May 24, 1955 W. MILLER 2,709,095

DUST GUARDS FOR RAILWAY JOURNAL BOXES

Filed Sept. 2, 1950

FIG. 1.

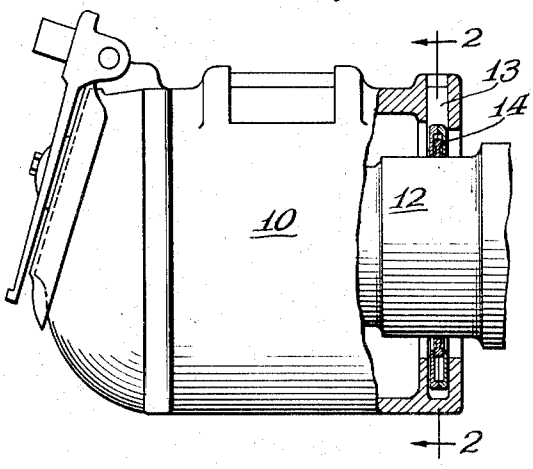


FIG. 2.

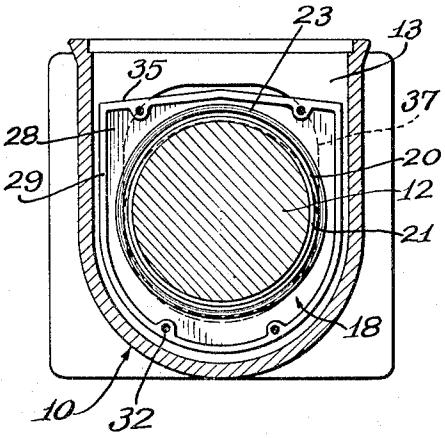


FIG. 3.

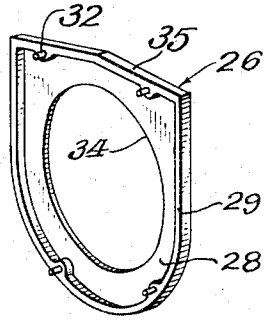


FIG. 4.

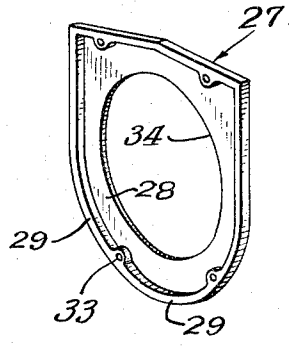


FIG. 5.

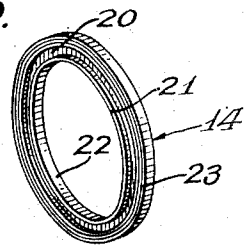
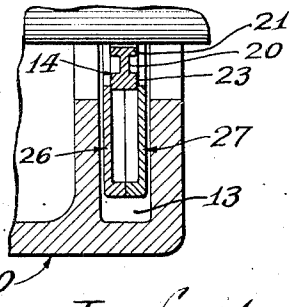


FIG. 6.



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DUST GUARDS FOR RAILWAY JOURNAL BOXES

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Application September 2, 1950, Serial No. 183,030

2 Claims. (Cl. 286—6)

The invention relates to dust guards for railway axle journal boxes.

One object of the invention is to provide a dust guard which will efficiently exclude dust, will not cut the axle, is heat-resistant and is durable.

Other objects of the invention will appear from the detailed description.

The invention consists in the several novel features hereinafter set forth and more particularly defined at the conclusion hereof.

In the drawings:

Fig. 1 is a side elevation of a railway journal box, parts being shown in section, embodying a dust guard exemplifying the invention;

Fig. 2 is a section taken on line 2—2 of Fig. 1;

Fig. 3 is a perspective view of one of the sections of the housing for the ring through which the axle extends;

Fig. 4 is a perspective view of the mating section; and

Fig. 5 is a perspective of the dust guard ring which fits in the sectional housing and around the axle.

Fig. 6 is an enlarged side elevation of the lower portion of the dust guard assembly shown in Fig. 1.

The invention is exemplified in a journal box 10 of usual construction, for a car axle 12. The box 10 is provided at its inner end with a dust guard well 13 around the axle. The upper end of said well is open for the insertion and removal of the guard.

A characteristic of the improved dust guard is that it is formed of a pressure molded thermosetting plastic, which is durable, resistant to heat and wear, and will not cut the axle. The dust guard comprises a ring generally designated 14 which has an opening through which the axle 12 extends, and a housing generally designated 18 in which the ring is slidably confined. The housing 18 fits in the well 13 and is insertable into said well through its open upper end. Both the housing 18 and the ring 14 are preferably molded from thermosetting plastic material of the phenolic resin high-impact and heat-resistant type. The ring 14 is provided with a central web 20, integral transverse circular ribs or flanges 21 which define a circular bearing 22 which fits around the axle 12, and integral circular ribs or flanges 23 which form a circumferential rim. The inner faces of ribs 23 form a relatively wide bearing surface for engaging the axle.

The housing 18 comprises a pair of complemental sections 26 and 27, each of which is provided with a side wall 28 and an inwardly extending rib or bead 29 around its rim. The ribs 29 of sections 26 and 27 are complemental and abut against each other to form a closed rim around the chamber in which the dust guard ring 14 is slidably confined. Section 26 is provided with integral studs 32 which fit into holes or sockets 33 in section 27 for interlocking the sections against relative movement in the plane of side walls 28. The sections are held together in face-to-face relation between the

contiguous side walls of the well 13. The side wall 28 of each section 26 and 27 is provided with a vertically elongated opening 34 for the axle 12. The lower portion of the rim of housing 18 is semicircular conformably to the lower portion of well 13, and its ends are vertical conformably to the ends of said well. The top 35 of said rim is upwardly convergent. The side faces of ribs 21 and 23 of ring 14 slidably fit the inner faces of side walls 28. The faces of ribs 21 may be grooved to reduce contact area with walls 28. The opening 37 in the walls of well 13 is contoured to provide clearance around the axle for relative bodily movement between the axle and the journal box. The housing 18 overlaps the ring 14 and the inner edge of the wall around opening 37 and forms a slidable closure around the ring 14 and between the walls of the well 13 and said ring. The housing 18 is slidably retained in the well 13 in the housing.

During operation, the upper portion of the periphery of hole 34 rests on the axle so that the housing 18 is suspended on the axle. The inner periphery of ring 14 fits around and bears on the axle. During relative vertical movements of the journal box and the axle, the housing 18 will, with the ring 14, keep the opening 37 closed, to retain oil in and exclude dust from the box. The lower end of the well may lift the housing 18 and cause it to slide relatively to the ring 14.

In practice, it becomes necessary to replace wornout ground bearings in the journal box. For this purpose, the box is usually lifted by a jack to provide sufficient clearance for the removal and replacement of the journal bearing between the axle and the box. In raising the box, the bottom of the well 13 can be lifted until the lower portion of opening 34 encounters the axle. During this lift, the housing 18 will be lifted by the bottom of well 13, and the housing will slide on ring 14. This provides for adequate clearance between the box and the axle for removal and replacement of the journal bearing while the dust guard remains in the well 13 in the box.

In assembling the dust guard and journal box, the ring 14 is placed between the sections of the housing 18 and the sections are then mated together with the studs 32 of one section inserted into the holes 33 of the other section. This assembly of the housing 18 and ring 14 can then be placed in the well 13 where the sections will be held together by the walls of the well and the axle can be passed through the dust guard. This facilitates replacement of the ring 14 when necessary.

By forming the housing 18 and ring 14 of suitable molded thermoplastic phenolic resin material, the cutting of the axle from contact with said ring and housing will be avoided. This material is heat-resistant and deteriorates less than other materials which had been used, and can be accurately shaped with smooth side faces on the housing, which will not interfere with sliding engagement of the housing 18 and the walls of the dust guard well. The assembled dust guard can be readily assembled and installed.

The invention is not to be understood as restricted to the details set forth, since these may be modified within the scope of the appended claims without departing from the spirit and scope of the invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A dust guard for a railway axle journal box having an axle-receiving opening and walls forming a dust guard well surrounding said opening, said guard comprising: a housing around the axle, including opposed mating sections having webs forming sides having a freely slidable fit with the side-walls of the well and integral abutting substantially rigid marginal ribs extending towards one

another and fixedly spacing apart the webs, and a continuous substantially rigid one-piece ring provided with an axle-opening and integral ribs on its sides around said axle-opening and integral marginal ribs, the ribs on the ring having side faces with a freely sliding fit with the inner faces of the webs of the housing sections, and interfitting means integral with the housing sections for removably locking them against relative transverse movement.

2. A dust guard for a railway axle journal box having an axle-receiving opening and walls forming a dust guard well surrounding said opening, said guard comprising: a housing around the axle, including opposed mating sections having webs forming sides having a freely slidable fit with the side-walls of the well and integral abutting substantially rigid marginal ribs extending towards one another and fixedly spacing apart the webs, and a continuous substantially rigid one-piece ring provided with an axle-opening and integral ribs on its sides around said axle-opening and integral marginal ribs, the ribs on the ring having side faces with a freely sliding fit with the inner faces of the webs of the housing sections, and slidably interfitting studs and sockets on the inner faces of the housing sections for removably locking them against relative transverse movement.

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