Sept. 18, 1945. C. L. HOWARD 2,385,280

CAR JOURNAL LUBRICATING DEVICE

Filed April 13, 1942

FIG. 1

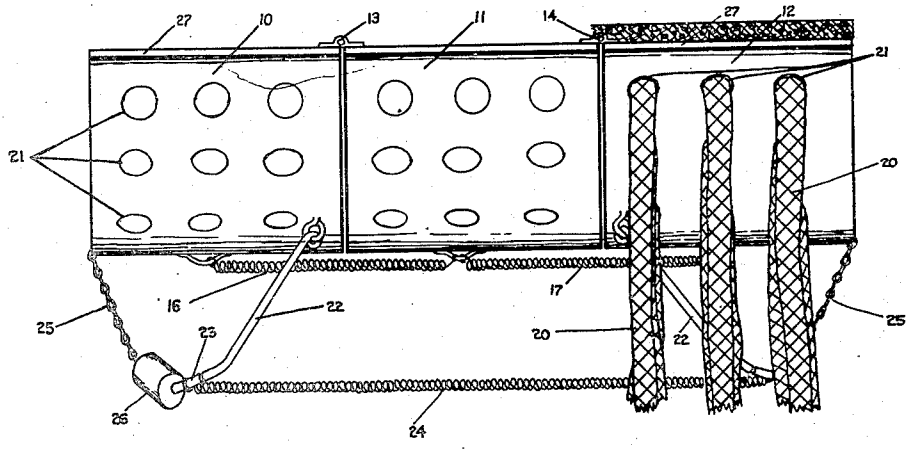


FIG. 2

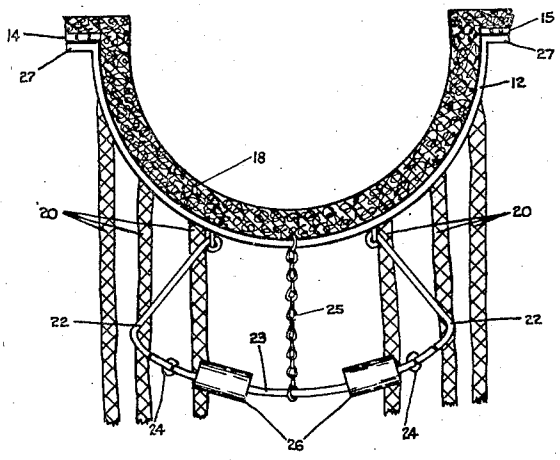
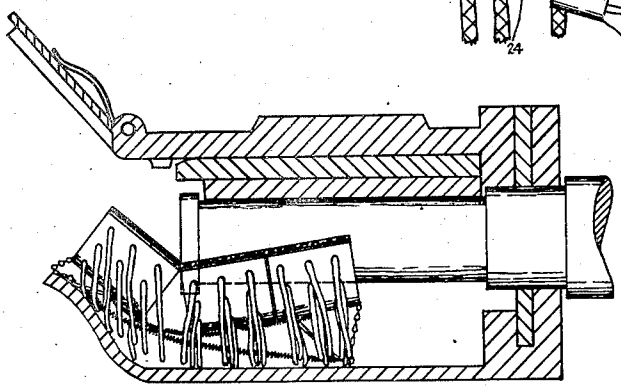


FIG. 3



INVENTOR
Clarence L. Howard

BY J. P. Jones
ATTORNEY

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CAR JOURNAL LUBRICATING DEVICE

Clarence L. Howard, Grand Junction, Colo.

Application April 13, 1942, Serial No. 438,681

3 Claims. (Cl. 308—88)

This invention relates to the lubricating of journals. More particularly it relates to a device for supplying or feeding a liquid lubricant to the journal of a railroad car, and the like journal.

A great number, and probably a large majority, of railroad cars in use today have simple journals and bearings of the type that has been used for a considerable number of years. The journals are an extension of the axles outside of the wheels and the weight of the car rests on half-bearings, made of brass or the like, which rest directly on the journals. The bearing and journal is enclosed by a journal box which contains the liquid lubricant or oil and which protects the journal and bearing from dust, weather, etc. The lower part of the journal box is commonly filled with more or less loosely packed cotton or wool waste, or similar absorbent material, which is kept thoroughly wet with the liquid lubricant and which serves primarily to keep the surface of the journal wet with lubricant so that the bearing and journal are well lubricated. To facilitate this the bearing does not surround the journal but instead is in contact only with the upper part of the journal and the lower part of the journal is exposed within the journal box. This method of lubricating the journal and bearing is inexpensive but has several distinct disadvantages, among which are a tendency for the cotton waste or other absorbent material to become packed and/or worn, so that it does not remain in good contact with the journal and does not keep it adequately lubricated. Another disadvantage is that strands or pieces of the cotton waste, or the like, become separated from the mass and are drawn between the bearing and the journal, where they have a serious adverse effect on the proper operation of the bearing and frequently cause the bearing to fail, causing "hot-boxes" and serious delays in train schedules. Pieces of waste are particularly likely to become lodged between the journal and bearing when these are momentarily separated as the car rounds curves or passes at high speeds over rough tracks.

Many devices have been proposed at one time or another to overcome such difficulties, but for one reason or another they have not found wide use. Some of these devices can be used only with special journal boxes, thereby requiring special installations and being not usable for existing cars. Others are difficult to insert into and remove from journal boxes or are not adequate in supplying lubricant to the journal and bearing.

I have now invented a device for supplying or feeding lubricant to a journal, such as the usual journal of a railroad car, which overcomes such difficulties. This device is articular, comprising two or more abutting sections joined by hinges and normally held together by tension springs which cooperate with the hinges to maintain the sections in an abutting relationship. Each section is lined on the inside with an absorbent pad or mat which feeds lubricant to the journal. The device also comprises resilient means at each end which rest upon and bear against the floor or bottom of the journal box when my device is in place, which aid in the proper correlation of the sections into a unified whole, and which are readily retracted to facilitate insertion and removal of the complete device from any commonly used journal box.

An object of my invention is to lubricate journals.

Another object of my invention is to provide a lubricating device for a journal.

A further object of my invention is to provide a lubricant-feeding device which can be readily inserted into and withdrawn from the common journal box of railroad cars.

Further objects and advantages of my invention will become apparent to those skilled in the art from the accompanying disclosure and discussion.

Particular features and details of a specific modification of my invention will now be described in connection with the accompanying drawing which forms a part of my disclosure and in which corresponding parts are designated with the same numerals.

Figure 1 is a diagrammatic side elevation of this modification of my invention, in which for purposes of clarity only one absorbent pad is shown.

Figure 2 is a diagrammatic end elevation of this same modification of my invention.

Figure 3 is a diagrammatic sectional side view of a conventional railroad car journal box, with the journal and the same modification of my invention shown diagrammatically in elevation.

This modification of my invention is made up of three semicylindrical or trough-shaped sections 10, 11 and 12 which are in abutting relationship and are joined at the abutting edges by hinges, or similar pivotal connections, 13 and 14, it being understood that similar hinges are also on the opposite side which is not in view, as hinge 15 which is seen in Figure 2. The hinges are such that the sections will pivot as shown in Figure 3. Also serving to join abutting sections are one or more tension springs, such as spring 16 joining sections 10 and 11 and spring 17 join-

ing sections 11 and 12. These springs are suitably connected at each end, as by a hook passing through an eye firmly attached to, or made a part of, the section and are of such a length and strength as to be under tension sufficiently to hold the sections firmly together as shown in Figure 1 and also such that the sections may readily be separated by rotation about the pivotal connections, as are sections 10 and 11 in Figure 3, without requiring the use of an undue amount of force. Each section contains an absorbent mat or pad, such as pad 18 shown in section 12. When the device of my invention is in use this mat or pad fits against the lower part of the journal. The shape and contour of the section and the thickness and shape of the pads should be such as to have the inside of the pad best conform to the curvature of the journal. The pad may be of cotton, wool, hair, or other suitable material woven or felted together, sufficiently loosely that oil can be contained within it by absorption and can flow through it as taken up by the journal and also sufficiently firmly that oil is not unduly forced out by the force with which the pad is held against the journal. Such pads have long been known. Oil is fed to the pads from a suitable reservoir, such as the bottom of the journal box, through wicks 20, which depend from the pad 18 through holes or perforations 21 in the sections 10, 11 and 12. These wicks are of a sufficient length to be in contact with oil in the bottom of the journal box when my device is in place, or to be in suitable contact with oil in any other suitable reservoir, and are also in intimate contact with the pads 18. I prefer that the wicks and pads be integrally formed or woven together, though it is to be understood that other suitable modifications may be used. Thus the pad 18 may comprise two pads, one to which the wicks are attached and lying next to the rigid section, and the other lying on or replaceably attached to this first pad and also being in direct contact with the journal; the part of the entire combination which is most subject to wear may thereby be more readily replaced.

My device, when in use, is held in place and also held firmly against the under part of the journal by resilient means attached to each end section. In the modification shown, such resilient means comprises a rigid support for each end formed by rigid arms 22, each pair of rigid arms being joined by a rigid cross-link 23, preferably somewhat curved as shown, tension springs 24 joining the rigid supports, and flexible coupling means 25 joining each rigid support to the end of my device. When my device is in use the rigid supports bear against the bottom of the journal box and tend to be somewhat spread apart. This spreading is opposed by the springs 24, which thereby tend to pull the supports together, resulting in maintaining the entire device firmly in place and against the under part of the journal, thereby maintaining the lubricant-containing pad 18 in contact with the journal. The supports extend away from the center of my device, and in such use the tension springs 24 are somewhat extended and the flexible couplings 25 are slack. The length of the couplings and of the supports should be such that in any journal box in which they will be used this condition will exist and yet when not in use the various parts will be as shown in Figure 1. Tension springs 24 should be of such a length and strength that they are under tension when not in use and can be extended so that the supports can lie against the end sections without requiring too much force to place them in such a position. By this arrangement the entire device may be readily inserted into and withdrawn from a journal box, as shown in Figure 3, and will still bear against the journal when in use. Other resilient means may also be used, such as a soft arcuate leaf spring, or springs, extending downwardly from each end. Preferably the rigid cross-links 23 are supplied with rollers 26 to facilitate movement of the supports along the bottom of the journal box during withdrawal and insertion, and also during use.

Each section has been described as semicylindrical, by which is meant that it is more or less a half-cylinder, generally somewhat less. However, the mat or pad 18 should cover a substantial part of the exposed lower part of the journal. The sections 10, 11, and 12 are shown equipped with a lip 27, which primarily functions to give structural strength to the device, to serve as a foundation for the hinges, and to meet the lower edge of the bearing and prevent or inhibit sidewise slippage or rotation of the lubricant-feeding device when the journal and bearing move relative to each other as the car goes over a rough stretch of track or around curves. It need not be used when the strength and/or thickness of the materials used do not necessitate it, or when there is no danger of sidewise slippage or rotation.

While I have illustrated and discussed only certain modifications of my invention, which I have found desirable, I do not desire to restrict myself entirely to such modifications and it will be understood that various obvious modifications and changes of details shown herein and described may be made by one skilled in the art without departing from the spirit of the teachings or from the scope of the claims. This applies particularly to the number of sections used, which need not be three, although I have found three to be a desired number, but should be two or more. More than four or five sections will generally not have any particular advantages.

I claim:

1. A lubricating device for a railroad car journal, which comprises in combination three perforated trough-shaped sections in abutting relationship and pivotally connected at abutting edges, each said section being supplied with an outwardly extending lip along each side, for each said section an absorbent pad lying therein and extending over the upper part of said lips and having capillary feeders integrally formed therewith and depending through perforations in said section, each said section being substantially semicylindrical so as to extend over substantially all of the corresponding underside of the car journal when in use and so that said lips meet the lower edge of the journal bearing, tension springs joining abutting sections, rigid supports pivotally attached to each end section and extending downwardly and outwardly, flexible coupling means joining each end section and the corresponding rigid support, and a tension spring joining said rigid supports.

2. A lubricating device for a railroad car journal, which comprises in combination at least three substantially semicylindrical perforated sections in abutting relationship and each having an outwardly extending lip along each side, hinges connecting the ends of abutting lips of abutting sections, for each said section an absorbent pad lying therein and extending over the upper part of said lips and having attached wicks extending

through perforations in said section, each said section being of such a size as to have the pad-covered lips meet the bearing journal when in use, tension springs joining abutting sections, rigid supports pivotally attached to each end section and extending downwardly and outwardly, flexible coupling means joining each end section and the corresponding rigid support, and a tension spring joining said rigid supports.

3. In a lubricating device for a railroad car journal which comprises in combination three perforated trough-shaped sections in abutting relationship containing absorbent pads and depending wicks attached thereto and passing down through said perforations, resilient means to press said device against said journal, resilient means joining abutting sections, and an outwardly extending lip along each side of each of said sections, covered by said absorbent pad, the improvement which comprises, in combination therewith, extending said sections so that said covered lips meet the lower edge of the journal bearing when said device is in use, and supporting said device by means of rigid supports pivotally attached to each end section and extending downwardly and outwardly as a part of the aforesaid resilient means to press said device against said journal.

CLARENCE L. HOWARD.