Nov. 25, 1941. R. J. SHOEMAKER 2,264,250

JOURNAL LUBRICATING PAD

Filed Feb. 8, 1939

Fig. 1.

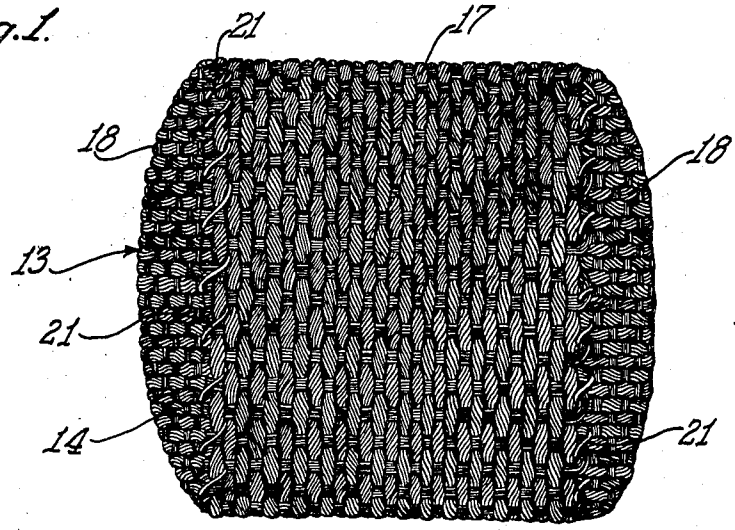


Fig. 2.

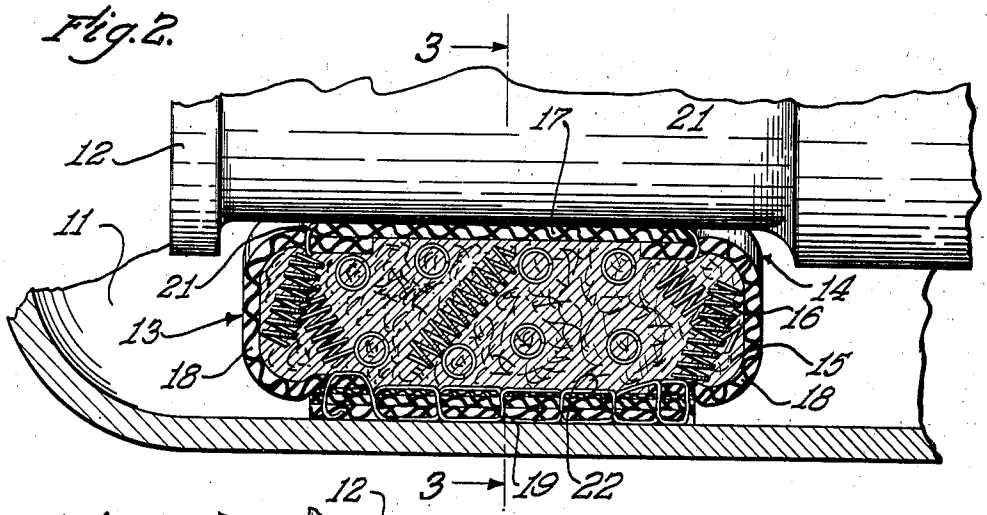
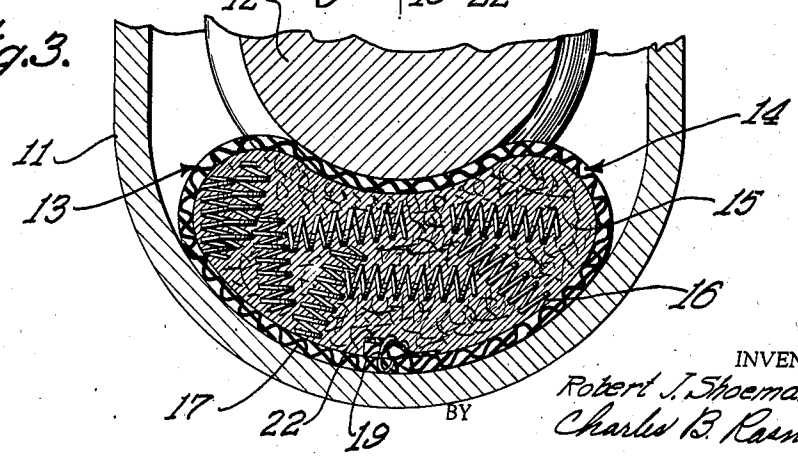


Fig. 3.



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JOURNAL LUBRICATING PAD

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Application February 8, 1939, Serial No. 255,224

1 Claim. (Cl. 308—243)

This invention relates in general to lubricating pads and, while it has more particular reference to lubricating pads for journals and journal bearings used on railway rolling stock, it will be apparent that certain features of the invention have other and more general valuable application.

The usual method of supplying lubricating oil to a journal bearing is to pack a quantity of loose cotton or woolen waste into the space between the lower surface of the journal and the bottom of the journal box, and to saturate this waste with lubricating oil. The lower surface of the journal being in contact with this oil-soaked waste will result in the requisite oil film being deposited thereon, which will be carried upwardly between the journal and the bearing that supports the box and the load carried thereby, upon rotation of the journal.

This usual form and method of packing has several seriously objectionable features, one of which is the frequent occurrence of "waste-grabs," which are the catching of lint and small strands of the waste between the journal and its bearing. Such "waste-grabs" break down the requisite oil film between the journal and its bearing, with a resulting "hot box," burning out of the bearing, and other serious damage.

To obviate "waste-grabs," it has been proposed that the waste be enclosed in cloth bags or envelopes sufficiently porous to allow the passage of oil therethrough, but of fine enough texture to effectively hold the waste. However, it has been found that these packing units also have several objectionable features. For one thing, such a packing unit, like the ordinary waste, does not retain the oil in the upper portion thereof which has contact with the lower surface of the journal when the latter remains stationary for a considerable period of time. This results in a failure to properly supply the oil to the journal at the time when it is most needed, namely, when rotation of the journal is first started after a considerable period of rest. Another serious objection to such packing unit is that the surface of the bag or envelope which contacts the journal soon becomes hard and glazed, so that it fails to properly deliver the oil to the journal and must be replaced with a new bag. Furthermore, the life of such a unit is relatively short since the material used would wear rapidly under service conditions.

A principal object of this invention, therefore, is the provision of a journal lubricating pad, which comprises a bag or envelope for enclosing a cheap grade of cotton or other waste, and which overcomes the objections to the prior pads above referred to by having the bag of such composition that a supply of oil will be maintained at all times at its upper surface which is in contact with the journal, and such journal contacting surface will not become hard and glazed.

Another important object of the invention is the provision of a lubricating pad which is made up of an outer bag or envelope of Angora fibers that encloses a resilient filler of any suitable composition, such as cotton waste, or a mixture of cotton waste with wool or cocoanut fibers. If desired metallic coil springs may be distributed substantially uniformly therethrough.

A further important object of the invention is the provision of a journal lubricating pad which is readily adaptable to any type of journal box, is very simple to insert therein and remove therefrom, is cheap to manufacture, is extremely durable and efficient in operation, and easily reversible to present a fresh operating surface when the other surface has become worn.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, when taken in connection with the accompanying drawing, discloses a preferred embodiment thereof.

In the drawing,

Figure 1 is a top plan view of a lubricating pad embodying the features of the instant invention;

Figure 2 is a longitudinal vertical section, with parts broken away, through a standard type of railway car journal box with the lubricating pad of Fig. 1 disposed therein; and

Figure 3 is a transverse vertical section, with parts broken away, taken substantially on the line 3—3 of Fig. 2.

Referring more particularly to the drawing, reference numeral 11 indicates the lower portion of a standard type of railway car journal box which is mounted in the usual manner surrounding the outer end of a car journal 12. As has been described above, the usual method of supplying lubricating oil to the standard journal bearing, which is disposed interiorly of the box 11 on top of the journal 12, is to pack a quantity of loose waste into the space between the lower surface of the journal 12 and the bottom of the journal box 11, and to saturate this waste with lubricating oil.

The instant invention constitutes a lubricating pad indicated generally by reference numeral 13 which is adapted to replace the usual waste employed for this purpose of supplying lubricating

oil to the car journal. The pad 13 comprises an outer bag or envelope 14, and a filler which is made up of a mass of resilient fibrous, oil-absorbent material 15 having a plurality of metallic coil springs 16 embedded therein. The fibrous material 15 may comprise a cheap grade of cotton waste, or if desired, a mixture of cotton waste with wool, cocoanut fibers, curled hair or resilient fibers in any suitable proportions. The fibrous material is provided to prevent matting and to keep the upper surface of the bag 14 in resilient contact with the lower surface of the journal 12. The pad 13 is normally substantially oval in cross section and is so dimensioned as to be readily inserted into and withdrawn from the space between the bottom of the journal box 11 and the under surface of the journal 12, as shown in Figs. 2 and 3. Springs 16 may be embedded if desired in and substantially uniformly throughout the fibrous material 15.

The bag or envelope 14 is preferably made from three separate pieces of material, comprising a main piece 17 and two similar end pieces 18. Each of these pieces is woven from elongated strands of Angora fibers, the strands extending transversely of the pad in the main piece 17 (Fig. 1) and longitudinally of the pad in the end pieces 18.

The main piece 17 defines the cross sectional dimensions of the pad 13 and has its end portions sewed together at 19 (Figs. 2 and 3) in overlapping relationship at the bottom of the pad. The edge portions of each of the end pieces 18 are disposed interiorly of the associated edge portions of the main piece 17, and are securely sewed thereto in any suitable manner, as indicated at 21. In order to prevent unraveling, it is preferred that before being sewed, the pieces 17 and 18 have strips of linen tape 22 stitched to the inner surface of their end or edge portions.

With a lubricating pad constructed as above described, a very cheap grade of waste may be employed as the fibrous portion 15 of the filler thereof, since the bag 14 will effectively prevent any lint or loose strands from escaping therefrom and becoming lodged between the journal 12 and its bearing. In the use of the pad 13, the pad is first soaked for 48 hours in oil having a temperature from 70° to 100° Fahrenheit. It is then removed from the oil and allowed to drain to thoroughly remove the excess oil. Thereafter, the pad is inserted into the journal box 11 to its operative position of Figs. 2 and 3, and a suitable quantity of lubricating oil is poured into the bottom portion of the journal box. Not only will the fibrous portion 15 of the filler of the pad become saturated with this oil to the same extent as the usual waste heretofore employed, but the oil will be carried upwardly to the surface of the journal 12 by the bag 14, due to the capillary action of the Angora fibers of which the bag is composed. This latter result is obtained by disposing the elongated strands of the Angora fibers in the manner above described. In consequence of such capillary action, an adequate supply of oil at the under surface of the journal 12 is insured at all times. This is of particular importance where the journal 12 has remained stationary for any considerable period of time, since in the lubricating pads heretofore employed, the oil suspended in the waste or the pad will drain away from the surface contacting the journal when the latter remains stationary for a considerable period. The importance of this feature of the instant pad is emphasized because it is in the initial rotation of the journal, after a considerable period of rest, that the supply of oil thereto is most necessitated.

The instant lubricating pad has another very distinct advantage over those heretofore employed in that the use of the Angora fibers in constructing the bag or envelope portion 14 thereof eliminates the possibility of the surface of the pad which contacts the journal 12 becoming hard and glazed, as has heretofore been the case. For this reason, the instant pad is durable and can be used for a long period of time without necessitating the removal of the bag or cover portion thereof and the substitution of a new bag therefore. For this reason also, the separate portions of the bag or cover member 14 may be more permanently secured together than has been customary heretofore, which will more definitely insure against the escape of any of the fibrous filler therefrom. It will be readily understood that the instant lubricating pad is adaptable for use in any type of journal box, is very simple to insert therein and remove therefrom, and is cheap and easy to manufacture.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

A lubricating pad adapted to be inserted lengthwise into the lower portion of a journal box for alone supplying oil from the bottom of the box to the entire under surface of the journal, comprising a resilient oil absorbent filler, and an envelope of non-glazing fiber material surrounding said filler to form a main journal engaging portion in uninterrupted contact with substantially the entire under surface of said journal, the longer dimension of said journal engaging portion extending longitudinally of the journal and the major part thereof comprising main fibers extending transversely of said journal, the end portions of said envelope comprising main fibers extending longitudinally of said journal.

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