

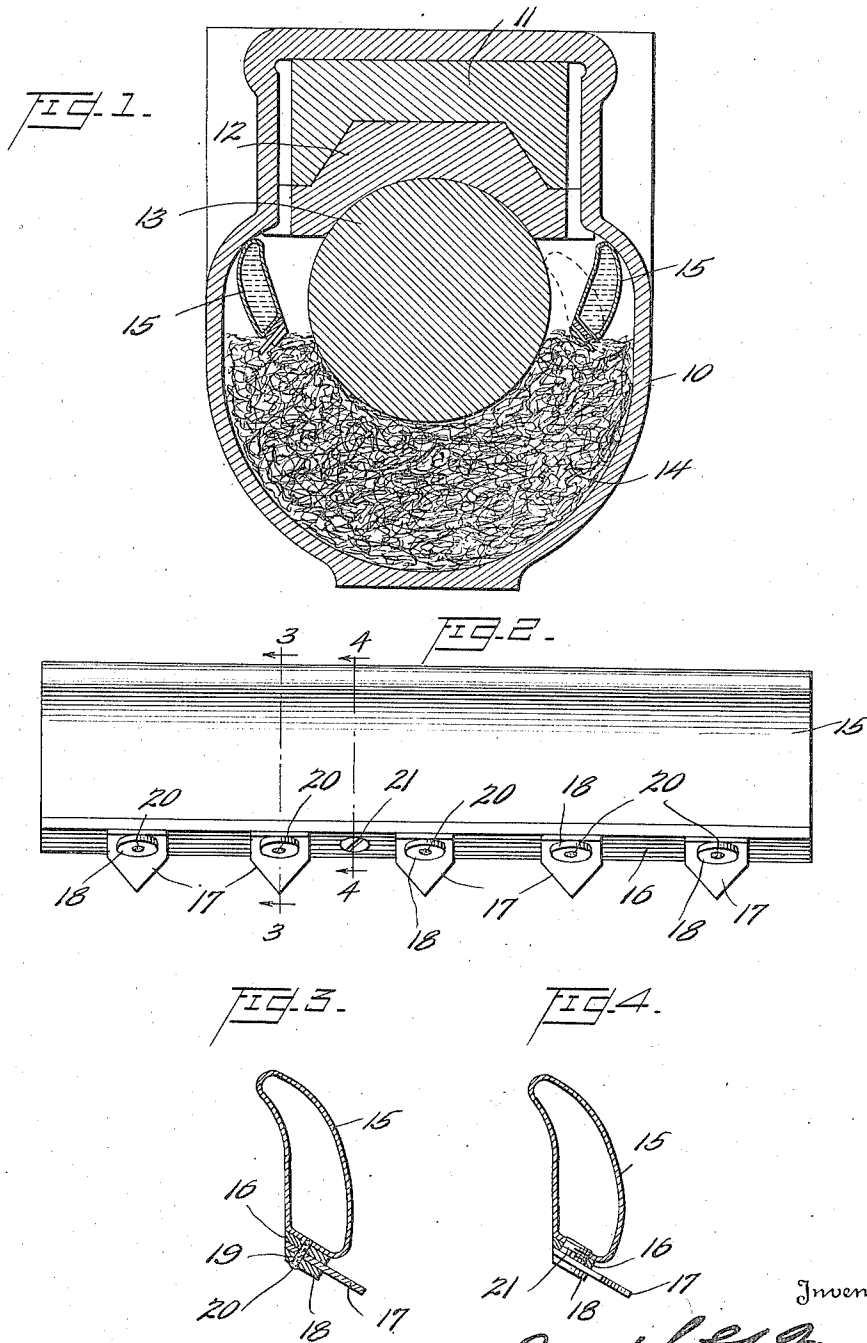
Aug. 9, 1938.

J. G. MOORE

2,126,129

LUBRICANT CONTAINER FOR JOURNAL BOXES

Filed May 4, 1937



Inventor

Joseph G. Moore,

Watson, Coit, Moore

By *Grindley* Attorneys

UNITED STATES PATENT OFFICE

2,126,129

LUBRICANT CONTAINER FOR JOURNAL BOXES

Joseph G. Moore, Albany, N. Y.

Application May 4, 1937, Serial No. 140,713

9 Claims. (Cl. 308—89)

The present invention relates to journal box constructions and to devices for providing emergency cooling and lubricating fluid therefor, commonly known as hot box arresting devices.

5 The desirability of providing railroad car journal boxes with auxiliary means for furnishing cooling and lubricating fluid when there is a failure of the normal supply of lubricant for any reason has long been appreciated by those concerned with the operation of railroads. Numerous kinds of such devices have been heretofore suggested, the most common type of such device comprising a container provided with sealing plugs or the like adapted to melt or fuse, when 10 the temperature within the journal box exceeds a certain predetermined maximum, to permit the discharge into the box of a sufficient quantity of cooling and lubricating fluid to maintain the journal and bearing in good operating condition until the next ordinary stopping point of the car or train is reached, thus making it unnecessary to halt the train at some intermediate point and, oftentimes, to detach the car having the over- 15 heated journal or hot box.

25 The purpose of the present invention is to provide such a device which, by reason of its simplicity, low cost and ease of application and removal, will be much more freely made use of in the ordinary every-day operation of the railroads than prior types known or used. The invention further contemplates the provision of an article of this character which has the capacity to prevent the accidental penetration of waste into any space or gap which may be momentarily 30 caused to occur between the journal of the axle and the superposed journal bearing when the car with which these elements are used is roughly handled. Those skilled in the art are aware of the fact that serious injuries to car journals and journal bearings are sometimes caused by the waste which normally occupies the lower portion of each journal box due to the fact that, because of sudden car stoppages in shifting or normal running operations, the journals of a car, 35 particularly the journals of a freight car, tend to laterally displace themselves with respect to the journal bearings, and it sometimes occurs that very substantial gaps are momentarily caused between these operating parts. When the normally mutually contacting surfaces of journal and journal bearing become separated, even for a brief instant of time, it is possible for some portion of the lubricant saturated waste in the journal box to enter the space between these sur- 40 faces and to be thereafter clamped in such posi-

tion when the journal and journal bearing return to their normal positions.

The interposition of any substantial quantity of waste between the journal bearing and journal impedes or entirely interrupts the normal flow of lubricant between these surfaces, thus resulting in excessive wear of those portions of the journal and journal bearing which are deprived of their normal supply of lubricating fluid by the action of the interposed body of waste. This occurrence is commonly known as "waste grab" and, while not an occurrence which happens frequently, nevertheless results in substantial damage to railroad rolling stock over a period of time. The invention contemplates the provision of an auxiliary device for employment in a journal box which is adapted to perform the double function of supplying lubricant when needed and preventing the very undesirable waste grab at all times and actual escape of waste from the journal box under very severe operating conditions, which device is, at the same time, readily insertable and removable. 50

The ordinary journal box construction comprises the journal box, wedge, journal bearing, and journal together with a body of waste which lies on the floor of the journal box and the upper surface of which has continual contact with the lower surface of the journal. My improved journal box construction includes, in addition to the elements above recited, two auxiliary devices which are readily insertable into and removable from the journal box through the usual journal box opening. One such device is positioned on each side of the journal and intermediate the journal and the journal box wall, resting upon the upper surface of the body of the waste. Such device includes a receptacle for lubricant and fusible means for permitting discharge of the lubricant when the temperature within the journal box exceeds a predetermined maximum and likewise includes means for anchoring at least one portion of the device to the upper surface of the body of waste at a point intermediate the journal and journal box wall, this last mentioned means preferably comprising a series of prongs or teeth which project downwardly into the body of waste. The device is of substantial weight and, because of its weight, its confinement in the limited space below the bearing and between the journal and journal box wall, and further because of the fact that it has associated therewith means for embedment in the upper portion of the body of waste upon which it rests, it substantially prevents the upward movement of 55

any portion of such waste into any space which may momentarily occur intermediate the cylindrical bearing surfaces of the journal and journal bearing.

It will be appreciated that the design and constructional details of an auxiliary device of the character described may be considerably modified while at the same time retaining its capacity to function in the specified manner and to achieve the desired results, and that the form of the invention illustrated in the accompanying drawing, and hereinafter described in detail, is set forth by way of example only.

In the drawing:

Figure 1 is a transverse section through a journal box construction in which the invention has been incorporated;

Figure 2 is a side elevation of one of the auxiliary devices; and

Figures 3 and 4 are transverse sections through this device, taken on the lines 3-3 and 4-4 of Figure 2, respectively.

That form of journal box construction selected for illustration includes the journal box 10, the wedge 11, the journal bearing 12 and the axle journal 13. These elements may be of any conventional type and the details thereof are not fully illustrated, comprising no portion of the present invention. In addition to the parts just enumerated a body of waste or like material is indicated at 14, this body comprising a lubricant saturated mass of fibrous material, such as cotton waste. The waste body is sufficiently large to reach to the undersurface of the journal 13 and it is preferred that it shall also extend upwardly on both sides of the journal to a certain extent, as indicated in Figure 1, in order that there may be a substantial area of contact between the waste body and the journal surface. In the ordinary operation of the journal box construction the saturated body of waste supplies the cylindrical surface of the journal with lubricant which lubricant passes between the mutually contacting cylindrical surfaces of the journal and the journal bearing so that wear of these surfaces is minimized.

The auxiliary devices, each of which is indicated generally at 15, are placed on opposite sides of the journal respectively, each loosely fitting in the space between the journal, journal box wall, journal bearing and upper surface of the body of waste. From an inspection of Figures 2, 3 and 4 it will be perceived that each such device comprises an elongated, relatively wide, relatively thin, and entirely closed chamber. In length the auxiliary lubricant container approximates that of the journal bearing 12 and it is formed as shown in cross-section in order that it may be conveniently inserted through the journal box opening, and as conveniently withdrawn from the journal box, the axle 13 being, as is well-known, somewhat enlarged at its end and the apertures for the insertion of devices such as illustrated being rather restricted. In general it may be said that it is desirable to make the container or auxiliary device as large as possible so as to be able to contain a maximum amount of fluid.

Affixed in any suitable manner to that edge of the container or auxiliary device 15 which is intended to be the lower edge thereof when the device is finally positioned, is a longitudinally extending strip 16, this strip, as well as the wall of the fluid container, being preferably formed of metal. Secured to this strip, which strip is disposed in a plane inclined to the generally parallel

side walls of the container, are a plurality or a series of prongs or teeth 17, and affixed to the lower surface of each of these teeth is a flat washer or button 18. The various parts just mentioned may be secured together in various ways but are preferably brazed, soldered, or welded. Each of the last mentioned washers or buttons is apertured at 19 and this aperture is also prolonged through the adjacent tooth 17, through the longitudinal strip 16, and through the wall of the fluid compartment, thus providing, when this aperture is otherwise unobstructed, a passage for the egress of fluid from the container, which fluid will flow downwardly to and into the body of waste 14. Normally the fluid escape apertures at the several points along the length of the container are sealed as by means of fusible sealing substance 20, and escape of the body of fluid within the container thereby normally prevented. Should the temperature within the journal box exceed a predetermined maximum, however, this material will fuse or melt and thus permit outflow of fluid for cooling and lubricating purposes. The fusible material is of such character as to fuse when the temperature within the journal box becomes excessive and quite regardless of the fact that no portion of the container may at that time be in contact with the axle, nor even with the journal box wall.

When inserted in the journal box, the two devices normally occupy the positions in which they are shown in Figure 1, the teeth of each device being embedded in the body of waste approximately midway between the journal and journal box wall and the upper edge of the device normally resting against the journal box wall. Shocks incident to ordinary railroad car usage may of course result in tilting of these members about their lower edges, for instance from the position indicated in full lines in Figure 1 to the positions indicated in dotted lines. The containers are so constructed, however, that this change of position effects no injury and likewise effects no modification in the functioning of the device. Regardless of the tilting movements of the container, the prongs 17 remain embedded in the upper surface of the waste body and because of the stringy nature of the waste, restrain all portions of the upper surfaces of this body against upward movement. The auxiliary devices naturally may not be themselves raised, at least to any substantial extent, at any time, due to pressure of the waste from below, owing to the fact that the height (width) of each is such that its upper edge lies just below the lower surface of the journal bearing. Hence should there be any tendency for the waste to move upwardly, this will be positively prevented by the superposed container and hence the waste prevented from entering any gap which may normally occur between the normally contacting surfaces of journal and journal bearing. In this way waste grab is prevented and quite regardless of the violence of the shock to which the journal box construction is subjected.

The container is of course provided with some suitable filling opening through which the lubricant may be introduced and in the container illustrated this filling opening is in its lower edge, passing through the container wall and the strip 16, this opening being normally closed by a machine screw 21. In the event that the plugs 20 of fusible material are melted or fused and the contents discharged, the device will be removed

from the journal box and replaced by a similar, lubricant filled, container.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. An article of manufacture comprising a fluid container having means to cause discharge of its contained liquid when its temperature reaches a predetermined degree, said container being adapted to be positioned upon the surface of a body of waste in a journal box and having means to interlock with the waste.

2. An article of manufacture comprising a fluid container having means to cause discharge of its contained liquid when its temperature reaches a predetermined degree, said container being adapted to be positioned upon the surface of a body of waste in a journal box and having means to penetrate into such body of waste.

3. An article of manufacture comprising a fluid container having means to cause discharge of its contained liquid when its temperature reaches a predetermined degree, said container being adapted to be positioned upon the surface of a body of waste in a journal box and having a plurality of spaced downturned prongs or teeth adapted to penetrate into such body of waste.

4. An article of manufacture comprising an elongated, relatively wide and thin fluid container adapted to be positioned in a journal box with one longitudinal edge resting upon the surface of a body of waste therein, said container having a plurality of apertures formed in the wall thereof and normally closed by fusible plugs, and means secured to one edge for interlocking with the said waste.

5. In a journal box construction, the combination with the journal box, axle, bearing and wedge, of a body of waste or the like in the lower portion of the journal box, the upper surface of which contacts with the axle, of an emergency fluid receptacle within the box and intermediate the axle and journal box wall, said receptacle having liquid sealing means which

fuses at a predetermined temperature, and means to penetrate into said waste, for the purpose set forth.

6. In a journal box construction, the combination with the journal box, axle, bearing and wedge, of a body of waste or the like in the lower portion of the journal box, the upper surface of which contacts with the axle, of an emergency fluid receptacle within the box and intermediate the axle and journal box wall, said receptacle having liquid sealing means which fuses at a predetermined temperature, and a series of spaced prongs or teeth rigid therewith and projecting downwardly into said body of waste.

7. In a journal box construction, the combination with the journal box, axle, bearing and wedge, of a body of waste or the like in the lower portion of the journal box, the upper surface of which contacts with the axle, of an emergency fluid receptacle within the box and intermediate the axle and journal box wall, said receptacle having liquid sealing means which fuses at a predetermined temperature, being relatively long and flat, and having one longitudinal edge resting upon the surface of the waste body, said lower longitudinal edge having means to penetrate into said waste, the upper edge of the container resting against the axle or journal box wall.

8. In a journal box construction, in combination, a journal box, bearing, axle, body of waste in the bottom of the box the upper surface of which contacts with the axle, and auxiliary containers for lubricant, one on each side of the axle and resting upon the waste body, each container having liquid sealing means which fuses at a predetermined temperature and means for anchoring one portion of said container to the waste body.

9. The combination set forth in claim 8 in which the containers are relatively long, wide and thin and are unattached to any portion of the journal box construction except the waste body.

JOSEPH G. MOORE.