Jan. 5, 1960 L. T. EVANS 2,919,964

JOURNAL BOX LUBRICATION

Filed Dec. 24, 1956 3 Sheets-Sheet 1

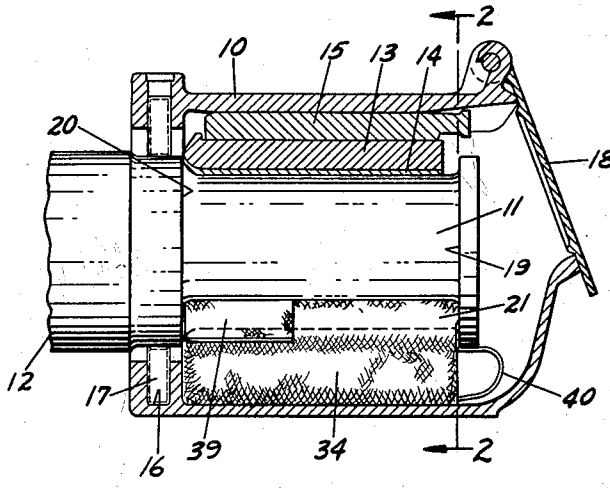


Fig. 1.

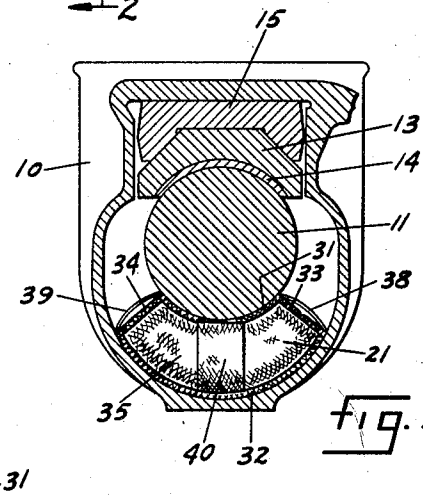


Fig. 2.

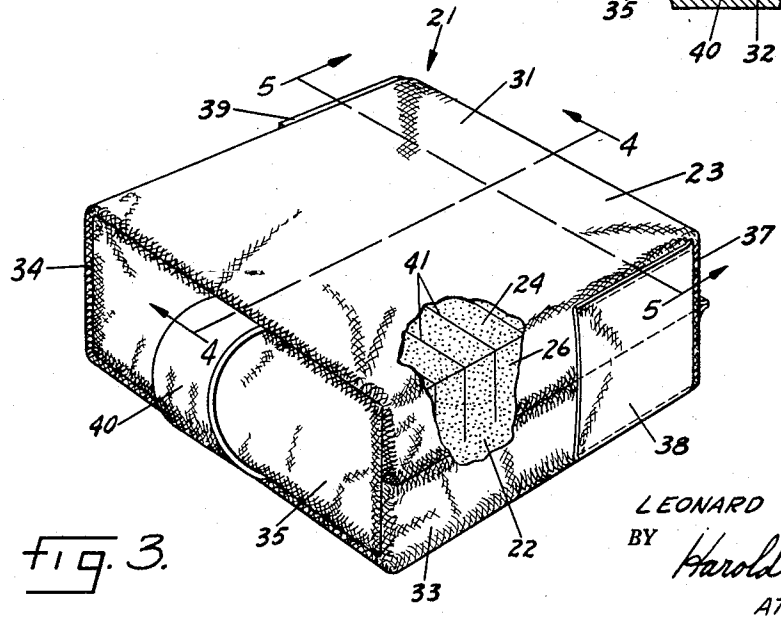


Fig. 3.

INVENTOR.
LEONARD T. EVANS,
BY Harold R. Hood
ATTORNEY.

Jan. 5, 1960 L. T. EVANS 2,919,964

JOURNAL BOX LUBRICATION

Filed Dec. 24, 1956 3 Sheets-Sheet 2

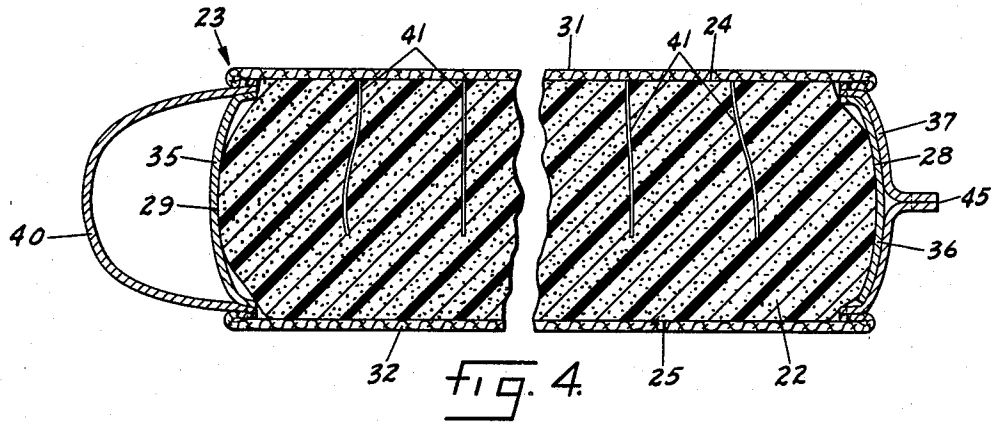


Fig. 4.

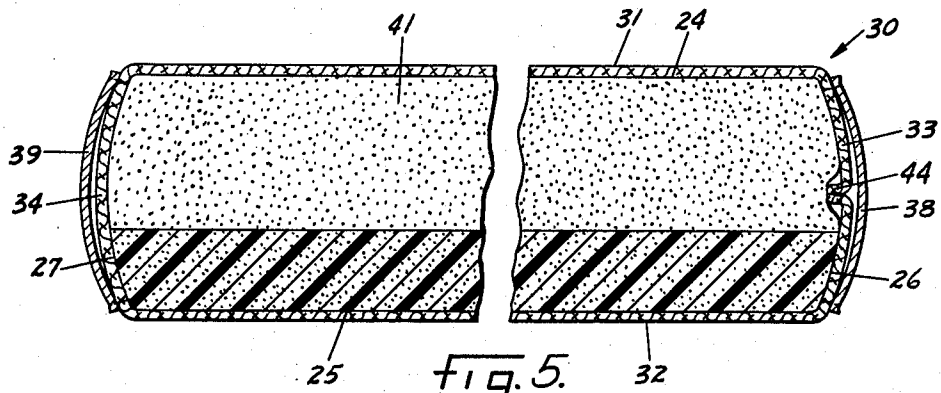


Fig. 5.

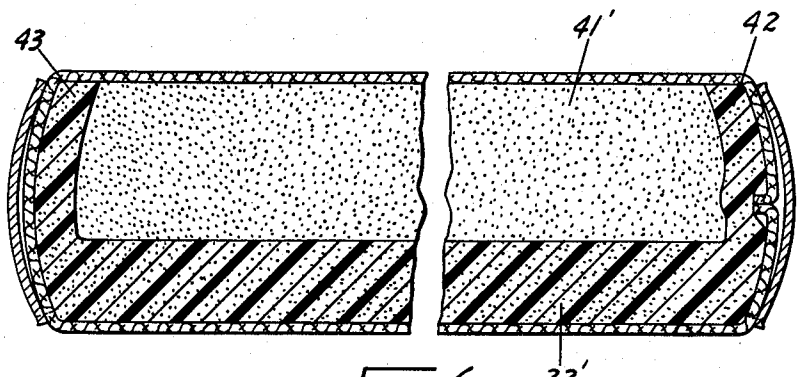


Fig. 6.

INVENTOR.
LEONARD T. EVANS,
BY Harold B. Hood
ATTORNEY.

Jan. 5, 1960 L. T. EVANS 2,919,964

JOURNAL BOX LUBRICATION

Filed Dec. 24, 1956 3 Sheets-Sheet 3

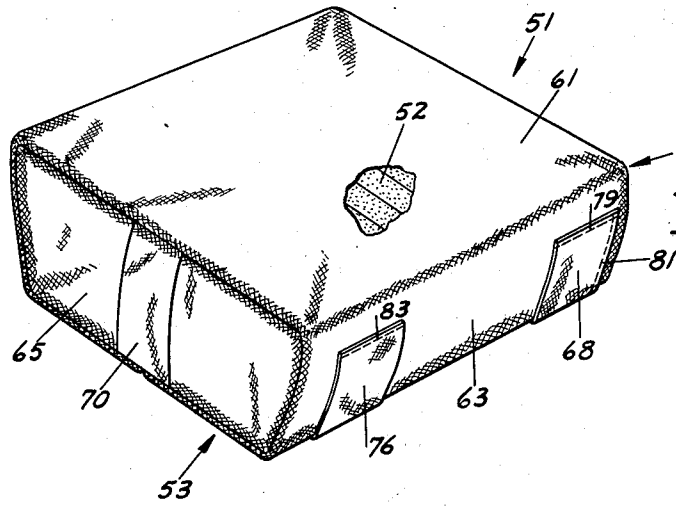


Fig. 7.

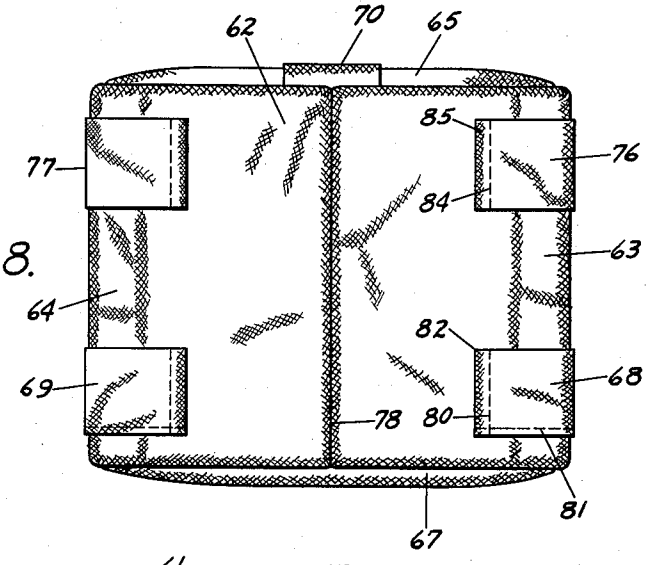


Fig. 8.

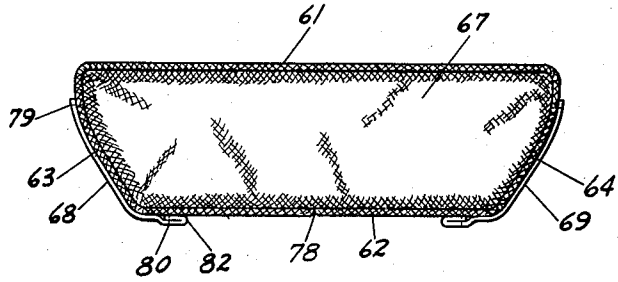


Fig. 9.

INVENTOR.
LEONARD T. EVANS,
BY Harold B. Hood,
ATTORNEY.

United States Patent Office

2,919,964

Patented Jan. 5, 1960

2,919,964

JOURNAL BOX LUBRICATION

Leonard T. Evans, Indianapolis, Ind.

Application December 24, 1956, Serial No. 630,369

13 Claims. (Cl. 308—243)

The present invention relates to a lubricator pad, primarily designed and intended for use in journal box lubrication for railroad cars. The device of the present invention finds its primary utility as a substitute for the loose waste which, for many years, has been conventionally used as a retainer and distributor for lubricating oil in railway car journal boxes, and it has been so illustrated and will be so described. It will be appreciated, however, that the pad of the present invention may find substantial utility in other environments where it will perform, with comparable efficiency, the function of retaining, capillating and distributing a mass of lubricating oil to a moving part with which the pad is held in contact.

In recent years, the deficiencies of loose waste as a medium for performing the retaining and distributing functions in railway car journal boxes have been recognized, and numerous attempts have been made to provide a suitable substitute for such loose waste in that environment. So far as I know, however, previously-proposed devices for such purpose, while overcoming the major disadvantages of loose waste, have sacrificed the three major advantages of loose waste; viz., a high wicking rate, a low cost and reclaimability.

The primary object of the present invention, then, is to provide a lubricating pad which, while retaining the advantages of loose waste to a very high degree, likewise overcomes all of the disadvantages of loose waste as a medium for retaining and distributing lubricant from the conventional well of a railroad car journal box to the journal therein.

Further objects of the invention will appear as the description proceeds.

To the accomplishment of the above and related objects, my invention may be embodied in the forms illustrated in the accompanying drawings, attention being called to the fact, however, that the drawings are illustrative only, and that change may be made in the specific constructions illustrated and described, so long as the scope of the appended claims is not violated.

Fig. 1 is a somewhat diagrammatic vertical longitudinal section through a conventional journal box and journal assembly, showing my improved lubricator pad in place therein;

Fig. 2 is a transverse section therethrough, taken substantially on the line 2—2 of Fig. 1;

Fig. 3 is a perspective view of a pad constructed in accordance with the present invention, drawn to an enlarged scale, and with a portion of the encasement broken away;

Fig. 4 is a section taken substantially on the line 4—4 of Fig. 3, and drawn to a further enlarged scale;

Fig. 5 is a section taken substantially on the line 5—5 of Fig. 3;

Fig. 6 is a section similar to Fig. 5 but showing a modified form of pad body.

Fig. 7 is a perspective view of a preferred form of pad;

Fig. 8 is a bottom plan view thereof; and

Fig. 9 is an end elevation thereof.

Referring more particularly to the drawings, it will be seen that I have illustrated a conventional railway car journal box 10 receiving the journal end 11 of a conventional axle 12 and housing the usual bearing 13 with its lining 14 and associated wedge 15. As shown, the journal box is formed with an annular slot 16 near its rear end for the reception of a conventional dust guard or oil seal 17; and said box is provided with an opening at its forward end normally closed by a hinged cover 18. The journal surface 11 is bounded at its opposite ends by mutually facing shoulders 19 and 20 in accordance with conventional practice.

My improved lubricator pad is indicated generally by the reference numeral 21 and comprises a body 22 of stable foam material and an encasement indicated generally by the reference numeral 23.

The term "stable foam material," as used herein, is intended to apply to any spongy, non-fibrous mass made up of relatively thin-walled, hollow, connecting cells and stable in the sense that the mass is not fluent and, while it is readily deformable, the mass will return to its original shape when relieved of deforming forces; which mass will absorb and hold a substantial volume of oil under normal conditions and will act to capillate oil from a lower level to an upper surface thereof. While several known foam materials are, to a greater or less extent, usable as the body of my present invention, in combination with the encasement of specific characteristics hereinafter to be described, I presently believe that the optimum material for use in the formation of the body 22 is a polymerized organic substance manufactured from a class of compounds known as modified diisocyanate polyesters by reacting a liquid diisocyanate resin with a catalyst. The resulting reaction causes the liberation of carbon dioxide gas which causes the material to foam as the carbon dioxide is expelled from the reactor. The resultant product is known commercially as polyurethane flexible foam. It has a specific gravity in the range of .03 to .06 and has several times the strength and abrasion resistance of foam rubber. A stability test performed by compressing the foam to 20% of its equilibrium size at a rate of 350 times per minute indicated no breakdown in cell structure and only 2% to 3% permanent deformation after 1,500,000 compressions. It shows no deterioration from contact with any petroleum product, salt water, ozone or sunlight. It is resistant to practically all solvents with the exception of acetone and chloroform. It will withstand high temperature for prolonged periods, and although it exhibits an increase in resistance to compression at subzero Fahrenheit temperatures, it never becomes brittle. It has a connecting cell structure which allows capillary action to take place when it comes in contact with a liquid. It will readily absorb oil but absorbs water much less readily due to its minute cell structure and to the high surface tension of water. Its resistance is 20% less than that of foam rubber, meaning that when it is compressed it does not return to its original shape as quickly, or with as great a force as foam rubber. However, it has excellent resistance to breakdown in structure due to compression set and flex-fatigue reactions. It is five times as shock-absorbent as foam rubber, meaning that it will absorb the shock of action in a journal box rather than become displaced, as often happens with, for instance, foam rubber.

At a temperature of 100° F., polyurethane flexible foam will retain approximately 25% more oil than will an equivalent weight of mixed cotton and wool waste, and will retain approximately 10% more than an equivalent volume of foam rubber. At 200° F. it shows a decrease in oil retention of less than 15%, whereas the retention capacity of both waste and foam rubber is greatly reduced at that temperature. Specifically, at 200° F.,

polyurethane flexible foam will retain approximately 100% more oil than will waste, and 30% more oil than oil than will foam rubber. Its flexibility is much greater than that of foam rubber, requiring approximately 50% less force for the same amount of deflection or deformation as compared with foam rubber.

During the mixing of the resin and the catalyst, as above described, an allyl aryl phosphanate may be added as a flame retardant, and will so permeate the mass that the resultant foam will not support combustion; and, particularly for use in railroad car journal boxes, I prefer thus to permeate the foam mass.

The block 22 may take any shape which is suitable to the performance of its intended duties in its intended environment. In the illustrated embodiments of the invention, the body 22 is substantially square in top elevation and rectangular in side and end elevations, being formed to provide a plane top surface 24, bottom surface 25, lateral surfaces 26 and 27 bounding and joining the top and bottom surfaces, and end surfaces 28 and 29, bounding and joining the top and bottom surfaces and the lateral surfaces. The top surface 24 of the body 22 is adapted, in use, to be presented toward the journal 11; the bottom surface 25 is adapted to be presented toward the bottom of the well or reservoir in the box 10, the lateral surfaces 26 and 27 are adapted to be disposed in parallelism with the axis of the journal 11, the rear end surface 28 is adapted to be presented toward the rear end of the box 10, and the front end surface 29 is adapted to be presented toward the front of the box 10.

Heretofore, others have attempted to satisfy the requirements, in use, of a lubricating pad for use in railway car journal boxes, through the use of a pad of spongy material enclosed in an encasement of one kind or another; but those devices, so far as I am advised, have never been successful, and it is my opinion that they have failed at least partly because of the unsatisfactory characteristics of the encasements used therein. The encasement of the present invention is indicated generally by the reference numeral 23 and includes a sheet 30 of soft, unsized, porous fabric having a high wicking property and disposed to overlie the top, bottom and lateral surfaces of the body 22. A satisfactory material for this sheet is a specially woven fibrous cotton fabric substantially corresponding in texture to material conventionally used for kerosene stove or lamp wicking. The sheet 30 is arranged to provide a top panel 31 overlying and in contact with the body surface 24, a bottom panel 32 overlying and in contact with the bottom surface 25 of the body, and lateral panels 33 and 34 overlying and in contact with the lateral surfaces 26 and 27 of the body. Except in relatively small areas of the lateral panels 33 and 34, the sheet 30, throughout its entire extent, has its outer surface exposed so that, when the pad 21 is in use position as illustrated in Figs. 1 and 2, the outer surface of the panel 32 rests upon the bottom of the cavity within the journal box 10 and the outer surface of the panel 31 bears against the journal 11.

The encasement 30 includes, also, end cover elements 35, 36 and 37. These elements are formed of tightly woven fabric which may preferably be two-ply cotton material and which is relatively impermeable to oil. The cover 35 for the front end of the pad overlies and bears upon the front end surface 29 of the body 22, and the cover element 36 overlies and bears against the rear end surface 28 of the body 22, while the element 37 overlies the element 36. In the particular form of pad shown, the opposite ends of the sheet 30 are stitched together as at 44 and the edges of the cover elements 35, 36 and 37 are turned inwardly and stitched to the longitudinal edges of the sheet 30 whereby the sheet 30 and the end cover elements cooperate to define a closed, complete encasement for the body 22. The tightly woven end cover elements largely prevent flow of oil from the retaining

body 22 at the front and rear ends thereof. Since experience shows that most oil loss from journal boxes with previously known lubricant retainer means therein is through the rear ends of the boxes and past the seals 17, I prefer to provide a double cover means for the rear end of the pad, as above described.

Near the rear end of each lateral surface of the pad, I preferably stitch a layer 38 or 39 of suitable material, which may be similar to, or the same as, the material used for the end cover elements, to define pockets opening toward the front end of the pad and closed at their rear ends, for the accommodation of the prongs of a conventional inserting tool. The provision of these pockets facilitates the manipulation of the pad to insert the same into its work position in the box 10, wherein the end closure members 35 and 37 lie substantially in contact with the shoulders 19 and 20, respectively. A loop 40 of flexible material such as, for instance, the kind of material used for the end cover members, is preferably secured to the pad to project forwardly from the forward end of the pad to facilitate its removal.

The use of material having a high wicking property is particularly important for the top panel 31, but is also valuable for the bottom panel 32 and the lateral panels 33 and 34. Of course, it will be understood that the pad is saturated, to a suitable degree, with lubricating oil. The wicking material of the sheet 30 actually draws oil from the body 22 for delivery to the surface of the rotating journal 11 with which the panel 31 is in contact, the oil is delivered copiously to the surface of the journal 11. Flow of oil from the body to the panel 31 is facilitated and accelerated in the optimum form of my invention by a plurality of slits 41 formed in the body 22 and opening through the surface 24 thereof. These slits 41, which extend in a direction perpendicular to the axis of the journal 11, are extremely narrow so that, when the pad is in working position, the facing walls of each slit are actually in contact with each other throughout substantially their entire areas, and the slits have, as a consequence, a quasi-capillary action whereby the oil tends to move rapidly up through each slit to the surface 24 of the body 22. Additionally, as the journal 11 shifts, relative to the box 10, during movement of the railway car over the rails, some components of that relative movement will, at times, be vertical, whereby the body 22 will be squeezed or compressed and then relaxed to produce a pumping action; and I presently believe that, during such pumping action, oil will flow more freely to the surface 24, through the slits 41, than it could flow through the cellular structure of the body 22.

In the form of invention illustrated in Fig. 5, the slits 41 open not only through the surface 24 of the body but also through the lateral surfaces 26 and 27 thereof. For some applications, I consider the form of invention illustrated in Fig. 6 to have same advantages over the form illustrated in Fig. 5. In the form of Fig. 6, the body 22' is formed with slits 41' which terminate short of the lateral surfaces of the body, being separated therefrom by wall sections 42 and 43. This form of the invention also has certain advantages which become apparent during the formation of the body, which is molded upside down in a mold which is provided with upstanding fins which form the slits 41 or 41'. In the form of Fig. 6, of course, these fins will terminate short of the mold walls which define the lateral surfaces of the body, and will thereby leave room for the originally-liquid material to flow past the fin ends to facilitate uniformity of the composition of the lateral portions of the finished body.

Thus, it will be seen that the pad disclosed herein retains the major advantages of waste packing for journal boxes, as outlined hereinabove. The body of polyurethane flexible foam retains oil even more effectively than does the conventional mixture of cotton and wool waste, and this advantage of the polyurethane foam material

multiplies as the oil temperature increases. Even at extremely low temperatures, and when the car is idle for a long time, the polyurethane pad body holds the oil against draining into the well of the box at least as effectively as would conventional waste, and much more effectively than any substitute material heretofore proposed.

While the pad of the present invention is somewhat more expensive than ordinary waste, its useful life is substantially longer than a single packing of waste, and its cost is less than that of most substances heretofore proposed as substitutes for waste.

Like conventional waste, the pad of the present disclosure is readily reworkable. By opening the seam **45**, and withdrawing the loose, lower end of the cover member **36**, the encasement **23** may be opened to permit withdrawal of the body **22** from the encasement, whereafter the encasement and the pad may be fully cleaned by washing in hot lubricating oil to remove moisture and dirt. After such washing, the body may be reinserted in the encasement, the member **36** may be tucked back into place, and the seam **45** may be restitched, whereafter the pad is available for reuse.

Additionally, the pad of the present disclosure overcomes substantially all of the disadvantages of conventional waste. Since the encasement is woven fabric, waste grabs do not arise in the use of the present pad; portions of the packing cannot become displaced, and consequently it is impossible for portions of the packing to become dry, during long periods of car idleness, to act as wipers instead of lubricant spreaders; and the pad of the present invention will not become soggy and tend to pack, as waste does, as a result of injection of a superabundance of lubricating oil into the journal box.

It is found that, even during long periods of idleness under conditions of either excessively high or excessively low temperatures, the encasement panel **31**, because of the oil-retaining capacity of the body **22** and the high wicking quality of the sheet **30**, remains well saturated with oil so that, when the car first starts to move, oil is immediately available in the panel **31** to be spread on the journal **11**.

Because of the provision of the relatively-impermeable end closure elements, loss of oil past the seal **17** is substantially completely prevented. Because of the lower resistance to deformation, and the slower rate of return to equilibrium condition upon relief from distorting forces, which are characteristic of polyurethane flexible foam, as compared with other known stable foams, wear and attrition of the panel **31**, in use, is reduced to a minimum; and because of the ready deformability of polyurethane flexible foam, any tendency toward displacement of the pad from its optimum position, resulting from the shocks of action in the journal box is likewise minimized.

The pumping action above referred to results, in all railroad car journal box installations, during travel of the car as a result of lateral, vertical or axial movement of the journal, relative to the work, as the car moves through cross-overs, curves, wide gaps between rail ends or the like, or as a result of acceleration or braking action. In all of these movements, the effect of the pumping action is increased by the provision of the slits **41** or **41'**. Occasionally, a journal will become distorted, or out of round; and such distortion will, of course, increase the pumping action, thus delivering a greater supply of oil to the journal to compensate for the increased demand resulting from journal deformation.

A further advantage of the readily flexible pad material, when combined with an encasement of the character above described, lies in the fact that the complete pad is itself highly flexible, whereby insertion and removal of the pad to and from its working position, without the necessity for jacking the box or removing the bearing and/or wedge, is facilitated.

A further advantage which resides in the use of the material of high wicking capacity for the sheet **30** is that, during pumping action, the oil flows freely and rapidly through the sheet **31** back into the cellular structure of the body **22** when distorting forces are removed from the pad. Of course, the excellent absorbing quality of the preferred material for the body **22** contributes, likewise, to this rapid return of the oil to the body **22**.

As has been said, a pad utilizing some material other than polyurethane flexible foam for the formation of the body, but utilizing the specific form of encasement disclosed herein will develop many of the above outlined advantages; but attainment of all of the advantages to a maximum extent demands the use of such polyurethane flexible foam as the body material, and the provision of the slits **41** or **41'** therein. Likewise, while the pad disclosed herein has been designed primarily for use as a journal box packing, and finds its greatest utility in that environment, it can be used to substantial advanatge in almost any environment in which it is desired to retain a body of lubricating oil and to deliver that oil, freely and copiously, to a moving element in contact with a surface of the sheet **30**.

A further form of the invention, embodying certain refinements and advantages over the structures thus far described, is illustrated in Figs. 7, 8 and 9, and is indicated generally by the reference numeral **51**. In this form of the invention, the block or body **52** is generally similar to the block or body **22** or **22'** described above, and may be substantially square in top elevation and rectangular in side elevation; but in end elevation, the lateral surfaces of the block are seen to flare from the bottom of the block toward the top thereof. As in the previously-described embodiments of the invention, the pad includes an encasement indicated generally by the reference numeral **53**. In this form of the invention, the encasement comprises a sheet **60** of soft, unsized, porous fabric having a high wicking property and arranged to provide a top panel **61**, a bottom panel **62** and side panels **63** and **64**, together with cover means **65** and **67** for the end surfaces of the body, said cover means being formed of tightly woven fabric which may preferably be two-ply cotton material and which is relatively impermeable to oil. The sheet **60** is wrapped about the body **52** in the manner illustrated and has its opposite ends joined in a seam **78** which lies substantially in the median line of the bottom surface of the block, for a reason which will appear; while the longitudinal edges of the sheet **60** are seamed to the upper and lower edges of the cover means **65** and **67**. Preferably, the cover means **67** will comprise two thicknesses of material analogous to the elements **36** and **37** of Fig. 4.

Strips **68** and **69** of relatively hard, abrasion-resistant material, such as the kind of fabric from which the end cover means **65** and **67** are formed, are secured to the lateral panels **63** and **64**, respectively, near the rear ends thereof to define forwardly-opening pockets for the accommodation of an inserting tool. It will be seen that, in this form of the invention, the pockets are shallower than the pockets **38** and **39** of the previously-described forms of the invention, and that their upper ends are spaced slightly below the top panel **61** of the sheet **60**. A further strap **70** has its upper end secured substantially in the plane of the top panel **61** and its lower end secured substantially in the plane of the bottom panel **62**, said strap traversing the front end **65** of the pad and, in this form of the invention, snugly overlying the element **65**. The strap is loose at its edges, however, so that a withdrawing tool or an operator's fingers may be inserted between said strap and the panel **65** to withdraw the pad from a journal box.

Straps **76** and **77**, preferably of material similar to that of the strips **68** and **69**, are associated with the lateral panels **63** and **64** near the forward ends thereof to define tunnels registering with the open ends of the pockets **68** and **69**, respectively.

It will be seen that the upper end of each strip 68 or 69 is secured to its lateral panel 63 or 64 by a line of stitching 79, and that its lower end turns beneath the bottom panel 62 and extends toward the seam 78. The bottom extremity of each such strip is turned back upon itself and is secured to the bottom panel 62 by a line of stitching 80, whereby to define a loop, patch or pad 82 overlying said bottom panel. The closed bottom or rear end of each pocket 68 or 69 is defined by a line of stitching 81 which may extend continuously between the seams 79 and 80.

Each strap 76 or 77 is secured at its upper end to its lateral panel 63 or 64 by a line of stitching 83 which may be aligned with the seam 79; and the lower end of each such strap continues across the bottom panel 62 toward the seam 78 as illustrated in Fig. 8, its lower extremity being turned back upon itself to form a loop or pad 85, similar to the pad 82, and then is secured to the panel 62 by a line of stitching 84 which may be aligned with the seam 80. The front and rear edges of the straps 76 and 77, however, are loose so that the prongs of an inserting tool may be threaded through the tunnels defined by the straps 76 and 77, to enter the pockets 68 and 69.

The action of a journal 11 upon a lubricator pad, particularly such as results from the shocks involved in travelling over a rough track, in starting, in stopping and in bumping, tends to move such a pad in either a clockwise direction or a counter-clockwise direction as viewed in Fig. 2. While the surface of the journal itself, engaged by the panel 61, for instance, is smooth and polished and therefore subjects the panel to very little abrasive effect, the journal box 10 is usually a casting, the inner surface of which is none too smooth. It has been found that lubricator pads generally of the character here under consideration show primary wear at the surface of the bottom panel 32 (see Figs. 2, 4 and 5); and I have found that such wear may be minimized by the construction illustrated in Figs. 7 to 9, wherein the lower ends of the strips 68 and 69 and of the straps 76 and 77 are thus extended to overlie portions of the panel 62 and thus to provide primary wear surfaces for the pad against the floor of the journal box reservoir. Because the material of said strips and straps is harder and more resistant to abrasion than is the necessarily soft, loosely-woven wicking material of the sheet 60, it has been found that a pad constructed in accordance with the illustration of Figs. 7 to 9 will outlast previously known forms of pads to a substantial extent. The double thickness loops 82 and 85 further contribute to protection of the pad against the abrasive effect of the inner surface of the journal box as the pad shifts under the action of the journal 11.

The concept of joining the opposite ends of the sheet 60 in a seam 78 located substantially in the longitudinal median line of the body 52 contributes to the efficiency of the wicking action of the pad as a whole. Such an arrangement provides equal, uninterrupted wicking paths from the bottom panel 62 and the lower portions of the lateral panels 63 and 64 to the top panel 61 which is in lubricating engagement with the journal 11.

Flaring the lateral surfaces of the pad, whereby the bottom surface thereof is peripherally narrower than the top surface when the pad is in equilibrium condition, facilitates insertion and withdrawal of the pad without loss of lubricating area of the top panel, and seems to improve the wicking action of the pad as a whole.

I claim as my invention:

1. A lubricator pad comprising a body of stable foam material having a non-fibrous, connecting cellular structure capable of absorbing oil and of transporting the same between its surfaces by capillary action, said body further being sluggishly resiliently deformable, and an encasement for said body, said encasement comprising a sheet of soft, loosely-woven, unsized, porous fabric having a relatively high wicking property overlying the top, bottom and side surfaces of said body, the inner surface of said sheet being in contact with said body and the outer surface of said sheet being exposed, and said encasement further comprising cover means for the opposite end surfaces of said body, said cover means being formed of tightly-woven fabric, relatively impermeable to oil and having a very low wicking property, said cover means being physically secured to said sheet.

2. A lubricator pad comprising a body of polyurethane flexible foam and an encasement for said body, said encasement comprising a sheet of soft, losely-woven, unsized, porous fabric having a relatively high wicking property overlying the top, bottom and side surfaces of said body, the inner surface of said sheet being in contact with said body and the outer surface of said sheet being exposed, and said encasement further comprising cover means for the opposite end surfaces of said body, said cover means being formed of tightly-woven fabric, relatively impermeable to oil and having a very low wicking property, said cover means being physically secured to said sheet.

3. A lubricator pad having a first surface adapted to be held with said first surface in contact with a rotatable element to be lubricated, said pad having lateral surfaces bounding said first surface and substantially parallel with the axis of rotation of such an element when said pad is so held, end surfaces bounding said first surface and substantially perpendicular to said axis when said pad is so held, and an opposite surface substantially parallel with said first surface, said pad comprising a body of stable foam material and an encasement for said body, said encasement comprising a sheet of soft, unsized, porous fabric having a high wicking property and wrapped about said body to constitute said first surface, said lateral surfaces and said opposite surface, and cover means overlying the ends of said body to constitute said end surfaces, said cover means being formed of tightly-woven fabric, relatively impermeable to oil and having a very low wicking property and being physically secured to said sheet to complete a closed encasement for said body, the lateral dimension of said first surface exceeding that of said opposite surface, and said lateral surfaces flaring from said opposite surface toward said first surface.

4. A lubricator pad having a first surface adapted to be held with said first surface in contact with a rotatable element to be lubricated, said pad having lateral surfaces bounding said first surface and substantially parallel with the axis of rotation of such an element when said pad is so held, end surfaces bounding said first surface and substantially perpendicular to said axis when said pad is so held, and an opposite surface substantially parallel with said first surface, said pad comprising a body of stable foam material and an encasement for said body, said encasement comprising a sheet of soft, unsized, porous fabric having a relatively high wicking property and wrapped about said body to constitute said first surface, said lateral surfaces and said opposite surface, and cover means overlying the ends of said body to constitute said end surfaces, said cover means being formed of tightly-woven fabric, relatively impermeable to oil and having a relatively low wicking property and being physically secured to said sheet to complete a closed encasement for said body, said body being formed with a plurality of spaced, substanitally parallel slits opening through that surface of said body corresponding to said pad first surface and elongated in directions substantially parallel with said pad end surfaces.

5. A lubricator pad having a first surface adapted to be held with said first surface in contact with a rotatable element to be lubricated, said pad having lateral surfaces bounding said first surface and substantially parallel with the axis of rotation of such an element when said pad is so held, end surfaces bounding said first surface and substantially perpendicular to said axis when

said pad is so held, and an opposite surface substantially parallel with said first surface, said pad comprising a body of stable foam material and an encasement for said body, said encasement comprising a sheet of soft, unsized, porous fabric having a relatively high wicking property and wrapped about said body to constitute said first surface, said lateral surfaces and said opposite surface, and cover means overlying the ends of said body to constitute said end surfaces, said cover means being formed of tightly-woven fabric, relatively impermeable to oil and having a relatively low wicking property and being physically secured to said sheet to complete a closed encasement for said body, said body being formed with a plurality of spaced, substantially parallel slits opening through that surface of said body corresponding to said pad first surface and through those surfaces of said body corresponding to said pad lateral surfaces.

6. The lubricator pad of claim 1 in which said body is formed with a plurality of spaced slits, elongated in directions substantially parallel with said end surfaces and opening through said top surface.

7. The lubricator pad of claim 1, in which said body is formed with a plurality of spaced slits, substantially parallel with said end surfaces and opening through said top surface, and through said lateral surfaces.

8. The lubricator pad of claim 1 in which said body is formed with a plurality of spaced slits, elongated in directions substantially parallel with said end surfaces and opening through said top surface, but terminating short of said lateral surfaces.

9. A lubricator pad for railroad car journals or the like, said pad comprising a body of stable foam material having a bottom surface adapted to be supported from a journal box, a top surface adapted to be presented toward a journal, lateral surfaces bounding said top and bottom surfaces, a rear end surface adapted to be presented toward the inner end of a journal box, and a front end surface adapted to be presented toward the open, front end of a journal box, and an encasement for said body comprising a sheet of soft, unsized, porous fabric having a relatively high wicking property overlying said top, bottom and lateral surfaces, a layer of tightly-woven fabric relatively impermeable to oil overlying said front end surface, and a plurality of layers of tightly-woven fabric relatively impermeable to oil overlying said rear end surface.

10. The lubricator pad of claim 9 including a patch of relatively hard, abrasion resistant material projecting from each lateral surface of said pad toward the median line of said bottom surface and secured to said bottom surface in overlying relation thereto.

11. The lubricator pad of claim 9 including a forwardly-opening pocket, closed at its rear end, secured to said pad near the rear end of each lateral surface thereof and formed by a strip of tightly-woven fabric having its upper end secured to said sheet near the top surface of said body and having its lower end extended across the bottom surface of said sheet toward the median line of said body and secured thereto in overlying relation to said sheet.

12. The lubricator pad of claim 9 including a forwardly-opening pocket, closed at its rear end, secured to said pad near the rear end of each lateral surface thereof and a strap secured to said pad near the forward end of each lateral surface thereof to define a tunnel registering with the open end of the corresponding pocket.

13. The lubricator pad of claim 9 including a forwardly-opening pocket, closed at its rear end, secured to said pad near the rear end of each lateral surface thereof and formed by a strip of tightly-woven fabric having its upper end secured to said sheet near the top surface of said body and having its lower end extended across the bottom surface of said sheet toward the median line of said body and secured thereto in overlying relation to said sheet, and a strap of tightly-woven fabric overlying said sheet at each lateral surface of said pad and having its upper end secured to said sheet near the top surface of said pad and having its lower end extended across the bottom surface of said sheet toward the melian line of said body and secured thereto, each such strip defining a tunnel registering with the open end of the corresponding pocket.

References Cited in the file of this patent

UNITED STATES PATENTS

1,831,812	Leach	Nov. 17, 1931
2,074,693	Hooper	Mar. 23, 1937
2,150,935	Miller	Mar. 21, 1939
2,264,250	Shoemaker	Nov. 25, 1941
2,279,354	Waters	Apr. 14, 1942
2,480,790	Truhlar	Aug. 30, 1949
2,586,477	Niles	Feb. 19, 1952
2,657,958	Tagliaferri et al.	Nov. 3, 1953
2,713,524	Hagy	July 19, 1955
2,807,803	Rockwell	Sept. 24, 1957
2,825,609	Jeffers et al.	Mar. 4, 1958
2,856,248	Hoyer et al.	Oct. 14, 1958

OTHER REFERENCES

"Foamed Polyurethanes," published in British Plastics January 1956, pages 5 thru 9 and 39 relied thereupon.