April 26, 1966 A. R. BUCK 3,247,955

INTERLOCKING PACKAGE FOR BEARING ASSEMBLIES

Filed June 5, 1964 2 Sheets-Sheet 1

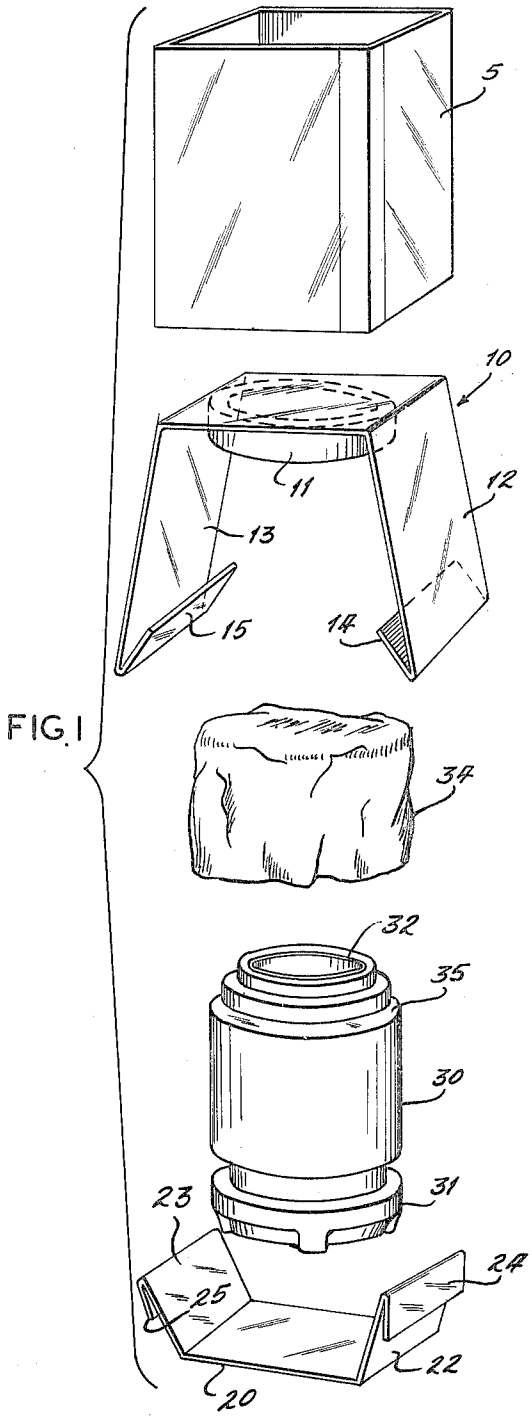


FIG. 1

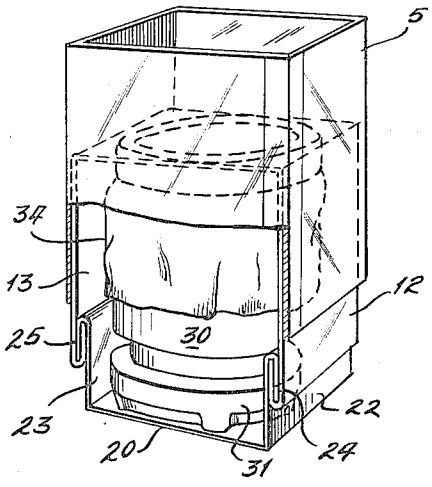


FIG. 2

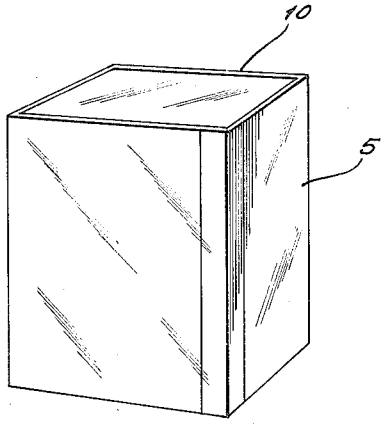


FIG. 3

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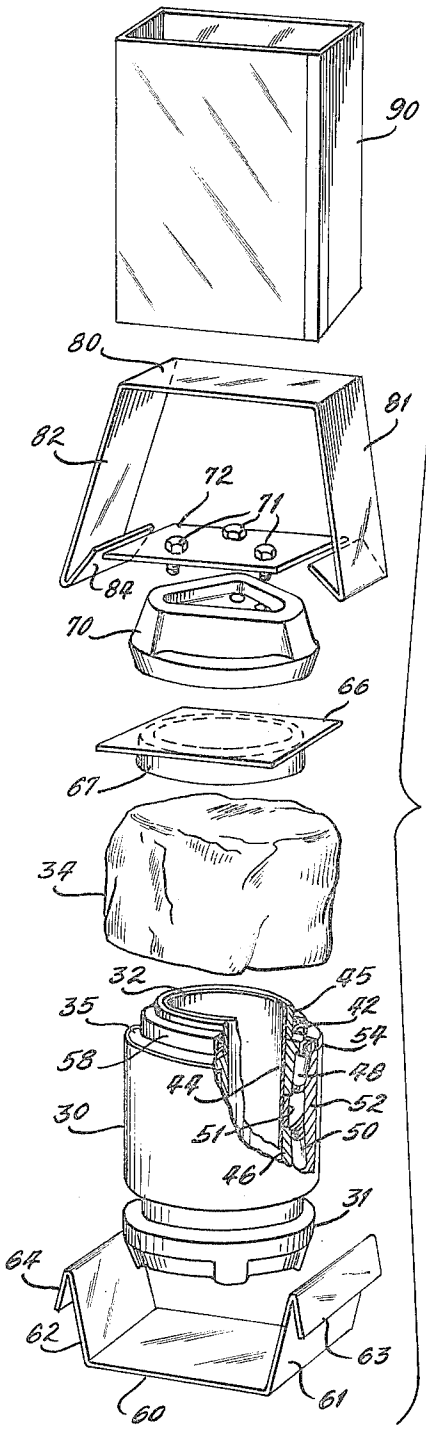


FIG. 4

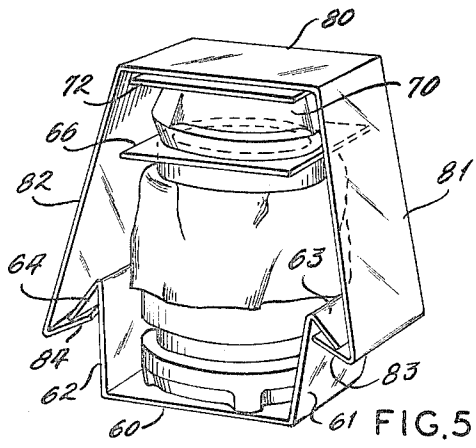


FIG. 5

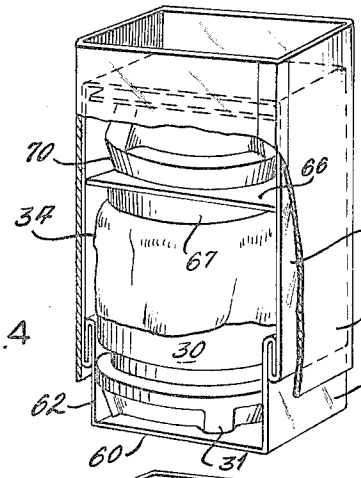


FIG. 6

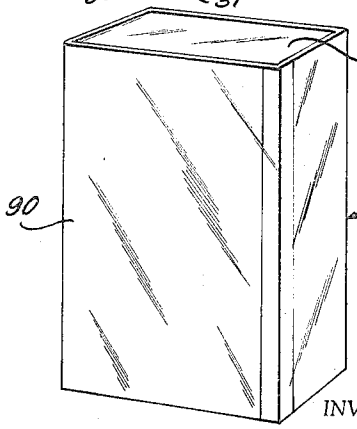


FIG. 7

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INTERLOCKING PACKAGE FOR BEARING ASSEMBLIES

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2 Claims. (Cl. 206—46)

The present invention relates to means for packaging a preconditioned article or the like, and more particularly to packaging preassembled, preadjusted and prelubricated bearing assemblies on a temporary journal in a shipping carton.

In the past, bearing assemblies have been shipped from manufacturer to user by shipping several components separately. Later completed assemblies were packaged and shipped to users such as railroad car builders in a complete preassembled, preadjusted and prelubricated condition.

In particular, the present invention improves on the packaging techniques for preassembled, preadjustable and prelubricated bearing assemblies, and specifically is an improvement over U.S. Patent No. 2,950,002 granted to C. L. Eastburg assignor to The Timken Roller Bearing Company for packaged bearing assemblies. Throughout the specification herein when speaking of specific bearing assemblies and methods of packaging preassembled, preadjusted and prelubricated bearing assemblies on temporary journals, it will be understood that such bearing assemblies are the same as disclosed in the referenced patent.

Briefly, the invention herein is concerned with the shipping carton for packaging a bearing assembly such as heretofore suggested, in a preassembled, preadjusted and prelubricated condition on a temporary journal in a quickly assembled carton. The carton includes a bottom assembly which interlocks with a top assembly with a bearing assembly on the temporary journal encased therein with a sleeve surrounding the interlocked top and bottom assemblies to retain the interlocked state and complete the package or shipping carton.

It is therefore a principal object of the invention to reduce the packaging and installation costs of bearing assemblies and to simplify the handling thereof by placing all parts required for each assembly in one container.

Another object of the invention is to provide a preassembled, preadjusted and prelubricated bearing assembly packaged at the manufacturer ready to be installed on an axle of a railroad car.

Another object of the invention is to provide a method of packaging completely assembled bearings in a carton in which the ends of the carton form side panels that interlock along edge flaps and are held against a bearing assembly by surrounding such panels with a sleeve.

Yet another object of the invention is to provide a method of packaging a bearing assembly by placing the bearing assembly on an end panel which has integral side panels reverse folded at their outer ends to form interlock flaps, covering the assembly with a vapor controlled inhibitor paper, positioning an end panel assembly including a stabilizing element which has integral side panels reverse folded at their free ends to form interlock flaps over the bearing assembly, positioning the end panel to interlock with the end panel assembly at the interlock flaps of side panels, and then positioning a sleeve to retain the side panels in an interlocked fashion.

Still a further object of the invention is to provide a packaging assembly for preconditioned articles comprising complementary end panels having integral side panels foldable against the article and interlocked together along complementary edge flaps with a sleeve surrounding the complementary end panels thereby retaining the complementary edge flaps interlocked and completing the package.

Other objects and advantages of the invention will become readily apparent from the following detailed description and the claims in conjunction with the drawings wherein:

FIG. 1 is an exploded, perspective view of the packaging carton and bearing assembly;

FIG. 2 illustrates, in perspective, the bearing assembly packaged with the sleeve partially encasing the interlocked top and bottom assemblies;

FIG. 3 is a perspective of the completely packaged bearing ready for shipment;

FIG. 4 is an exploded, perspective view, partly cut away, to expose the internal parts of the bearing assembly;

FIG. 5 illustrates in perspective the bearing and end cap therefor assembled and about to be interlocked within the carton assembly;

FIG. 6 illustrates in partially cut away perspective the sleeve being disposed around the packaged bearing and end cap; and

FIG. 7 is a perspective view illustrating the completely packaged bearing and end cap ready for shipment.

Referring to FIGS. 1, 2 and 3, the interlocked package assembly will be described in detail with reference to numerals. Complementary top end panel assembly **10** has a ring at the top thereof **11** and includes side panels **12** and **13** which have reverse folded side flaps **14** and **15**. The complementary bottom end panel **20** has side panels **22** and **23** which have reverse folded edge or wall flaps **24** and **25**. A roller bearing **30** having a backing ring **31** is positioned on bottom assembly **20**. Roller bearing **30** is provided on a temporary journal **32** which retains the internal components of bearing **30** and backing ring **31** in a preassembled, prelubricated and preadjusted condition. A vapor controlled inhibiting paper **34** is positioned about end cap seat **35** and then ring **11** is nested down on end cap seat **35** to hold paper **34** in position. At the same time that ring **11** is nested on end cap seat **35**, edge flaps **14** and **15** of end panel assembly **10** are interlocked, respectively, with edge flaps **24** and **25** of the end panel **20**. Sleeve **5** is then slipped over the assembly **10** and down around side panels **12** and **13** and then over side panels **22** and **23** to retain the completed packaged assembly generally designated **1** as illustrated in FIG. 3.

Although there may be occasions and times when only the main roller bearing and backing ring requires shipment to a user for replacement or otherwise, it may frequently be necessary to provide a complete bearing assembly including the end cap assembly. With reference now to FIGS. 4, 5, 6 and 7, a bearing assembly similar to the packaged assembly depicted in FIGS. 1–3 will be described which includes the end cap necessary to be shipped under such circumstances as requires a complete railroad car bearing assembly.

FIG. 4 illustrates bearing **30** broken away to expose the internal portion of the roller bearing assembly. In the assembly the temporary journal **32** may be seen supporting inner races **44** and **46**. The bearing has roller members **48** and **50**, spacer member **51** and an outer race member **52**. The end of outer race member **52** is provided with an annular groove **54**, the cup undercut, which sealably receives an annular member **58**, the seal and seal case. The annular member **58** provides a chamber for annular seal **42**. This, of course, provides outer race **52** sealably yet rotatably engaging annular member **45**, the seal wear ring, which is mounted on the temporary journal **32**.

The bearing 30 with its backing ring 31 mounted to temporary journal 32 is positioned on the bottom end panel 60 which has side panels 61 and 62 defining edge flaps 63 and 64. A stabilizer panel is provided comprising spacer member 66 with stabilizer or element 67 attached thereto. An end cap 70 suitable for attachment to bearing 30 about end cap seat 35 is provided. End cap 70 is mounted to spacer 72 by bolts 71. The end cap is later assembled to the permanent journal for bearing 30 by bolts 71. A top end panel assembly 80 is provided which has side panels 81 and 82 that in turn have edge flaps 83 and 84. A sleeve 90 is also provided to surround the packages in a manner to be described. The vapor controlled inhibiting paper 34 is used to cover bearing 30.

After bearing 30 has been preconditioned, preadjusted and prelubricated, and temporary journal 32 has been installed, the bearing 30 is positioned with backing ring 31 on bottom end panel assembly. The V.C.I. (vapor controlled inhibitor) paper 34 is positioned over the end cap seat 35 of the bearing 30 and spacer 66 is positioned for element 67 to seat in end cap seat 35 with V.C.I. paper 34 interposed, thus providing vapor control to the internal portion of the temporary journal 32 and bearing 30. Next, end cap 70 is attached to spacer 72 by bolts 71 and is positioned seated on spacer 66. Another spacer not shown, that may or may not be contoured to fit around the heads of bolts 71, may be seated on top of bolts 71 and then top end panel 80 is positioned over the spacer (not shown) or directly on bolts 71 projecting from spacer 72. The side panels 81 and 82 are folded downwardly to meet upwardly folded side panels 61 and 62 of bottom end panel 60. To provide interlocking between top end panel 80 and bottom panel 60, edge flaps 83 and 84 are interlocked with edge flaps 63 and 64, respectively. Sleeve 90 is then slipped over end top end panel 80 to surround first side panels 81 and 82 and then also side panels 61 and 62. The sequence of interlocking edge flaps 83 and 84 to 63 and 64, respectively, is illustrated best in FIG. 5, and the encasement of end assemblies 80 and 60 by sleeve 90 is best illustrated in FIG. 6. The completed package assembly generally designated 100 is illustrated in FIG. 7.

It will be appreciated that although the package assembly appertaining to the invention is concerned mainly with bearing assemblies, such as that illustrated in the U.S. Patent No. 2,950,002 to Eastburg (referenced heretofore) which discloses the elements of a bearing, the transfer of such bearing from a temporary journal to a permanent journal and the various methods and techniques utilized

in providing a railway car with an axle bearing, it is not limited to bearing assemblies.

The present invention has been described and disclosed with reference to several embodiments which advantageously employ the packaging carton assembly of the invention, and such will suggest usefulness of the invention in a package for other preconditioned articles requiring careful handling and packaging to retain their ready to use condition throughout shipment; thus such embodiments are within the scope of the invention herein limited solely as necessitated by the scope of the appended claims.

What is claimed is:

1. In a shipping package for a preassembled multiple part article to be transported in preassembled condition, the improvement which comprises: first wrapper means having a panel engaging the article, at least two side walls on opposite sides of said panel and folded to lie along the article, flaps on said side walls folded outwardly relative to the article; second wrapper means having a panel engaging the article at a location substantially opposite said first mentioned panel, at least two side walls on opposite sides of said second mentioned panel folded to lie adjacent said first mentioned side walls, flaps on said second mentioned side walls folded inwardly relative to the article and interengaged with said first mentioned flaps; and locking sleeve means slidably embracing said first and second wrapper means and retaining said engaged flaps against separation, said sleeve means and panels on said first and second wrapper means substantially fully enclosing the article.

2. The package set forth in claim 1 wherein said sleeve means is open at opposite ends and said panels on said first and second wrapper means forming closures for the opposite open ends of said sleeve means to complete the packaging of the article.

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