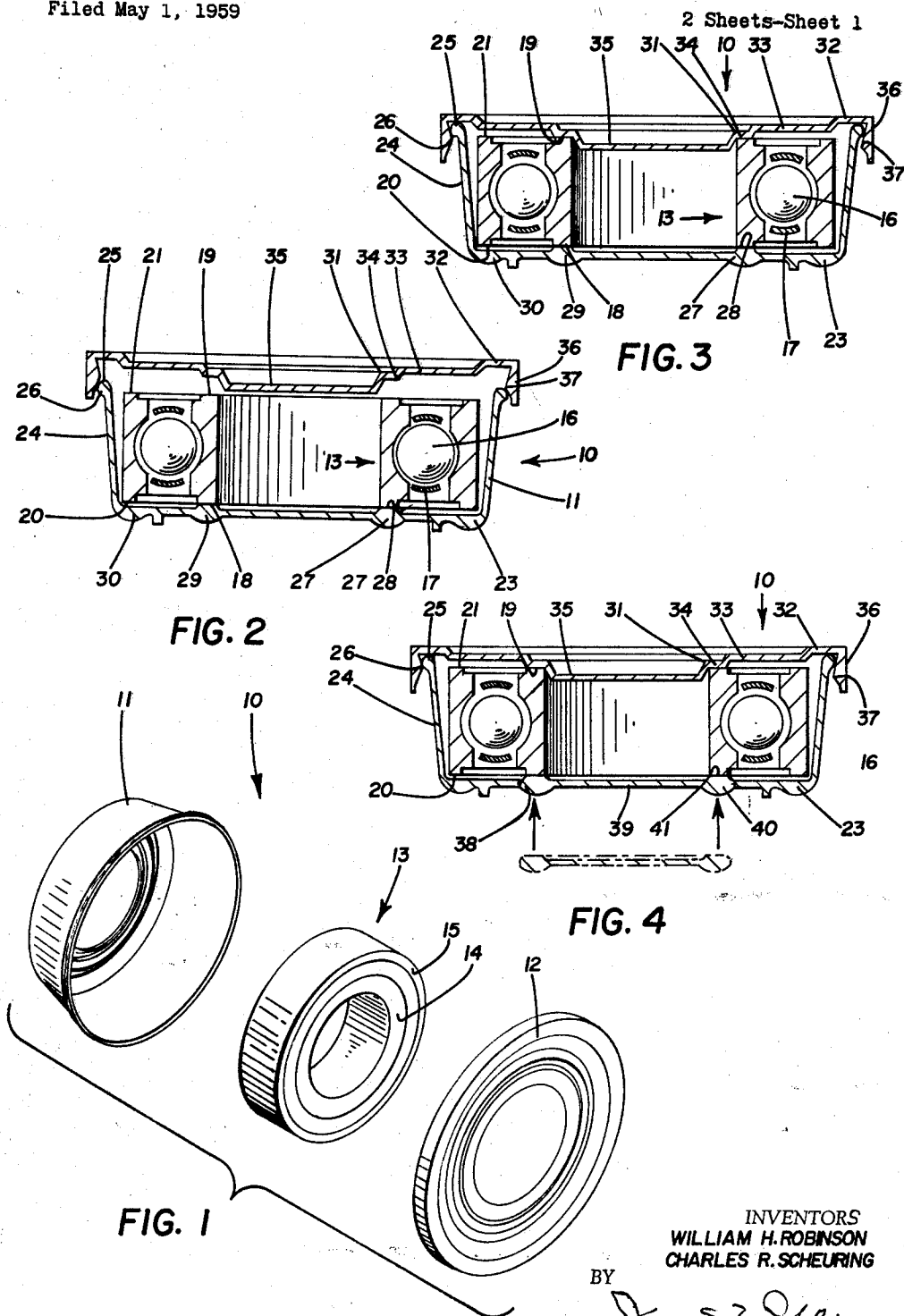


March 12, 1963

W. H. ROBINSON ET AL
CONTAINER

3,080,964

Filed May 1, 1959



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2 Sheets-Sheet 2

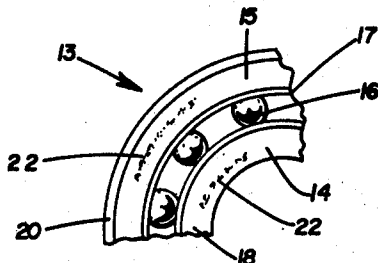


FIG. 5

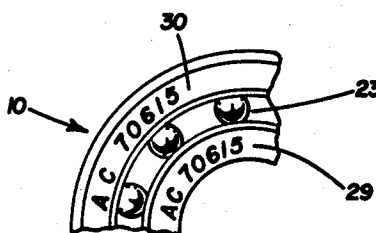


FIG. 6

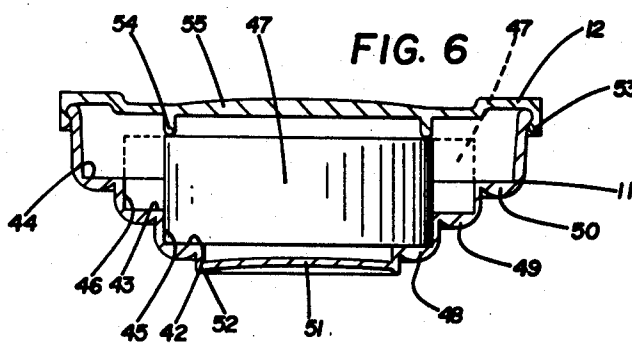


FIG. 7

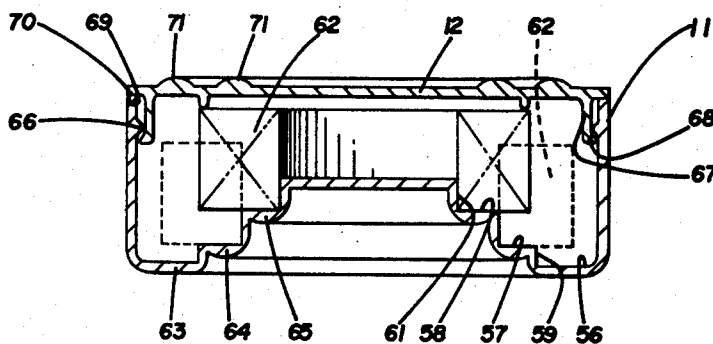


FIG. 8

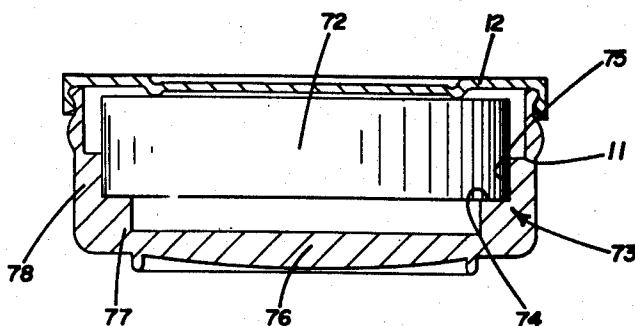


FIG. 9

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3,080,964

CONTAINER

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8 Claims. (Cl. 206—46)

This invention relates to an improved container, and, in particular, relates to a container having means for readily identifying the article contained therein.

It is well known in the packaging art that when relatively small products or articles are packed in individual containers, the containers must satisfy the particular packaging requirements of the packaged product or article. In particular, certain articles must be resiliently mounted within their package or container in order to prevent damage thereof from shocks, denting or the like. Further, certain articles, such as machined parts, must be maintained in a relatively dust-free and/or moisture-free condition in order to prevent abrasion, rusting, and the like.

It is also well-known in the packaging art that when a product or article is individually packaged in a container or the like, some suitable means must be provided for readily identifying the particular article disposed therein without necessitating the removal of the article from the package. Such identifying means are generally provided by labels or other suitable markings on the package. However, when the original article has been removed from the container, the container is not readily reusable for storing a similar, but different article without subsequently changing the particular identification markings on the package to properly identify the new article contained therein.

Therefore, packaging manufacturers have been striving to produce a container or the like which can be readily utilized to identify the article contained therein regardless of the particular article utilized, the container being relatively inexpensive and satisfying the particular packaging requirements desired.

One of the features of this invention is to provide a container which is adapted to readily identify the particular article contained therein regardless of the particular type of article utilized. In particular, it has been desirable to provide a container for certain articles, for example, bearings, precision electro-mechanical parts and assemblies, precision instruments, and the like which will maintain such articles in a dust-free and/or moisture-free condition while having means for readily identifying the particular type of article contained therein, without necessitating a change in the identifying means of the container.

Generally such articles as ball bearings are marked with the particular type, size, and other nomenclature thereof on the opposed flat sides of the inner and/or outer races thereof. The ball bearings are each lubricated, individually wrapped in a special preservative coated paper, and placed in an individual chipboard box which is labeled on the outside with the size and type of the bearing enclosed. The individual packages are then placed in larger shipping cartons for delivery to the customers and jobbers.

In normal shop practice, the individual boxes are placed in storage racks for subsequent usage. However, because it is sometimes necessary to remove the bearing from an individual package for determining size and other purposes and then replace the same within the container, the markings on the label or container become effaced. Further, when the individual package is utilized for subsequently storing another type of bearing therein, the labels or other marking on the container must be changed to correspond with that particular bearing.

Therefore, one form of container formed in accordance

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with the teachings of this invention is adapted to receive any desired type of bearing and readily permits the user to identify the particular type of bearing therein without opening the container and without changing the identifying means. The particular identifying means utilized comprises an integral magnifying portion of the container disposed adjacent the identifying marks on at least one of the races of the bearing when received in the container whereby the magnifying portion magnifies the markings on the individual bearing so that the same are readily readable by merely looking at the exterior of the container.

Therefore, it is an object of this invention to provide an improved container having means for readily identifying an article contained therein.

Another object of this invention is to provide an improved container having means for hermetically sealing the same and having means for readily identifying an article contained therein.

A further object of this invention is to provide in combination with an article having identifying marks thereon a container for receiving the article and having means for magnifying the markings on the article so that the same are readily readable on the exterior of the container.

Other objects, uses and advantages of this invention will become apparent upon a reading of the following specification taken in conjunction with the accompanying drawing forming a part thereof and wherein:

FIGURE 1 is an exploded perspective view of a disassembled container formed in accordance with the teaching of this invention;

FIGURE 2 is an axial cross-sectional view of the container of FIGURE 1 and illustrates the method of assembling the closure member to the container body;

FIGURE 3 is a view similar to FIGURE 2 and illustrates the closure member in its closed position;

FIGURE 4 illustrates another embodiment of this invention;

FIGURE 5 is a fragmentary end view of a ball bearing illustrating the identifying marks on the inner and outer races thereof;

FIGURE 6 is a fragmentary bottom view of the container illustrated in FIGURES 1-3 illustrating the effect of the identifying means thereof;

FIGURE 7 is an axial cross-sectional view of another embodiment of this invention illustrating a container for receiving articles of different size;

FIGURE 8 is a view similar to FIGURE 7 illustrating still another embodiment of this invention; and

FIGURE 9 illustrates a further embodiment of this invention.

Reference is now made to the accompanying drawing wherein like reference numerals are used throughout the various figures thereof to designate like parts where appropriate, and particular reference is made to FIGURE 1 illustrating a disassembled container or the like, generally indicated by the reference numeral 10, comprising a cup-shaped member 11 and a closure member 12. The cup-shaped member 11 and closure member 12 may be made from rigid or non-rigid materials such as plastic and the like, and, in one form, the cup-shaped member 11 is made from a transparent, relatively hard plastic material such as polystyrene and the closure member 12 is made from a transparent, relatively soft plastic material such as polyethylene. However, it is to be understood that the cup-shaped member 11 and the closure member 12 may be made in any desired combination of materials depending upon the functional requirements of the particular packaging application.

As shown in FIGURES 1-3, the container 10 is adapted to receive an article such as a ball bearing, generally indicated by the reference numeral 13, comprising an inner annular race 14 and an outer annular race 15. A plurality

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of rotatable elements 16 are disposed between the inner and outer races 14 and 15 and are maintained in a spaced relation relative to each other by a cage 17 in a manner well known in the bearing art. The inner race 14 has a pair of opposed flat surfaces 18 and 19. Similarly, the outer race 15 is provided with a pair of opposed flat surfaces 20 and 21.

As shown in FIGURE 5, the sides 18 and 20 of the respective races 14 and 15 of the bearing 13 are suitably marked with identifying numbers or other information as indicated at 22, the markings 22 generally being formed by impressions in the side faces of the races by the bearing manufacturer. However, these markings are relatively small and require close observation to obtain a correct reading thereof.

The cup-shaped member 11 of the container 10 includes a bottom portion 23 and an integral, vertically extending annular conical portion 24 terminating in an open end 25 thereof. An annular outwardly directed lip, shoulder, or bead 26 is formed at the open end 25 of the cup-shaped member 11 and projects from the exterior wall of the cup-shaped member 11. An upwardly extending annular projection 27 is formed on the interior surface of the bottom 23 and is provided with a flat annular surface 28 adapted to support the flat surface 18 of the inner race 14 of the bearing 13 when the bearing 13 is received within the container 10. In this manner, when the bearing 13 is disposed within the container 10, only the flat surface 18 thereof engages the flat annular surface 28 of the bottom 23 of the cup-shaped member 11.

It is to be understood, however, that the container 10 could be constructed to support the bearing 13 only on the outer race 15, on both races 14 and 15, or radially as desired or required.

The bottom 23 of the cup-shaped member 11 is also provided with a pair of concentrically disposed magnifying rings 29 and 30 adapted to be respectively disposed adjacent the flat surfaces 20 and 18 of the bearing 13 when the bearing 13 is received therein. As shown in FIGURE 6, the magnifying rings 29 and 30 are adapted to respectively magnify the markings 22 on the inner race 14 and outer race 15 of the bearing 13 to a size which is readily readable whereby it is unnecessary to remove the bearing 13 from the container 10 regardless of whether the bearing 13 was the original bearing placed therein or another type of bearing than the original bearing shipped with the container 10.

The closure member 12 is provided with a stepped central portion 31 comprising a plurality of concentric flat annular portions 32, 33, and 34, and a flat central circular portion 35, the central portion 31 projecting into the cup-shaped member 11 when assembled thereto. A depending skirt 36, formed integrally with the closure member 12, extends vertically downwardly from the outer periphery thereof and is provided with an inwardly directed annular bead 37.

Since the diameter defining the bead 37 of the closure member 12 is slightly smaller than the diameter defining the outside perimeter of the lip 25 of the cup-shaped member 23, the closure member 12 is adapted to be snapped on the open end 25 of the cup-shaped member 11 whereby the bead 37 of the skirt 36 sealably engages the under portion of the lip 26 and draws the annular portion 32 of the closure member 12 into sealing engagement with the upper portion of the lip 26 of the cup-shaped member 11. In this manner, the closure member 12 hermetically seals the open end 25 of the cup-shaped member 11 at both the upper and lower portions of the lip 26 thereof. Therefore, the interior of the container 10 is maintained completely dust-free and/or moisture-free when the closure member 12 is assembled thereto.

If desired, the closure member 12 may be formed in substantially the same manner as set forth in the United States Patent to Robinson, No. 2,614,727, issued October 21, 1952.

As shown in FIGURE 3, when the closure member 12

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is sealably secured to the cup-shaped member 11, in the manner previously described, the annular portion 34 thereof engages the flat annular surface 19 of the inner race 14 of the bearing 13 and the central portion 35 thereof projects into the central portion of the bearing 13. Since the closure member 12 is flexible, the same is designed to engage the bearing 13 before the skirt 36 is fully telescoped to its sealing position on the cup-shaped member 11 whereby the closure member 12 is flexed outwardly by the bearing 13 when the closure member 12 is secured to the container 10. The flexed closure member 12 tends to force the bearing 13 against the flat annular surface 28 of the cup-shaped member 11 to thereby maintain the same in a predetermined position within the container 10 and provides suitable shock absorbing means to dampen vibration and movement of the bearing 13 relative to the container 10.

Since the circular central portion 35 of the closure member 12 extends into the bearing 13, the bearing 13 is maintained in a predetermined axial position within the container 10 whereby the outer race 15 of the bearing 13 is maintained spaced from the annular wall 24 of the container 10. In this manner, any radial impacts imparted to the container 10 are borne solely by the annular wall 24 thereof whereby the bearing 13 is protected from such impacts.

While only the closure member 12 has been discussed as being stressed and flexed to force the bearing against the bottom 23, it is to be understood that it is contemplated that the cup-shaped member 11 and/or closure member 12 may be flexed and stressed to resiliently support the bearing 13 therebetween.

If desired, the cup-shaped member 11 may be formed in the manner illustrated in FIGURE 4. In particular, the bottom 23 of the cup-shaped member 11 may be provided with a circular central aperture 38 adapted to telescopically receive a circular section 39, the circular section 39 including a magnifying ring 40 formed at the outer periphery of the circular section 39 and having an upwardly extending flat surface 41 which spaces the bearing 13 from the bottom 23 of the container 10 in the same manner as the flat surface 28 of the cup-shaped member 11 illustrated in the FIGURES 1-3. The circular section 39 is secured to the bottom 23 of the cup-shaped member 11 in any feasible manner as for example by shoulder, cementing or the like after the same has been fully telescoped within the aperture 38 in the position illustrated in full lines in FIGURE 4.

If desired, to further hermetically seal the closure member 12 to the cup-shaped member 11 a sealing compound or the like may be inserted between the skirt 36 and the cup-shaped member 11 whereby it is necessary to break the sealing compound when initially opening the container 10.

Also the closure member 12 may be permanently sealed to the cup-shaped member 11 by cementing, welding, shrink fitting or the like whereby it is necessary to effectively mutilate the cup-shaped member 11 and/or the closure member 12 when removing the article therefrom in order to insure tamper-proof packaging.

As shown in FIGURES 7 and 8 the container 10 may be constructed in a manner to receive articles of different size. In particular, reference is made to FIGURE 7 illustrating a container 10 having a cup-shaped member 11 and a closure member 12 sealably secured thereto. The cup-shaped member 11 is stepped outwardly and downwardly and includes a plurality of stepped annular flat surfaces 42, 43, and 44 respectively joined together by annular walls 45 and 46. In this manner an article such as a bearing, watch movement assembly, precision part or instrument and the like and generally indicated by the reference numeral 47, is adapted to be seated against one of the flat surfaces 42-44 and be radially supported by the respective annular wall 45 or 46 depending upon the particular size of the article.

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The cup-shaped member 11 may also be provided with a plurality of annular magnifying portions 48, 49, and 59 respectively disposed adjacent the flat surfaces 42—44 thereof. Also, the central bottom portion 51 of the cup-shaped member 11 is shaped to project upwardly whereby an annular ring or lip 52 at the outer periphery of the central portion 50 may be utilized for supporting the container 10 upright on a flat surface.

The closure member 12 is secured to the cup-shaped member 11 by the annular bead 53 in the manner previously described for the container 10 illustrated in FIGURES 1-3. If desired, the closure member 12 may be provided with an annular projection or lip 54 adapted to engage the article 47 whereby the article 47 is resiliently supported between the members 11 and 12 by the flexed or stressed portions of one or both members 11 and 12 in the manner previously described. Further, the closure member 12 may be provided with a magnifying portion 55 to provide means for magnifying the article 47 in the container 10 for identifying purposes, inspection purposes and the like.

As shown in FIGURE 8, the cup-shaped member 11 is stepped outwardly and upwardly and includes a plurality of flat annular surfaces 56, 57, and 58 joined together by respective annular walls 59, 60 and 61. In this manner an article, such as a bearing and the like and generally indicated by the reference numeral 62, is adapted to be seated against one of the flat surfaces 56—58 and be radially supported against the respective annular wall 59—61 depending upon the particular size of the article 62.

The cup-shaped member 11 includes a plurality of magnifying portions 63, 64 and 65 disposed respectively adjacent the flat surfaces 56—58 whereby at least a portion of the article 62 is magnified when looking at the exterior of the container 10.

If desired, the cup-shaped member 11 may be constructed in a manner to telescopically receive a portion of the closure member 12. In particular, an outwardly extending annular bead, shoulder, or lip 66 projects from the interior surface of the cup-shaped member 11. A dependent skirt 67 formed on the closure member 12 and having an outwardly directed annular bead 68 projecting from the exterior surface of the skirt 67 is adapted to sealably engage the lower portion of the bead 66 whereby the interior flat surface 69 of the closure member 12 is drawn into sealing engagement with the open end 70 of the cup-shaped member 11 to substantially hermetically seal the container 10. Therefore, it can be seen the closure member 12 may be constructed to either encompass the cup-shaped member 11, as in FIGURES 1-7, or be telescopically received in the cup-shaped member 11, as in FIGURE 8.

A plurality of annular magnifying portions 71 may be formed integrally with the closure member 12 or formed separately and secured thereto in any feasible manner whereby at least a portion of the article 62 may be magnified and readily seen when looking at the top of the container 10.

As shown in FIGURE 9, another container 10 comprising a cup-shaped member 11 and closure member 12 is adapted to receive an article, generally indicated by the reference numeral 72 and comprising watch movements, bearing or the like. The cup-shaped member 11 is formed with a shoulder 73 comprising an annular flat surface 74 and an annular wall 75 adapted to support the article 72 and prevent axial or radial movement thereof. A circular magnifying portion 76 is formed integrally with the bottom 77 of the cup-shaped member 11 or formed separately and secured thereto whereby the bottom of the article 72 is magnified and readily seen when looking at the bottom of the container 10. Further, if desired, the upstanding portion 78 of the cup-shaped member 11 may be provided with an annular magnifying portion 79.

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To further protect the article in the container 10 the members 11 and 12 can be constructed to absorb shocks by the particular materials used or by the particular shape of the member, for example serrating the members and the like.

Although the various embodiments of this invention have illustrated the cup-shaped member 11 having a circular bottom portion 23 and a conical shaped, upstanding annular portion 24, it is to be understood that the term cup-shaped as used herein is intended to define other suitable geometric structures such as a polygon, circular, elliptical or other symmetrical and non-symmetrical shaped bottom portion and a vertically extending wall being defined by a curved, flat or annular side section or sections and the like. Further, the cup-shaped member 11 may be made from a plurality of parts suitably secured together to form the cup-shaped structure, such as by making the bottom separately and suitably securing the same to a side structure to provide the closed end thereof.

It is to be further understood that although the container 10 has been described as being particularly adapted to package a ball bearing, or watch movement assembly, other suitable articles may be utilized in combination therewith as one of the features deemed essential to this invention is to provide a container having means for readily identifying an article disposed therein.

While the foregoing presents preferred embodiments of the present invention, it is obvious that other modifications and/or equivalents may be employed without departing from the scope of the invention, which is defined in the appended claims.

What is claimed is:

1. In combination with a bearing having inner and outer annular races and having identifying marks on at least one of said races, a container receiving said bearing and comprising a cup-shaped member having an open end, and a closure member detachably secured to said cup-shaped member to close said open end, at least one of said members magnifying said identifying marks of said bearing in order to readily identify said bearing.

2. A combination as set forth in claim 1 wherein said cup-shaped member includes a bottom and a magnifying portion comprising an annular section of said bottom, said annular section being disposed adjacent said one race of said bearing whereby said annular section magnifies said identifying marks regardless of the rotational position of said bearing relative to said container.

3. A combination as set forth in claim 1 wherein said cup-shaped member includes a bottom and a magnifying portion comprising a pair of annular sections of said bottom, said annular sections respectively being disposed adjacent said races of said bearing whereby said annular sections magnify said identifying marks regardless of the rotational position of said bearing relative to said container.

4. A combination as set forth in claim 1 wherein said cup-shaped member includes a bottom and an outwardly extending lip at said open end, and said closure member includes a dependent skirt sealably engaging said lip and a central portion engaging said bearing and forcing the same against said bottom whereby said bearing is maintained in a predetermined axial position in said container.

5. A combination as set forth in claim 4 wherein said central portion of said closure member extends inwardly and projects into said cup-shaped member.

6. A reusable container for an annular article having inner and outer substantially cylindrical coaxial surfaces comprising: a cup-shaped member having a fixed horizontally disposed bottom wall and a removable horizontally disposed top closure wall, one of said walls having substantially perpendicularly extending coaxially arranged cylindrical wall portions for snugly engaging one of said

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substantially cylindrical surfaces of said annular article for concentrically positioning said article relative to said wall portions, one of said walls being formed of translucent material and having an integral annular transparent magnifying portion coaxially disposed relative to said cylindrical wall portions, whereby identifying marks on a horizontally disposed surface of said annular article at a predetermined distance from the center thereof can be easily read through said magnifying portion regardless of the angular position of said article in said container.

7. A container according to claim 6, one of said walls being internally concentrically stepped to provide said wall portions for accurate concentric positioning of said article in said container relative to said magnifying portion.

8. A container according to claim 6, said magnifying portion being on said bottom wall and said bottom wall having downwardly extending spacing portions to pre-

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vent impairment of said magnifying portion by contact thereof with a supporting surface.

References Cited in the file of this patent

UNITED STATES PATENTS

5	893,469	Essmuller	July 14, 1908
	1,498,245	LeMay	June 17, 1924
	1,726,314	Rose	Aug. 27, 1929
	2,295,771	Batesole	Sept. 15, 1942
10	2,413,252	Smith	Dec. 24, 1946
	2,614,727	Robinson	Oct. 21, 1952
	2,766,796	Tupper	Oct. 16, 1956
	2,866,338	Muncheryan	Dec. 30, 1958
15	2,961,108	Johnson	Nov. 22, 1960

FOREIGN PATENTS

687,832	Great Britain	Feb. 18, 1953
J9133	Germany	Nov. 17, 1955