

Dec. 6, 1949

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2,490,314

COMBINED WASTE GRAB ELIMINATOR AND OIL RESERVOIR

Filed Oct. 12, 1946

2 Sheets-Sheet 1

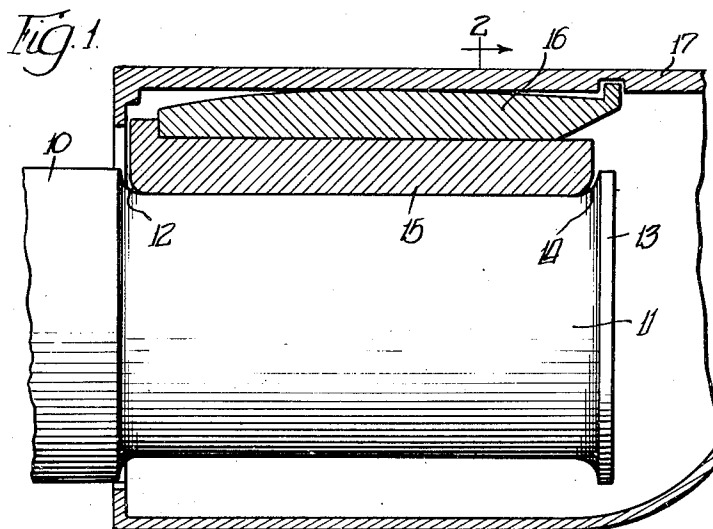
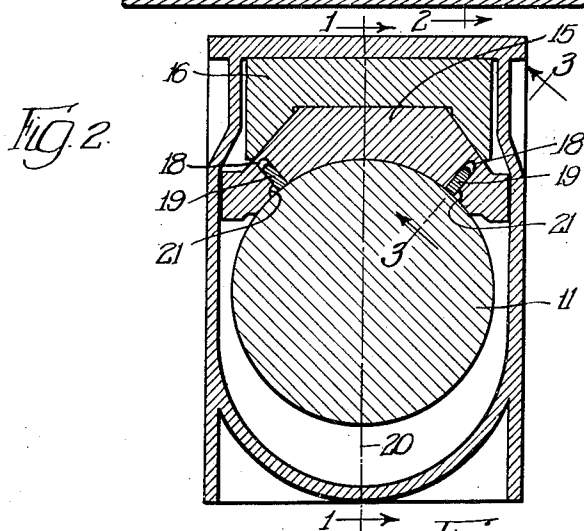
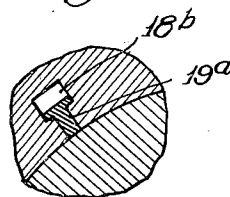
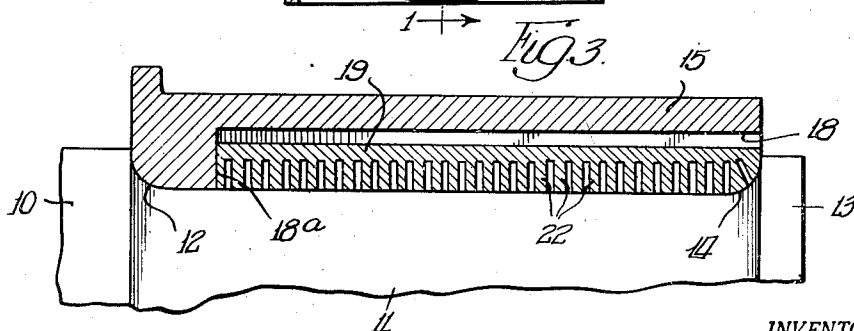


Fig. 9



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Fig. 4

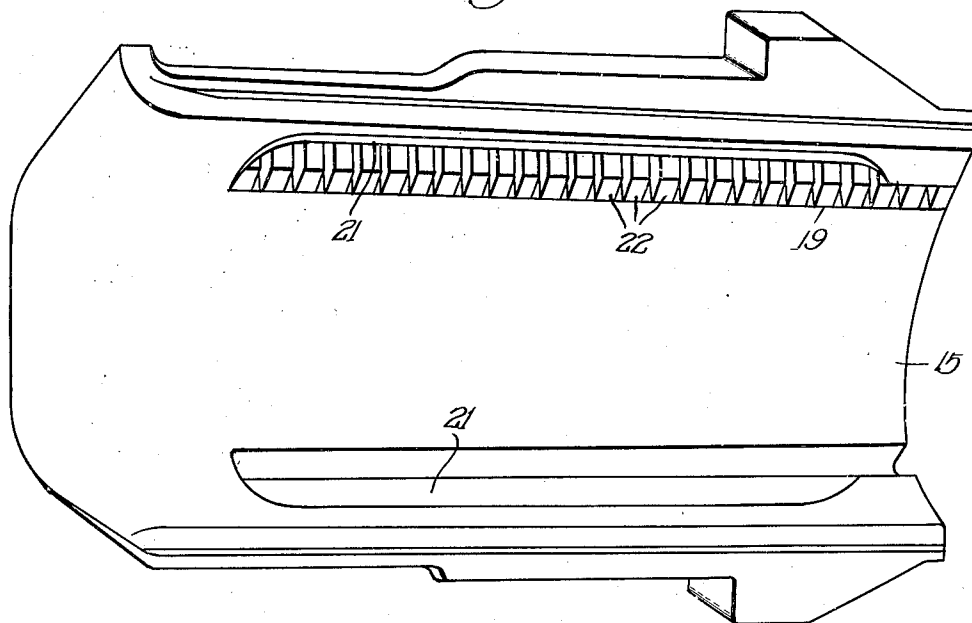


Fig. 5

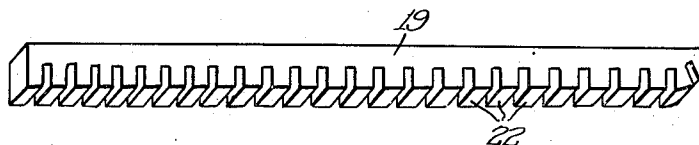


Fig. 6

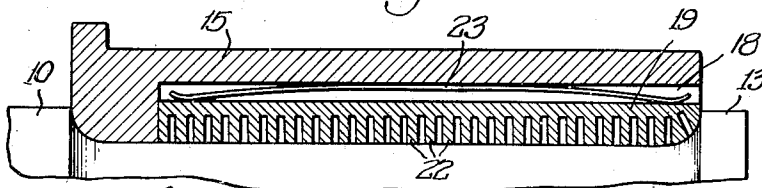


Fig. 7

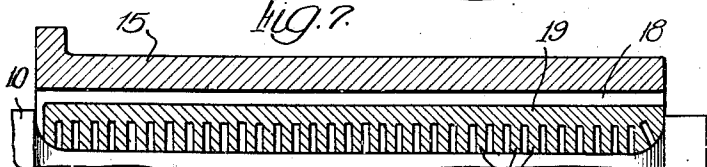
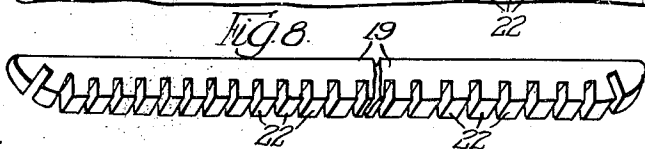


Fig. 8



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2,490,314

COMBINED WASTE GRAB ELIMINATOR
AND OIL RESERVOIR

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Application October 12, 1946, Serial No. 703,043

10 Claims. (Cl. 308—89)

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The present invention relates to improvements in combined waste grab eliminators and oil reservoirs.

More particularly the present invention relates to improvements in bearing brasses such as are used in the journal boxes of railway cars and the like.

The present application is a continuation-in-part of the application filed September 12, 1945, Serial No. 615,770, now abandoned, by the present applicant.

According to practice which has been common up to the present time the bearing brasses, particularly at high speed or over rough track, have a tendency to float or to jump intermittently, and while they are thus momentarily off the journal, particles of waste from the main journal box or the packing in the bottom of the box are apt to follow the journal in its rotation, and locate themselves in the crown of the brass, forming what is known as "waste grab," which, in turn, causes the bearing to run hot. Another problem which confronts operators of railway cars and the like is lubrication of the bearings. When the journal comes to rest, oil tends to flow from the crown thereof and more or less complicated means have been utilized for providing lubrication.

An object of the present invention is to provide a simple device which may be applied to journal bearings as now known and used which will be effective in minimizing waste grab.

A further object is to provide a simple device readily applicable to bearing brasses as now known and used which will prevent the passage of foreign matter to the location at the crown of the brass.

A further object is to provide a device which is simple, sturdy, and cheap to manufacture, and which may be readily applied to bearings as now known and used for preventing waste grab.

A further object is to provide a device for minimizing waste grab while adapted to meet the needs of commercial service.

A further object is to provide an improved device which will not only minimize waste grab but which will provide an effective reservoir for lubricant.

Further objects will appear as the description proceeds.

Referring to the drawings—

Figure 1 is a sectional view taken along the plane indicated by the arrows 1—1 of Figure 2, showing more or less diagrammatically the usual construction of journal box;

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Figure 2 is a sectional view taken along the plane indicated by the arrows 2—2 of Figure 1 and illustrating an embodiment of the present invention;

5 Figure 3 is a view on an enlarged scale taken along the plane indicated by the arrows 3—3 of Figure 2;

Figure 4 is a view of a bearing brass embodying the present improvement, said figure illustrating one comb-like member located in its corresponding slot, the other slot having its corresponding comb-like member omitted therefrom;

Figure 5 is a view of a comb-like device for use in the bearing brass illustrated in the preceding figures;

Figure 6 is a view similar to Figure 3 but illustrating a modification;

Figures 7 and 8 are views similar to Figures 3 and 5, respectively, but illustrating another modification; and

Figure 9 is a fragmentary view similar to part of Figure 2 but showing a further modification.

The numeral 10 indicates a railway car axle having the journal 11, said journal 11 having at one of its extremities the fillet 12. At its outer extremity said journal is provided with the annular shoulder 13, connected to the journal 11 through the fillet 14. Mounted upon the journal 11 is the bearing brass 15 which has its extremities located in the fillets 12 and 14. The numeral 16 indicates a box wedge of usual construction, and the numeral 17 indicates a journal box which may be of usual construction.

Disposed longitudinally of the bearing brass 15 are a pair of slots 18—18 communicating with the bearing face of the brass. Said slots are located on the two sides of the vertical plane which includes the axis of the journal 11. Preferably the slots 18—18 stop short of the end of the bearing brass 15 adjacent to the fillet 12, that is, adjacent to the inner end of said brass. Said end provides an end wall 18a for each of the slots 18, 18. Located in each of these slots 18 is a comb-like or toothed member 19 adapted to have bearing engagement with the journal 11. Each of said members 19—19 may be made of metal, or other material. Preferably the toothed members 19—19 are formed of suitable material of sufficient weight to enable them to maintain gravitational contact with the journal. As will be clear from Figure 2, said comb-like members 19 have a certain amount of play within their corresponding slots 18. In other words, the dimension of each of said slots 18 in a direc-

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tion normal to the bearing surface of the brass 15 is greater than the corresponding dimension of the comb-like member 19. Communicating with each slot 18 on the side thereof distant from the vertical axial plane (indicated by the numeral 20) is a groove or well 21 for the accumulation of particles of waste or other foreign matter.

The construction of each of the comb-like or toothed members 19 will be clear from Figures 3 and 5. It will be noted that each of said members 19 is provided with a plurality of spaced teeth 22—22 extending throughout substantially the length of the corresponding comb-like member 19.

Ordinarily it will doubtless be preferred to rely merely upon gravity to hold the members 19—19 in bearing engagement with the journal 11. However, it may be preferred to use a spring or similar device for urging each member 19 into engagement with the journal 11. Figure 6 illustrates a spring 23 having this function.

In assembling the device, the members 19—19 will be placed in the slots 18—18. The end wall 18a and the fillet 14 will prevent each comb-like member 19 from being displaced endwise from the assembly. The comb-like members 19 will have a certain amount of vertical or radial play in their corresponding slots 18—18 and will simply ride on the journal 11, being kept in contact with said journal by their own weight, or, if preferred, by means of a spring or the like, such as indicated by the numeral 23 in Figure 6. The comb-like members 19—19 readily catch strands of waste, but allow oil to follow the journal, passing through the openings between the teeth 22—22 up to the crown of the brass 15, so that lubrication is assured when the journal is being rotated.

The present invention has the advantage that in addition to a waste grab eliminator, it provides a reservoir for oil adjacent to the crown of the brass. This advantage results from the fact that oil will cling to the teeth of each comb-like member 19, being located between the teeth 22—22 thereof. This effect is probably due to surface tension or capillary attraction. To achieve this advantage the spacing between said teeth 22—22 should be co-related to the viscosity of the oil to the extent that said teeth should preferably not be spaced too far apart to permit the oil clinging thereto to bridge the spaces between said teeth. For the type of oil ordinarily used in the journal bearings of railway cars and the like, the spacing between the teeth may vary within wide limits. This oil clinging to the comb-like members 19 between the teeth thereof is instantly available when the journal is put in rotation.

In adapting the present invention to journal bearings as now commonly used, it is a simple matter to cut a standard brass with the two slots 18—18, terminating at the end walls 18a, 18a, or, if preferred, said slots may extend the length of the bearing surface, the combs 19, 19 being correspondingly extended as illustrated in Figures 7 and 8. The comb-like members 19—19 are then placed in the slots 18—18 and the brass 15 with the members 19—19 inserted therein is placed on the journal in the usual manner. The grooves or wells 21—21 serve as reservoirs for the collection of particles of waste material. It is a simple matter to clean the device.

If preferred, means can be provided for limiting downward movement of the comb-like mem-

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bers 19—19 to prevent said members from coming out of their grooves in the event of an extra severe shock which might possibly lift the brass 15 a considerable distance from the journal 11. Such means are illustrated in Figure 9 in which the comb-like member 19a is T-shaped in cross-section, the leg portion thereof being located in a restricted portion of the corresponding slot 18b.

Though certain preferred embodiments of the present invention have been described in detail, many modifications will occur to those skilled in the art. It is intended to cover all such modifications that fall within the scope of the appended claims.

What is claimed is:

1. A journal brass having a pair of T-shaped slots communicating with its bearing surface at regions disposed on the two sides of the crown of said bearing surface, and gravity actuated means located in said slots for stopping the passage of waste material along said bearing surface.

2. A journal brass having a pair of T-shaped slots communicating with its bearing surface at regions disposed on the two sides of the crown of said bearing surface, and gravity actuated means located in said slots for stopping the passage of waste material along said bearing surface, said means comprising T-shaped toothed members.

3. A journal brass having a pair of T-shaped slots communicating with its bearing surface at regions disposed on the two sides of the crown of said bearing surface, said slots stopping short of one end of said brass, and gravity actuated means located in said slots for stopping the passage of waste along said bearing surface.

4. A journal brass having a pair of T-shaped slots communicating with its bearing surface at regions disposed on the two sides of the crown of said bearing surface, extending the length of said brass, and gravity actuated means radially slidably located in said slots for stopping the passage of waste material along said bearing surface.

5. A journal brass having a pair of T-shaped slots communicating with its bearing surface at regions disposed on the two sides of the crown of said bearing surface, said slots stopping short of one end of said brass, and gravity actuated means radially slidably located in said slots for stopping the passage of waste material along said bearing surface, said means comprising T-shaped toothed members.

6. A journal brass having a pair of T-shaped slots communicating with its bearing surface at regions disposed on the two sides of the crown of said bearing surface, extending the length of said brass, and gravity actuated means radially slidably located in said slots for stopping the passage of waste material along said bearing surface, said means comprising T-shaped toothed members.

7. A journal brass having a pair of T-shaped slots communicating with its bearing surface at regions disposed on the two sides of the crown of said bearing surface, and gravity actuated means radially slidably located in said slots for stopping the passage of waste material along said bearing surface, said brass having wells communicating with said slots at the sides of said slots spaced from the crown of said brass.

8. A journal brass having a pair of T-shaped slots communicating with its bearing surface at regions disposed on the two sides of the crown of said bearing surface, and gravity actuated

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means radially slidably located in said slots for stopping the passage of waste material along said bearing surface, said means comprising T-shaped toothed members, said brass having wells communicating with said slots at the sides of said slots spaced from the crown of said brass.

9. A journal brass having a pair of T-shaped slots communicating with its bearing surface at regions disposed on the two sides of the crown of said bearing surface, and gravity actuated means radially slidably located in said slots for stopping the passage of waste material along said bearing surface, said means comprising T-shaped toothed members, the distance between the teeth of each of said T-shaped toothed members being no greater than that at which the oil ordinarily used in journal bearings for railway cars will cling in bridging relationship between said teeth.

10. A journal brass having a pair of T-shaped slots communicating with its bearing surface at regions disposed on the two sides of the crown of said bearing surface, and gravity actuated means radially slidably located in said slots for stopping the passage of waste material along said

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bearing surface, said means comprising T-shaped toothed members, said brass having wells communicating with said slots at the sides of said slots spaced from the crown of said brass, the distance between the teeth of each of said toothed members being no greater than that at which the oil ordinarily used in journal bearings for railway cars will cling in bridging relationship between said teeth.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,058,060	Hyle	Apr. 8, 1913
1,768,114	Carr	June 24, 1930
2,321,070	Dresner	June 8, 1943

FOREIGN PATENTS

Number	Country	Date
578,315	Germany	June 13, 1933
600,872	Germany	Aug. 2, 1934