F. W. CAUGHLING.

DUST GUARD.

APPLICATION FILED JUNE 8, 1914.

1,262,172. Patented Apr. 9, 1918.

Fig. 1.

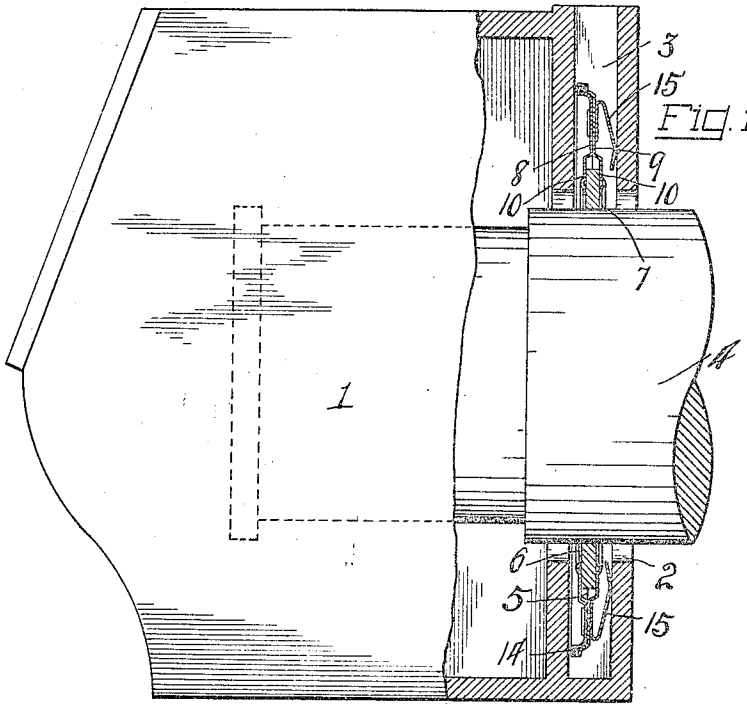


Fig. 2.

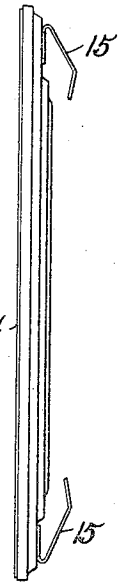


Fig. 5.

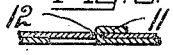


Fig. 3.

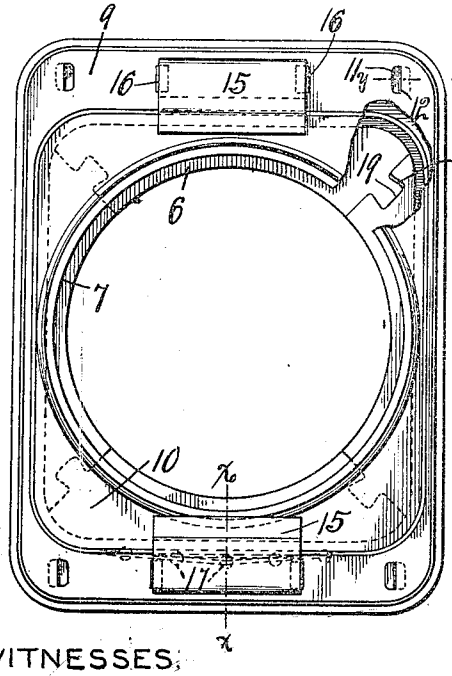
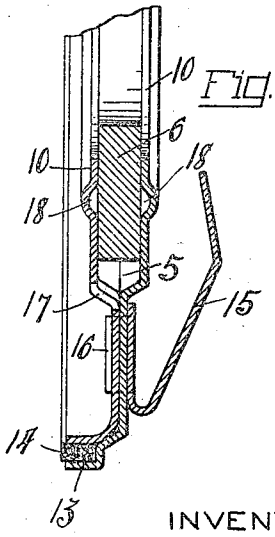


Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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DUST-GUARD.

1,262,172. Specification of Letters Patent. Patented Apr. 9, 1918.

Application filed June 3, 1914. Serial No. 843,872.

To all whom it may concern:

Be it known that I, FRANK W. CAUCHLING, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented a certain new and useful Dust-Guard; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates particularly to dust-guards for the journal-boxes of railway cars, but is not restricted to such use as it may be used in any connection for which it may be adapted or appropriate.

The primary object of my invention is to improve on the dust-guard described and claimed in my copending application Serial No. 759,180, filed April 5, 1913, whereby to enhance the practicability and commercial value thereof.

The invention is fully described in the following specification, and while, in its broader aspect, it is capable of embodiment in numerous forms, a preferred embodiment thereof is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a journal-box and journal therein equipped with my invention with portions in section. Fig. 2 is an edge view of the dust-guard embodying the invention. Fig. 3 is an outer side view thereof. Fig. 4 is an enlarged section on the line x, x in Fig. 3, and Fig. 5 is an enlarged section on the line y in Fig. 3.

Referring to the drawings, 1 designates a journal-box of the customary or any suitable construction, having a journal receiving opening 2 in its inner end, and a dust-guard receiving socket or chamber 3 in such end in intersecting relation to said opening, and 4 a journal projecting through said opening into the journal-box. The opening 2 is of greater diameter than the journal to permit the journal to have limited floating or vibratory movements therein.

The dust-guard embodying my invention comprises a holder or frame member, having a chamber or recess 5 therein, and a center or collar member 6, which is mounted for limited floating or gyratory movements within the chamber 5 and is intended to fit loosely around the journal 4. In practice I preferably provide about $\frac{1}{64}$ of an inch clearance all around between the collar and the journal to permit a perfectly free non-frictional turning of the journal within the collar. A film of oil or grease gathers between the journal and collar and prevents the passage of dust therethrough.

The holder member is preferably of rectangular form with rounded corners, but may be of any other desired form, and has a centrally disposed opening 7 through its chambered portion for the journal 4 to project through, said opening being larger than the collar opening to permit a limited vibratory or floating movement of the journal therein. The holder member, in the present instance, comprises two plates or side parts 8, 9, which are stamped, drawn or otherwise suitably formed from sheet metal, or other material adapted for the purpose. Each of these parts has its central or inner marginal portion drawn outwardly, as at 10, to coöperate with the corresponding portion of the other part to form the collar receiving chamber 5. The opposing portions 10, 10 are substantially parallel and suitably spaced to permit the collar 6 to have vibratory movements therein transversely of its axis. The side parts 8, 9 have flat abutting contact around the chamber 5 and are rigidly secured together in any suitable manner. The means employed, in the present instance, for securing the parts of the holder together, is to project a series of integral tongues 11 from one part and through registering slots or openings 12 in the other part and over the edge thereof, as shown in Fig. 5. The outer edge portions of the two side parts 8, 9 are projected in the same direction transversely of the holder in spaced telescoping relation to provide a transversely opening recess 13 around the outer marginal edge of the holder to receive a packing or gasket strip 14 of felt or other suitable material for bearing against the inner wall of the dust-guard receiving chamber 3. The recessed edge of the holder is of sufficient depth to project beyond or without the outer side plane of the centrally protruding portion 10 of the respective side so as to prevent such protruding portion from having contact with the wall of the chamber 3 when the holder is inserted therein, thereby making

the gasket faced edge of the holder the only chamber wall contacting part, as shown in Fig. 1.

Spring fingers 15 of sheet-metal are provided on the outer face of the holder above and below its opening for bearing against the outer wall of the chamber 3 when the dust-guard is inserted therein, and serve to force the gasket faced edge of the holder firmly against the opposite wall of the chamber. These fingers are shown as being secured to the holder by projecting tongues 16 from the opposite side edges thereof through registering slots in the holder members 8, 9 and bending such fingers over the edges of the slots.

The telescoping of the outer edge portions of the holder members 8, 9 and the filling of the recess 13 with the gasket 14 prevents dust and dirt from entering and collecting between the holder members. In case any dirt should from any cause enter or accumulate within the holder chamber 5 it is permitted to pass therefrom through one or more openings 17 in the inner holder side at the bottom portion of the chamber 5. To facilitate such discharging action the bottom portion of the chamber wall in which the openings 17 are disposed is downwardly inclined in both directions toward the center, so that a jarring action of the holder will tend to work the dirt toward the discharge openings.

The collar 6, which is preferably of pressed or vulcanized fiber, is smaller in size than the chamber 5 of the holder to enable the collar to have limited vibratory movements therein transversely of its opening axis, and the outer edges of the collar are preferably substantially rectangular in form or of some other suitable shape adapted to prevent a complete rotation of the collar within the chamber. The collar is flat in form and is of a thickness to adapt it to snugly fit between the side walls of the holder recess for frictional contact therewith, whereby the collar is yieldingly held in suspension by the holder in any position to which it may be moved by the vibratory action of the journal. The suspending of the collar in this manner prevents it from bearing, by reason of its weight, on the journal, and prevents an oblong wearing of the collar opening. It also reduces the wear of the parts to a minimum. To adapt the holder portions 10, 10 to have a yielding or resilient bearing against the collar, the space therebetween is normally less than the thickness of the collar 6 to cause a slight springing apart of said portions by the collar when inserted therebetween.

It is found in practice that the frictional sliding action of the collar within the chamber is facilitated by providing each wall of the chamber with an initial recess or groove 18 surrounding the holder opening. The shaping of the chamber walls to form this recess also serves to strengthen such walls without destroying the resiliency thereof.

In order to reduce the cost of manufacture of the dust-guard by eliminating the waste incident to making the collars 6 in a single piece, such collars are made in sections, in the present instance, four in number. These sections are suitably connected, as by tongue-and-groove dove-tailed-joints at the corner portions of the collar, as shown at 19, so that such sections, when disposed within the holder, work together as a unit, the same as though the collar were in one piece. The making of the collar in this manner effects a very material saving in the cost of manufacture, especially if vulcanized fiber is used, as such material is expensive, and the waste incident to the cutting out of the collar openings would be considerable.

The collar 6 is made yieldingly expansible by providing a loose connection between the members of one of the joints 19, as at 19^a, which permits a limited outward movement of the interengaged parts of the joint. This feature is found in practice to be quite important, as it allows for an easier insertion of a journal through the collar than would otherwise be the case, especially where the journal might be rusted. The tendency of the collar is to remain in its contracted form with the ends of the sections in abutment, as the normal size of the collar opening is sufficient to fit loosely around a journal of standard size and there will be no binding of the collar on the journal, unless it is rusted or slightly larger than the standard.

I wish it understood that my invention is not limited to any specific construction or arrangement of the parts as numerous modifications can be made within the spirit thereof.

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

1. In a dust-guard, a holder having opposing side members coöperating to form a collar-receiving chamber and having the outer edge portion thereof projecting one without the other in the same direction transversely of the holder body to form an endless edge bearing flange.

2. In a dust-guard, a holder having opposing side members coöperating to form a collar-receiving chamber and having outer edge portions thereof coöperating to form a transversely opening gasket receiving recess.

3. In a dust guard, a holder having opposing side members provided with registering journal receiving openings, said members being spaced apart at their inner edges to form a collar receiving chamber, the side members without said chamber being rigidly

secured together and having their outer edges turned transversely in telescoping form over and beyond the respective side of the collar chamber, the free edges of the side members being spaced to form a transversely opening gasket receiving recess entirely around the holder, a gasket in said recess, and spring pressure means on the side of the holder opposed to the direction of projection of the gasket holding portion thereof.

4. In a dust-guard, a holder having opposing side members the outer edge portions of which are telescoped and coöperate to form a transversely opening marginal recess, and a gasket disposed in said recess.

5. In a dust guard, a holder having a collar receiving chamber, which is entirely closed around its outer edge except for one or more openings provided in the bottom wall thereof for the exit of loose matter from within the chamber, the wall in which said openings are provided being tapered in opposite directions toward said openings.

6. In a dust-guard, a collar holder having abutting side members of sheet metal forming a journal receiving opening, with their inner edge portions spaced to form a collar receiving chamber and with their outer edge portions telescoped and projecting transversely in the same direction beyond the adjacent side wall of said collar receiving chamber to form a bearing flange.

7. In a dust-guard, a holder having a collar receiving chamber the bottom wall of which tapers in opposite directions and is provided with one or more openings for the exit of loose matter from within the chamber.

8. In a dust-guard, a holder having a journal receiving opening and a collar receiving chamber surrounding said opening and opening therein, and a flat collar of a hard material mounted for gyratory movements in said chamber and having its side faces in sliding frictional contact with the opposing side walls of said chamber, the portions of the chamber walls with which the collar faces have contact being internally grooved around the opening.

9. In a dust-guard, a journal receiving collar comprising a plurality of sections joined together end to end around the opening formed thereby, the joint between the two adjoining sections being loose to permit an expansion of the collar.

10. In a dust-guard, a collar holder having abutting side members of sheet-metal forming a journal receiving opening with their inner edge portions spaced to form a collar receiving chamber and with their outer edge portions telescoped and projecting transversely in the same direction beyond the adjacent side wall of said collar receiving chamber to form a bearing flange, one of said members having openings in the abutting portion thereof and the other member having tongues integral therewith and projecting therefrom through said openings and engaged around the walls thereof to secure the members together.

11. In a dust guard, a journal receiving collar having sections in separable interlocked end abutment with at least one of the interlocked joints loose to permit an expansion of the collar, the interlocked joints being separable only by relative transverse movements of the sections.

12. In a dust guard, a journal receiving collar having sections in separable dovetailed connection at their ends, said collar being expansible and normally remaining in contracted state.

13. In a dust guard, a collar holder having abutting side members of sheet metal forming a journal receiving opening with their inner edge portions spaced to form a collar receiving chamber and with their other outer edge portions telescoped and projecting transversely in the same direction beyond the adjacent side wall of said collar receiving chamber to form a bearing flange.

In testimony whereof, I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

FRANK W. CAUGHLING.

Witnesses:
F. E. Aul.
R. G. Allen.