign particles into the lubricant containing journal box and between the axle journal and the bearing therefor; to form the seal of one piece construction and of flexible material having the outer portion extending from a body portion arranged to engage frictionally the juxtaposed walls of the dust guard well and the inner portion having inwardly extending lips for engaging the seat of the car axle and arranged in normal operation to extend in opposite directions therealong; to backup the inner lip on the side of the dust guard adjacent the axle journal by a rib overlying this inner lip under normal operating conditions; to construct the inner lip such that it collects lubricant from the surface of the seat and causes it to flow to the space between the lips and between them and the seat; to reenforce the dust guard by a tension member extending therethrough and around the inwardly extending lips; to form the dust guard and oil seal of one piece flexible rubberlike material with a major sealing lip offset to the wheel side of the axle from a radial web portion to engage a seat on the axle and a minor sealing lip offset to the journal side of the axle from the web portion also to engage the seat; to provide large and small cross section grooves along the major and minor sealing lips to retain lubricant that flows through notches in the minor sealing lip from the journal box and over the seat; to form a peripheral portion integrally with the web having laterally extending longitudinally ribbed surfaces for frictionally gripping the juxtaposed side walls of the dust guard well in the journal box; to stiffen the dust guard and oil seal against non uniform movement, particularly movement transverse to the axis of rotation of the axle; to mount a channel shaped stiffening ring on the web by plug and socket means; to form plug means integral with the web for insertion in the socket means in the ring in the form of openings in the web thereof; and to provide a single lip on the wheel side of the dust guard which is arranged, on application of the axle to the journal box, to have its distal edge turned underneath its supporting web and on rotation of the axle to right itself and extend toward the wheel while engaging the seat on the axle.

In the drawings: FIG. 1 is a horizontal sectional view taken generally along the line **1**—**1** of FIG. 2 and showing a portion of a railway car axle and the associated dust guard well. FIG. 2 is a view, partly in end elevation and partly in section, taken generally along the line **2**—**2** of FIG. 1. FIG. 3 is a vertical sectional view taken generally along the line **3**—**3** of FIG. 2. FIG. 4 is a view, similar to FIG. 3, showing the installation of the dust guard of the present invention in the dust guard well before the railway car axle is inserted. FIG. 5 is a view, in side elevation, taken generally along the line **5**—**5** of FIG. 4 showing a portion of the dust guard. FIG. 6 is a view, similar to the left portion of FIG. 1, showing how the rear or outer lip is folded over on insertion of the railway car axle and before it has had an opportunity to right itself. FIG. 7 is a sectional view of a modified form of this invention taken generally along the line **7**—**7** of FIG. 8 and shows the dust guard well of a railway car journal box, partly in half cross section and the remainder in elevation with a railway car axle therein and surrounded by a dust guard and oil seal embodying this invention. FIG. 8 is a view, partly in horizontal section aind partly in top plan, and taken generally along the line **8**—**8** of FIG. 7. FIG. 9 is a vertical sectional view taken generally along the line **9**—**9** of FIG. 7. FIG. 10 is a view, similar to FIG. 9, and shows the dust guard and oil seal with the railway car axle absent. FIG. 11 is a view of a portion of the dust guard and oil seal looking from the wheel side. FIG. 12 is a top plan view of the construction shown in FIG. 11. FIG. 13 is a vertical sectional view taken generally along the line **13**—**13** of FIG. 11. FIG. 14 is a view, at an enlarged scale, of the upper portion of the dust guard and oil seal as shown in FIG. 13. FIG. 15 is a view, similar to FIG. 14, of the lower portion of the dust guard and oil seal. FIG. 16 is a view, in side elevation, of the dust guard and oil seal looking from the axle side. FIG. 17 is a view, in side elevation, of the annular stiffening member. FIG. 18 is a vertical sectional view taken generally along the line **18**—**18** of FIG. 17 and at an enlarged scale. FIG. 19 is an elevational view from the wheel side of the axle of a portion of a further modification of the dust guard embodying this invention. FIG. 20 is a vertical sectional view taken generally along the line **20**—**20** of FIG. 19. FIGS. 21 and 22 are detail vertical sectional views taken generally along lines **21**—**21** and **22**—**22** respectively of FIG. 19. FIG. 23 is an elevational view of a portion of the reenforcing ring or stiffener shown in assembled relation in FIGS. 19–22. FIG. 24 is a view, similar to FIG. 6, showing how the sealing lip is folded over on insertion of the axle and before it has righted itself on subsequent rotation of the axle seat. FIG. 25 is a top plan of FIG. 19.

Referring now to FIGS. 1 and 3, the reference character **10** designates, generally, a railway car axle of conventional construction having a seat **11** and an axle journal **12** with a corner journal fillet **13** therebetween. The axle journal **12** is arranged to extend into a journal box, a portion of which is indicated, generally, at **14** and also is of conventional construction. The journal box **14** has an outstanding section **15** in which there is located a dust guard well **16** having parallel faces **17**.

Located in the dust guard well **16** is a dust guard, shown generally at **20**, embodying this invention. The dust guard **20** preferably is of one piece construction and formed of molded elastomeric compound such as a

nitrile elastomer. The dust guard **20** has an annular body portion **21** in which a reenforcing tension member **22** in the form of a steel wire ring is embedded. Formed integrally with the body portion **21** are outer and inner annular flange means **23** and **24** which are arranged to have frictional contact engagement with the parallel faces of the dust guard well **16**.

The purpose of the dust guard **20** is to prevent the entrance of dust particles and the like into the journal box **14**. For this purpose a rear or outer lip **25** and a front or inner lip **26** are formed integrally with the body portion **21** and are arranged to extend radially inwardly therefrom. The inner lip **26** is offset slightly from the body portion **21** and away from the journal box **14** while the outer lip **25** is further offset from the body portion **21** and further away from the journal box **14**. As shown in FIGS. **1** and **3** the lips **25** and **26**, in normal operation, are arranged to extend in opposite directions with the surfaces thereof adjacent the respective distal edges **27** and **28** in engagement with the surface of the seat **11**. Notches **29**, preferably two in number, FIGS. **4** and **5**, are provided in the front or inner lip **26** in which small amounts of lubricant are collected which flow therefrom into space **30** between the lips **25** and **26** and underneath the surfaces adjacent the distal edges **27** and **28** to provide a layer of lubricant between them and the surface of the seat **11** to minimize wear of the lips **25** and **26**.

With a view to holding the front or inner lip **26** in juxtaposition to the surface of the seat **11**, a backup rib **32** is formed integrally with the body portion **21** of the dust guard **20**, is offset slightly from the body portion **21**, and is nearer to the journal box **14** than the inner lip **26**. In normal operation, as shown in FIGS. **1** and **3**, the distal edge of the backup rib **32** overlies the adjacent outer surface of the front or inner lip **26**. Since the distal edge of the backup rib **32** is separate from the distal edge **28** of the inner lip **26**, the latter can follow the contour of the seat **11** and move toward it independently of the backup rib **32**.

FIG. **6** shows the relationship of the lips **25** and **26** when the railway car axle **10** is inserted in the direction indicated by arrow **33** into the journal box **14**. Here it will be observed that the rear or outer lip **25** is moved into underlying relation with respect to the front or inner lip **26**. Due to the fact that the outer lip **25** is offset from the body portion **21**, there is provided at its base a section **34** that is eccentric with respect to or is offset from the body portion **21**. The outer fibers in the section **34** are additionally tensioned when the railway car axle **10** is inserted and the outer lip **25** is moved to the position where it underlies the inner lip **26**. However, as soon as the seat **11** begins to rotate, due to the provision of the eccentric of offset section **34** at the base of the rear or outer lip **25** which is offset from the body portion **21** and as a result of the added tension in the outer fibers of the eccentric or offset section **34** due to the looped configuration of the rear or outer lip **25**, it tends to right itself and to shift on continued rotation of the seat **11** from the position shown in FIG. **6** to the normal operating position shown in FIGS. **1** and **3**.

In FIGS. **7**, **8** and **9** of the drawings another embodiment of this invention is shown. Here the reference character **110** designates, generally, a railway car axle which is provided with a seat **111** between the wheel side **112** and the axle journal **113**. A corner journal fillet **114** interconnects the surface of the axle journal **113** with the surface of the seat **111** and a fillet **115** interconnects the surface of the seat **111** with the wheel side **112** of the axle **110**. The axle journal **113**, as is conventional, is positioned in a journal box that is indicated, generally, at **116**. The journal box **116** includes an outstanding section **117** in which a dust guard well **118** is located having parallel faces **119**.

According to this invention a dust guard and oil seal, shown generally at **122**, is positioned in the dust guard well **118**. The dust guard and oil seal **122** is formed of one piece flexible rubberlike material such as nitrile elastomer. It includes a peripheral portion **123**, a web portion **124** that extends radially inwardly therefrom and a sealing portion **125** that extends radially inwardly from the web portion **124**. The sealing portion is arranged to engage the surface of the seat **111**.

The dust guard and oil seal **122**, while of one piece construction, is formed generally of two sections. One of these sections is a U-shaped lower section that is indicated, generally, at **126** and it includes flanges **127** and **128** that are shown more clearly in FIG. **15**. When the dust guard and oil seal **122** is inserted in the dust guard well **118**, the flanges **127** and **128** are turned upwardly as seen in FIGS. **9** and **10** and sealing contact engagement with the juxtaposed parallel faces **119** of the dust guard well **118** is provided by longitudinally extending ribs **129**. The upper ends **130** and **131** of arms **132** and **133**, which form the U-shaped lower section **126**, are joined by the second or top section **134** of the dust guard and oil seal **122**. As shown more clearly in FIG. **14**, the top section **134** includes flanges **135** and **136** with the latter being somewhat wider than the former. Longitudinally extending ribs **137** are formed integrally on the under sides of the flanges **135** and **136** which, as shown in FIGS. **9** and **10**, extend upwardly in the dust guard well **118** with the longitudinally extending ribs **137** providing a sealing engagement with the juxtaposed parallel faces **119**. As shown in FIGS. **7**, **11** and **16** the top section **134** is bowed upwardly centrally at **138**. The arrangement is such that, as the axis of rotation **139** of the railway car axle **110** shifts laterally toward one or the other side of the journal box **116**, there is a tendency for the dust guard and oil seal **122** to rotate about one or the other of the upper ends **130** or **131** on engagement with the juxtaposed surface of the dust guard well **118**. As will appear hereinafter, provision is made for stiffening the relatively flexible dust guard and oil seal **122** to accommodate this transverse movement of the axle **110** with respect to the journal box **116**.

The sealing portion **125**, FIGS. **14** and **15**, includes a major sealing lip **141** which is located in engagement with the surface of the seat **111** and adjacent the wheel side **112** of the axle **110** with respect to the web portion **124**. The major sealing lip **141** has a beveled edge **142** to provide a relatively wide area of contact engagement with the surface of the seat **111**. A relatively large cross section groove **143** extends along the major sealing lip **141** and constitutes a reservoir for lubricant that flows over the surface of the seat **111** from the journal box **116**. The sealing portion **125** also includes an annular minor sealing lip **144** which has a feather edge **145** for engaging the surface of the seat **111**. The minor sealing lip **144** is located on the side of the plane of the web portion **124** opposite the location of the annular major sealing lip **141**. A relatively small cross section groove **146** extends along the minor sealing lip **144** into which lubricant can flow through notches **147**, FIG. **16**, which are located at diametrically opposite upper and lower positions in the minor sealing lip **144**. It will be understood that the lubricant which is picked up by the axle journal **113** from the supply thereof in the journal box **116** flows over the surface of the seat **111** and through the notches **147** into the small cross section groove **146** and thence into the large cross section groove **143**. The annular major sealing lip **141** not only serves to retain the lubricant in the groove **143** but also it prevents the entrance of extraneous material into the journal box **116**.

Between the annular major and minor sealing lips **141** and **144** there is an annular bumping portion **148** that is formed integrally with the sealing portion **125**. It has an annular bumping surface **149** that is concentric with the surface of the seat **111** and is spaced slightly therefrom. The bumping portion **148** serves to transmit transverse

movement of the axle **110** to the dust guard and oil seal **122**.

The dust guard and oil seal **122**, thus far described, is satisfactory for preventing egress of lubricant and ingress of dust, etc., from and to the journal box **116** and to accommodate endwise or axial movement of the axle **110** into and out of the journal box **116**. As pointed out some transverse movement of the axle **110** takes place. The extent of this movement varies, depending upon whether or not the journal box **116** is provided with journal stops. Since the dust guard and oil seal **122** is formed of rubberlike material, when the relative transverse movement of the axle **110** takes place, there is a tendency for the surface of the seat **111** to separate from the margins of the sealing lips **141** and **144**. In order to minimize this separation an annular stiffening member, shown generally at **152** in FIGS. 9, 10 and 17, is provided. It is formed of relatively rigid material such as high density polyethylene. As shown in FIG. 18 the annular stiffening member **152** is channel shaped and includes a web **153** and side flanges **154**. The annular stiffening member **152** is positioned on the side of the web portion **124** from which the minor sealing lip **144** extends with the outer surface of the web **152** juxtaposed to the surface of the web portion **124**. The stiffening member **152** is held in position by plug and socket means which comprises plugs **156**, FIGS. 14 and 15, that are formed integrally with the web portion **124** of the dust guard and oil seal **122**. Each plug **156** includes a tapered head portion **157** and a neck portion **158**. The socket means comprises openings **159** in the web **153** of the stiffening member **152**. As shown in FIG. 14, after the tapered head portion **157** has been forced through the respective socket opening **159**, the latter encompasses the neck portion **158** and thus is securely held in position.

The dust guard and oil seal **122** constructed as described herein and with the annular stiffening member **152** in position is inserted through the top of the dust guard well **118** to the position shown in FIG. 10 in the absence of the railway car axle **110**. Here it will be observed that the flanges **127** and **128** on the U-shaped lower sections **126** are deformed upwardly and likewise the flanges **135** and **136** on the top section **134** are deformed upwardly with the respective longitudinally extending ribs **129** and **137** engaging the juxtaposed parallel faces **119**. Afterward the railway car axle **110** is inserted with the axle journal **113** being positioned in the journal box **116** and the seat **111** engaging the marginal portion of the sealing lip **144** as shown in FIG. 9 while the marginal portion of the sealing lip **141** is turned under in the manner shown in FIG. 6 for the lip **25**. On rotation of the axle **110** and seat **111**, the sealing lip **141** rights itself and the marginal portion thereof engages the seat **111** as shown in FIG. 9.

In FIGS. 19–25 there is disclosed another embodiment of this invention. There is illustrated, generally, at **160** a dust guard and oil seal which can be inserted in the dust guard well **118** of the journal box **116** in lieu of the dust guard and oil seal **122** previously described. The dust guard and oil seal **160** includes a peripheral portion **161** that is formed of one piece rubberlike material such as nitrile elastomer. It includes a web portion **162** that is arranged to be centrally located in the dust guard well **118**. The web **162** along its inner part has a sealing portion that is indicated, generally, at **163** for overlying the seat **111** of the axle **110**. The peripheral portion **161** comprises a U-shaped lower section which is indicated, generally, at **164** and it is provided, as shown in FIG. 22, with laterally extending flanges **165** and **166** which have longitudinally extending ribs **167** for frictionally engaging the parallel faces **117** of the dust guard well **118** as illustrated in FIG. 24. The peripheral portion **161** also includes a top section that is indicated, generally, at **168** in FIGS. 19 and 20 and it has laterally extending flanges **169** and **170** which are provided with longitudinally extending ribs **171** and **172** as shown more clearly in FIG. 21. They are arranged to frictionally engage the parallel faces **119** of the dust guard well **118** in the manner illustrated for the dust guard and oil seal **122** in FIG. 10. The laterally extending flange **170** has arcuate corner sections one of which is shown at **172** in FIG. 25 for insuring more complete frictional engagement with the juxtaposed face **119** of the dust guard well **118**.

The web portion **162** has an integral annular bumping portion **173**, FIGS. 20, 21 and 22, which is provided with a bumping surface **174** that is spaced slightly from the seat **111**. The purpose of the bumping portion **173** is to effect movement of the peripheral portion **161** of the dust guard and oil seal **160** relative to the dust guard well **118** on corresponding relative movement of the seat **111** and the journal box **116**.

With a view to preventing the ingress of foreign material to the journal box **116** an annular sealing lip **176** is provided. It is offset toward the wheel side **112** from the web portion **162** and is formed integrally with a base portion **177** that is formed integrally with the inner side of the web **162** as shown more clearly in FIGS. 21 and 22. Between the bumping portion **173** and the annular sealing lip **176** there is provided a flat bottom groove **178** in which lubricant from the journal box **116** is trapped and from which it can flow over the inner surface of the sealing lip **176** to lubricate the same where it engages the seat **111**.

As in the embodiments of this invention previously described the offset or eccentric positioning of the anuular sealing lip **176** with respect to the web **162** is important. When the seat **111** is moved in the direction indicated by arrow **179**, FIG. 24, through the dust guard and oil seal **160** the distal edge **180** of the sealing lip **176** is moved to underlie the base portion **177** and to overlie the groove **178**. The extreme edge is juxtaposed to the annular bumping portion **173** as here illustrated. When so positioned the fibers in the outer section **181** which is eccentric or offset from the web portion **162** are tensioned to such an extent that, when the seat **111** ultimately rotates relative to the journal box **116**, the action is such as to cause the sealing lip **116** to move to the position shown by broken lines in FIG. 24 with the distal edge **180** then extending into engagement with the seat **111** and in a direction away from the bumping portion **173**.

It is desirable to reenforce the peripheral portion **161** of the dust guard and oil seal **160**. There is provided a reenforcing member that is indicated, generally, at **182** in FIG. 23. The reenforcing member **182** or stiffener is of annular platelike configuration and may be formed of plastic material such as nylon. Other similar material can be employed as long as it is sufficiently rigid. The reenforcing member **182** has several apertures **183** extending traversely therethrough. The dust guard and oil seal **160** is formed by locating the reenforcing member **182** in a suitable mold and then filling the mold with the nitrile elastomer so that this material generally surrounds the reenforcing member **182** and, as indicated at **184** in FIGS. 22 and 24, it flows through the apertures **183** in order to essentially integrally bond the reenforcing member **182** to the peripheral portion **161**. At certain of the apertures **183** thickened molded portions **185** are formed in this process. Also, as shown in FIG. 21, a beveled lip portion **186** is formed as a part of the molding operation to overlie the reenforcing member **182**. As illustrated in FIG. 25 end portions of the top section **168** are molded as indicated at **187** over the underlying end **188** of the reenforcing member **182**. This construction provides a relatively rigid dust guard and oil seal **160** which not only will maintain sealing contact engagement with the parallel faces **119** of the dust guard well **118** but also will follow the lateral movement of the seat **111** relative to the journal box **116** to maintain the annular sealing lip **176** in engagement therewith.

In order to provide for the shifting of the sealing lip **176** from its position shown by full lines in FIG. 24 to the running position shown by broken lines, its thickness tapers from its junction with the base portion **177** to the distal edge **180**. The base portion extends normal to the web **162** and has a radial thickness that is greater than the axial thickness of the web **162** excluding the relatively minor thickened molded portions **185**. The cantilever mounting of the sealing lip **176** and its attachment to the base portion **177** offset from the web **162** is material to the action of the sealing lip **176** in righting itself.

What is claimed as new is:

1. For combination with a railway car journal box having a dust guard well and a railway car axle in said journal box having a seat extending transversely of said dust guard well, a dust guard for positioning in said dust guard well comprising:

a body portion of flexible material having integral laterally extending annular flange means for frictionally engaging the juxtaposed walls of said dust guard well,

a pair of laterally spaced sealing lips integral with said body portion for engaging said seat, the lip nearer said journal box being an inner lip and the other lip being an outer lip,

said lips in normal operation with said seat adapted to extend therealong in opposite directions, and

a backup rib integral with said body portion and adapted to overlie the distal portion of said inner lip in normal operation to hold the same in juxtaposition to said seat, said backup rib being spaced laterally from said inner lip toward said journal box and having its distal portion separate from said inner lip whereby said inner lip is movable toward said seat independently of said backup rib.

2. The dust guard claimed in claim **1** wherein a reenforcing member extends through the body portion.

3. The dust guard claimed in claim **1** wherein the inner lip is notched along its periphery to facilitate flow of lubricant into the space between the lips and between their distal edges and the seat on the axle.

4. The dust guard claimed in claim **1** wherein the base of the outer lip is axially offset along the axis of rotation of the axle with respect to the body portion whereby on application of the axle to the journal box through the dust guard said outer lip is moved to underlie the inner lip and overlie the seat thereby tensioning the outer portion of said outer lip intermediate its base and distal portion and whereby on subsequent rotation of said axle and seat the tensioned outer portion of said outer lip causes the same to move away from said inner lip to normal operating position.

5. For combination with a railway car journal box having a dust guard well and a railway car axle in said journal box having a seat extending transversely of said dust guard well, a dust guard and oil seal for positioning in said dust guard well and around said seat comprising

a peripheral portion of flexible rubberlike material having integral laterally extending flange means for frictionally engaging the juxtaposed walls of said dust guard well,

a web portion integral with said peripheral portion and extending radially inwardly therefrom, and

a sealing portion integral with said web portion and extending radially inwardly therefrom, said sealing portion including

a major sealing lip offset to one side of the plane of said web portion for engaging said seat,

a minor sealing lip offset to the other side of said plane of said web portion a lesser distance than said major sealing lip for engaging said seat,

a relatively small cross section groove along said major sealing lip,

a relatively small cross section groove along said minor sealing lip, and

at least one notch in said minor sealing lip to facilitate flow of lubricant into said grooves.

6. The dust guard and oil seal according to claim **5** wherein a bumping portion is provided integral with said sealing portion between said grooves having a radially inwardly facing bumping surface for juxtaposition to said seat.

7. For combination with a railway car journal box having a dust guard well and a railway car axle in said journal box having a seat extending transversely of said dust guard well, a dust guard and oil seal for positioning in said dust guard well and around said seat comprising

a peripheral portion of flexible rubberlike material having integral laterally extending flange means for frictionally engaging the juxtaposed walls of said dust guard well,

a web portion integral with said peripheral portion and extending radially inwardly therefrom,

a sealing portion integral with said web portion and extending radially inwardly therefrom, said sealing portion including

a major sealing lip offset to one side of the plane of said web portion for engaging said seat, and

a minor sealing lip offset to the other side of said plane of said web portion a lesser distance than said major sealing lip for engaging said seat,

a stiffening member of relatively rigid material as compared to said flexible material extending along said web portion, and

plug and socket means securing said stiffening member to said web portion.

8. The dust guard and oil seal according to claim **7** wherein

said stiffening member is of annular channel shape,

said plug means is formed integrally with said web portion and includes a tapered head portion and a neck portion adjacent said web portion, and

said socket means comprises openings in the web of said channel-shaped stiffening member adapted to be forced over said tapered head portions and to be secured in said neck portions.

9. The dust guard and seal according to claim **8** wherein said channel shaped stiffening member is positioned on the side of said web portion on which said minor sealing lip is located.

10. For combination with a railway car journal box having a dust guard well and a railway car axle in said journal box having a seat extending transversely of said dust guard well, a dust guard for positioning in said dust guard well comprising:

a body portion having the part remote from said seat for location between the juxtaposed walls of said dust guard well,

a bumping portion extending radially from said body portion toward said seat for engaging said seat to shift said body portion in response to radial movement of said seat relative to said journal box,

sealing lip means having its distal portion for engaging said seat, said sealing lip means having a base portion integral with said body portion and axially offset along the axis of rotation of said axle with respect to said body portion on the side away from said journal box whereby, on application of the axle to said journal box through said dust guard, said distal portion of said sealing lip means is moved into juxtaposition with said bumping portion to underlie said base portion and overlie said seat thereby tensioning the outer portion of said sealing lip means intermediate its base portion and distal portion and whereby, on subsequent rotation of said axle and seat, said tensioned outer portion of said sealing lip means causes said distal portion to move away from underneath said base portion to normal operating

position where it extends away from said bumping portion, and

an annular platelike reenforcing member extending along said body portion and having a plurality of apertures through which portions of said body portion extend and provide an integral bond to said reenforcing member.

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