

May 17, 1966

R. W. SANKEY

3,251,504

COLLAPSIBLE CARRIER FOR GLASS TUMBLERS OR THE LIKE

Filed March 26, 1964

3 Sheets-Sheet 1

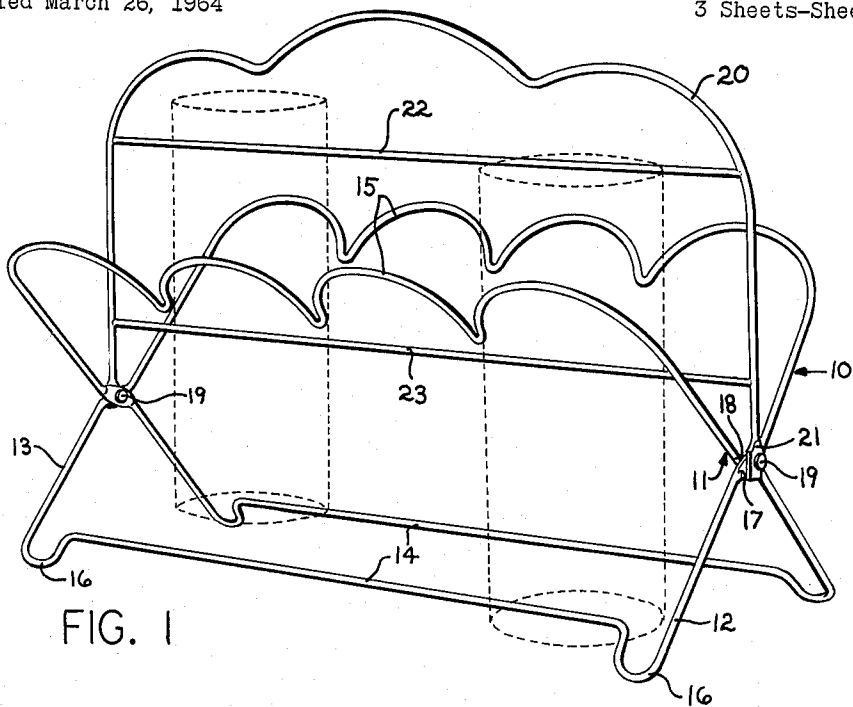


FIG. 1

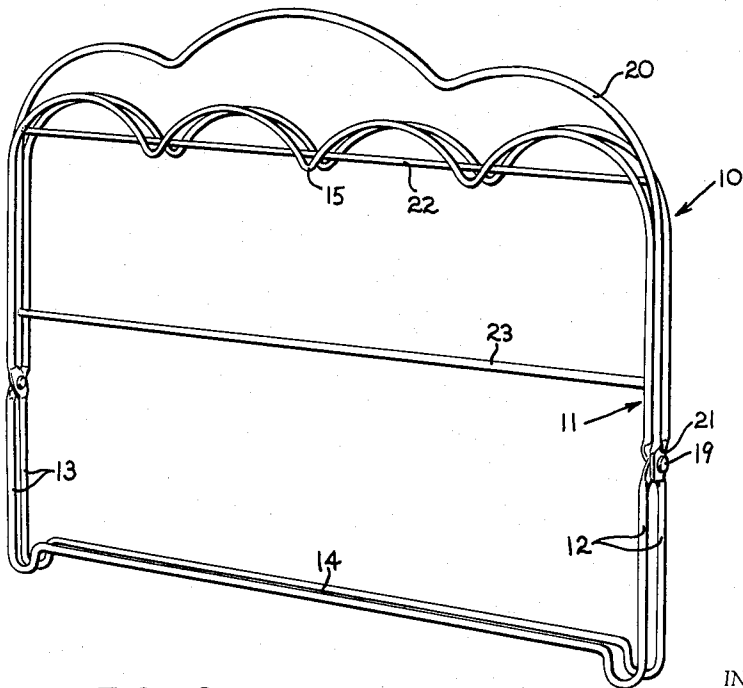


FIG. 2

INVENTOR.
RICHARD W. SANKEY

BY *J. T. Smis &*
W. A. Schaich
ATTORNEYS

May 17, 1966

R. W. SANKEY

3,251,504

COLLAPSIBLE CARRIER FOR GLASS TUMBLERS OR THE LIKE

Filed March 26, 1964

3 Sheets-Sheet 2

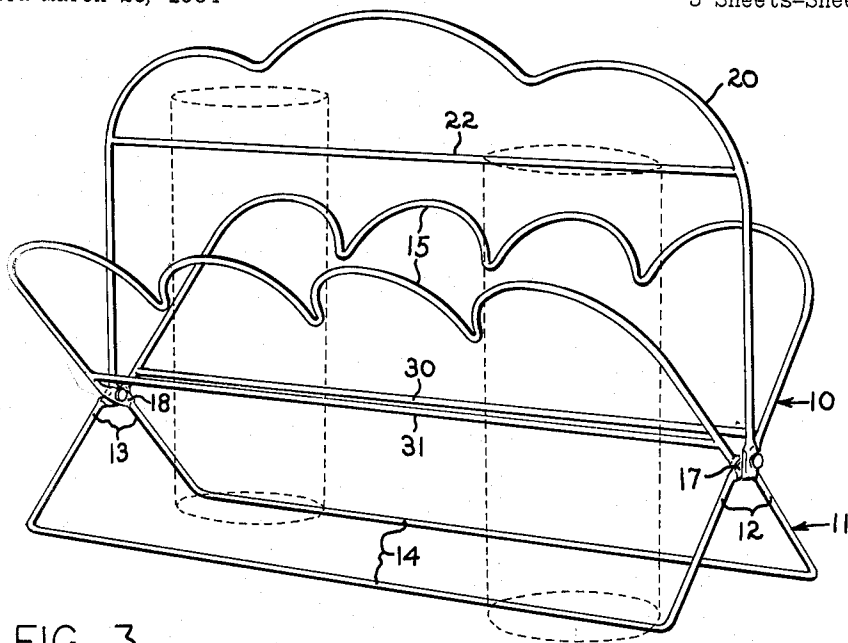


FIG. 3

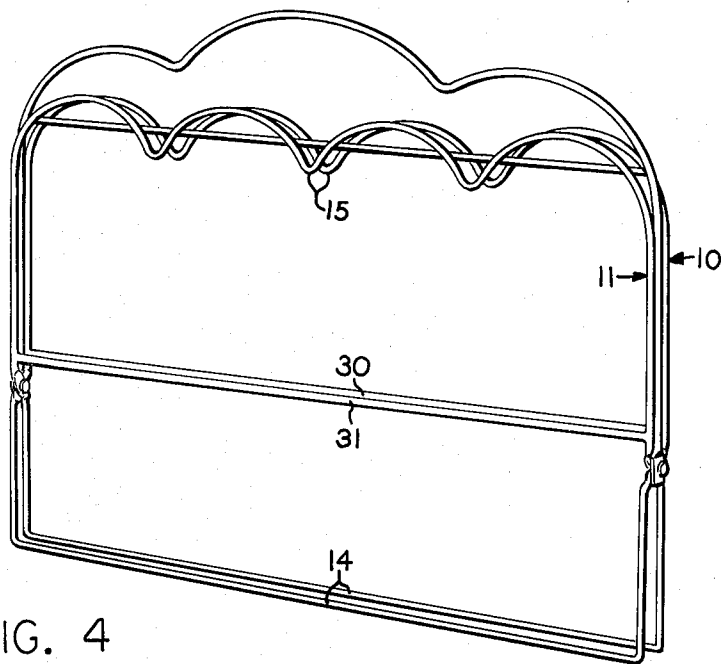


FIG. 4

INVENTOR.
RICHARD W SANKEY

BY *D. G. Lewis &*
W. A. Schaefer
ATTORNEYS

May 17, 1966

R. W. SANKEY

3,251,504

COLLAPSIBLE CARRIER FOR GLASS TUMBLERS OR THE LIKE

Filed March 26, 1964

3 Sheets-Sheet 3

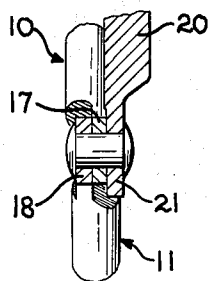


FIG. 6

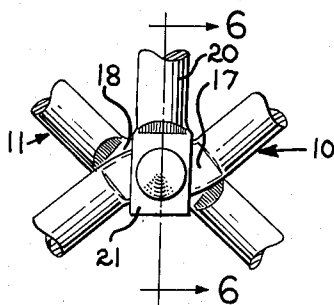


FIG. 5

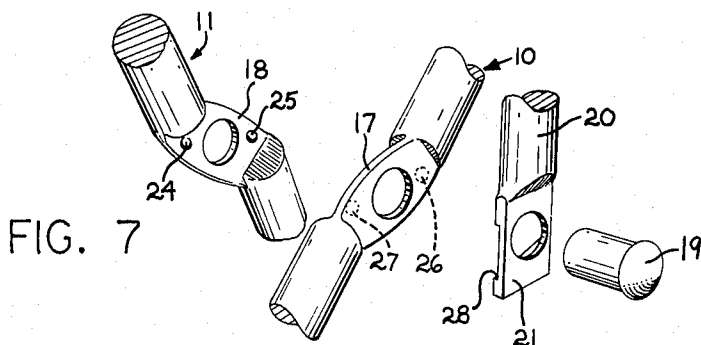


FIG. 7

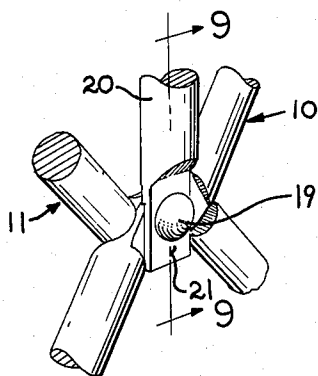


FIG. 8

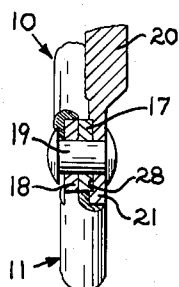


FIG. 9

INVENTOR.
RICHARD W SANKEY

BY *D. T. Jamies &*
W. A. Schaich
ATTORNEYS

1

3,251,504

COLLAPSIBLE CARRIER FOR GLASS
TUMBLERS OR THE LIKE

Richard W. Sankey, Canton, Ohio, assignor to Owens-
Illinois Glass Company, a corporation of Ohio
Filed Mar. 26, 1964, Ser. No. 354,925
5 Claims. (Cl. 220-102)

This invention relates to a carrier for glass tumblers or the like which is adapted to accommodate tumblers for supporting and carrying a plurality thereof.

More particularly, this invention relates to a collapsible carrier of the type used for carrying tumblers or the like which are filled, and is designed so that the tumblers may be easily removed. This invention also relates to a carrier which may serve as a rack capable of supporting a plurality of tumblers, which carrier, for storage purposes, may be collapsed into a substantially flat member.

In the past it has been the practice to form tumbler carriers out of wire members assembled in particular relationship so that a plurality of generally cylindrical articles, such as bottles or glass tumblers, may be placed in the carrier and a plurality of articles may be carried at one time. Many of these wire carriers in the prior art are of rigid construction and thus necessarily occupy a relatively large area when being stored. Furthermore, these rigid carriers require the use of relatively large shipping cartons.

In view of the foregoing, it is an object of this invention to provide a carrier which is simple in construction, formed of a minimum number of parts and which is collapsible so that in shipping and storage it will occupy a minimum area.

It is an additional object of this invention to provide a collapsible wire carrier which is easily opened into carrying position and presents a rack or carrier which is sufficiently sturdy and capable of being carried with one hand.

It is a further object of this invention to provide a carrier which is collapsible into a relatively flat member which, when opened, is capable of being carried by hand and also capable of being rested upon a flat surface without disturbing the articles which are placed therein.

It is a still further object of this invention to provide a tumbler carrier which is capable of being collapsed into a relatively flat member for shipping, but when opened has a handle portion that is retained in an upright position.

Other and further objects will be apparent from the following description taken in conjunction with the annexed sheets of drawings, wherein:

FIG. 1 is a perspective view of the wire rack of the invention in its expanded position;

FIG. 2 is a perspective view of the carrier or rack of FIG. 1 in its collapsed position;

FIG. 3 is a perspective view of a slightly modified rack of the invention in expanded position;

FIG. 4 is a perspective view of the carrier or rack of FIG. 3 in its collapsed position;

FIG. 5 is a side view of the hinge area of the rack of FIG. 3 on an enlarged scale;

FIG. 6 is a sectional view taken at line 6-6 of FIG. 5;

FIG. 7 is an exploded perspective view on an enlarged scale of the hinge area of the rack of FIG. 1, illustrating the handle retention feature of this form of the invention;

FIG. 8 is a perspective view of the parts of FIG. 7 in assembled and retaining position, and

FIG. 9 is a cross-sectional view taken at line 9-9 of FIG. 7.

With reference to FIGS. 1-4, it can be seen that the carrier of the invention comprises two wire members 10 and 11. Both members 10 and 11 are substantially identical in configuration, being formed of a single piece of

2

wire which is bent in such a manner as to form a generally rectangular, open frame having end portions 12 and 13 which are joined together by side portions 14 and 15. The side portion 14 is a generally straight member, while the side portion 15 has a generally scalloped configuration which is adapted to form nesting recesses for glassware.

With specific reference to the preferred embodiment of the invention shown in FIGS. 1 and 2, the member 14 is substantially straight throughout its length except at its ends where it is bent downwardly and curved outwardly into a generally U-shaped configuration 16 as it joins to the end portions 12 and 13. In this manner the U-bend portions 16 serve as feet for the carrier when it is supported on a table or other flat surface.

The end portions 12 and 13 of each of the members 10 and 11 are flattened at 17 and 18. The flattened portions 17 and 18 are provided with a hole therethrough so that when the members 10 and 11 are assembled in the relationship shown in the drawing, the flattened portion 17 of the member 10 and the flattened portion 18 of the member 11 will be juxtaposed and held in alignment by a rivet 19.

For carrying purposes, a handle 20 is provided which is of a generally inverted U configuration, with its downwardly extending ends flattened at 21. The flattened end 21 is provided with a hole therethrough so that when the rack is assembled the rivet 19 extends through the hole in the flattened portion 21 of the handle 20 and the flattened portions 17 and 18 of the members 10 and 11. In this manner the three wire members of which the rack is composed are held together in frictional engagement. The handle 20 also has two longitudinally extending reinforcing members 22 and 23 which serve to provide additional strength to the handle 20 and being so positioned as to aid in preventing glassware, positioned in the carrier, from tipping to the inside or shifting to any substantial extent laterally out of the scalloped configuration of the side portion 15.

As can be best seen when viewing FIG. 2, the end portions 12 and 13 of the members 10 and 11 are reversely bent at opposite sides of the flattened portions so that the carrier or rack, when collapsed as shown in FIG. 2, presents a relatively flat wire member which will require a minimum of storage area and may be shipped flat, thus requiring a relatively small packing carton therefor.

With specific reference to FIGS. 7, 8 and 9, a detailed showing of the hinge connection of FIGS. 1 and 2 is presented. This arrangement, as will be apparent from the following description, provides a means for more positively retaining the various parts in expanded position, yet permits the wire members to be collapsed into a relatively flat configuration. It should be understood that the general construction of the carrier, which has the hinge arrangement disclosed in FIGS. 7-9, will be the same as that disclosed in FIGS. 1 and 2. Like reference numerals have been applied to the members of FIGS. 7-9 as those applied to FIGS. 1 and 2, with additional reference numerals being applied where there are additional structural details that are not specifically disclosed with respect to FIGS. 1 and 2. Thus, the two frame members 10 and 11 have flattened portions 17 and 18 respectively. These flattened portions 17 and 18 are provided with cooperatively engaging recesses and raised portions. The flattened portion 18 has two raised portions or detents 24 and 25 which are formed in the surface thereof during the stamping or swaging of the wire member 11. Complementary recesses 26 and 27 are provided in the inner face of the flattened portion 17 of the wire member 10. The detents 24 and 25 are so positioned in relation to the recesses 26 and 27 that they

will be in engagement when the carrier is in its expanded position; thus providing a positive-feel retaining arrangement between the two wire members 10 and 11. The hinge formed at the opposite end of the carrier is provided with like detents and recesses so as to provide an additional snap retention effect between the two wire members 10 and 11 when in expanded position.

In order to prevent the handle 20 from becoming shifted out of vertical position when the carrier is in expanded position, the flattened end 21 of the handle 20 is provided with a groove 28 in its surface which is in facing relationship with respect to the frame member 10. The groove 28 is formed with a width which is substantially the same or, in actuality, slightly larger than the width of the flattened portion 17 of the wire member 10, so that in assembled relationship the groove 28 embraces the sides of the flattened portion 17.

As can be seen when viewing FIGS. 8 and 9, the flattened portion 17 of the wire member 10 will seat itself within the groove 28, thus providing a locking arrangement between the handle 20 and the wire member 10.

The particular configuration in FIGS. 7-9 is such that the handle 20 is formed so that it is biased inwardly with relation to the wire members 10 and 11. Thus, when the wire members 10 and 11 are moved into expanded position, such as shown in FIG. 1, the flattened portions 18 and 19 of the members 10 and 11 will seat into close contact and the handle 20, when erected to the vertical position, will have the groove 28 thereof in engagement with the flattened portion 17 of the wire member 10.

The rivet 19 extends through holes formed in the three members. However, in the particular embodiment disclosed in FIGS. 7-9, the rivet is sufficiently long so that it is merely for the purpose of providing a stable pivot axis for the three members and retain them in the specific relationship shown. Obviously, the rivet cannot be clinched tight, in that this would prevent collapsing of the carrier. As pointed out above, the spring action of the handle 20 which is biased inwardly by its configuration, permits collapsing of the carrier. By applying force to the members 10 and 11 in a closing or collapsing direction the detents will slip out of their recesses and the flattened portions 17 and 18 will be slightly moved apart. Furthermore, the portion 17 will move out of the groove 28 and the portion 17 will ride on the flat portion 21 thus causing a slight relative displacement of the flattened portions 17 and 21. The rivet 19 is long enough so as to permit these relative displacements without interference. In this embodiment, it is necessary that the inner wire member 11 also be biased outwardly at its flattened portions 18 so as to cooperate with the inwardly biased spring action formed by the flattened portions 21 of the handle 20.

Much of what has been stated above, is equally applicable to the modified rack of the invention, disclosed in FIGS. 3-6. Like reference numerals have been applied to FIGS. 3-6 where the elements of structure are identical in configuration with the structure of the embodiment of FIGS. 1, 2 and 7-9. Thus the rack of FIGS. 3 and 4 is comprised of two wire members 10 and 11 which are similar in shape to those previously described with respect to FIGS. 1 and 2. It should be noted, as a point of departure, that the side portions 14 of this embodiment are straight throughout their entire length and serve as resting surfaces when the rack is placed on a flat surface and also serve to support the bottom of glass articles when the rack is carried by the handle 20. The handle has a reinforcing bar 22 spanning the length thereof as in the previously described embodiment. Also, flat portions 17 and 18 are formed respectively in the sides of the frames 10 and 11. The sides 12 and 13 of the frame members of FIGS. 3 and 4 are joined together by rods 30 and 31. These rods serve to hold the ware, that is positioned in the rack, in close relationship with respect to the scallops provided in the sides 15. These rods 30 and 31 also serve

to prevent lateral shifting of the tumblers toward each other.

With specific reference to FIGS. 5 and 6, it can be seen that when the apparatus of the invention is expanded into the position shown in FIG. 3, the pivotal connection between the members 10 and 11 and the flats 17 and 18 formed thereon are in such a relationship that the rounded parts of end portions 12 and 13 adjacent the flats 17 and 18, will abut each other and prevent further expansion or scissoring action between the wire members 10 and 11 so that the carrier or rack may be free-standing and stable in its expanded position when the side portions 14 are resting on a table or flat surface. It should also be noted that the side portions 14 serve as the bottom rest for the tumblers which are placed in the rack and also retain the tumblers in the rack during carrying of the rack with tumblers therein. In actual practice, and with the specific construction of the side portions 14, tumblers positioned in the rack in nesting relationship with the sides 15 will be supported by the side portions 14 on diameters of their bottoms.

It will be readily appreciated that with the construction of the carrier as set forth above, it is necessary that the rivet 19 hold the three wire members 12, 13 and 20 in frictionally tight engagement so as to provide some rigidity to the carrier when it is in its expanded position. This frictional engagement obviously must not be too tight or too great so that it would prevent easy collapsing of the carrier into the position shown in FIG. 4. Extended use of such a carrier might result in loosening of these riveted connections. However, substantial wear must occur prior to any substantial loosening.

While the racks disclosed in the drawings are of a design which is capable of carrying up to 8 tumblers, it should be kept in mind that the number and size of the scallops formed in the side portion 15 will depend upon the size and number of articles which it is desired that the rack is to support.

Furthermore, the configuration of the handle 20 may take any design form, keeping in mind that its general configuration would be that of an inverted U shape member. However, its upper span may have any pleasing or artistic design other than that shown specifically in the drawings.

Other and further modifications may be resorted to within the spirit and scope of the appended claims.

I claim:

1. A collapsible carrier for tumblers or the like comprising, two substantially rectangularly shaped frame members having generally parallel opposed end portions, complementary flattened areas formed in said end portions, rivet means extending through openings in said flattened areas pivotally joining the end portions of one member to the end portions of the other member whereby said members may be relatively pivoted from substantially side-by-side parallel relationship into spaced-apart relationship where the respectively joined end portions describe an "X," complementary recess and detent means formed in said flattened areas for retaining said frame members in expanded position, a generally inverted U-shaped member connected at its ends to the means pivotally joining the end portions and serving as a carrying means for said frame members.

2. The carrier as defined in claim 1 wherein said end portions of said frames are reversely bent at opposite sides of the flattened areas, whereby said carrier when collapsed presents a substantially flat member.

3. A collapsible carrier for tumblers or the like comprising, two substantially rectangularly shaped frame members having generally parallel opposed end portions and connecting side portions, complementary flattened areas formed in said end portions, rivet means extending through openings in said flattened areas for pivotally joining the end portions of one member to the end portions of the other member whereby said members may be

5

relatively pivoted from substantially side-by-side parallel relationship into spaced-apart relationship where the respectively joined end portions describe an "X," said flattened areas at at least one end of said carrier being formed with complementary detents and recesses to retain said frame members in expanded position, said side portions which are below the pivot means being substantially straight and the opposite sides being of a scalloped configuration and a generally inverted U-shaped member connected at its ends to the means pivotally joining the end portions and serving as a carrying means for said frame members.

4. A collapsible carrier for tumblers or the like comprising, two substantially rectangularly shaped frame members having generally parallel opposed end portions and connecting side portions, complementary flattened areas formed in said end portions, rivet means extending through openings in said flattened areas for pivotally joining the end portions of one member to the end portions of the other member whereby said members may be relatively pivoted from substantially side-by-side parallel relationship into spaced-apart relationship where the respectively joined end portions describe an "X," the side portions which are below the pivot means being substantially straight and the opposite sides being of a scalloped configuration, a generally inverted U-shaped member connected at its ends to the means pivotally joining the end portions and serving as a carrying means for said frame

6

members, said U-shaped member being flattened at its end and formed with a transverse recess in the surface thereof which is in facing relationship with the flattened area of the frame member and adapted to engage the sides of said flattened area whereby said U-shaped member is retained in a predetermined angular relationship with respect to said frame members.

5. The carrier as defined in claim 4 wherein the ends of said U-shaped member are positioned to the outside of said frame members and are biased thereagainst, said rivet means passes through holes in said ends and has a length greater than the combined thicknesses of said flattened areas of the frame members and the flattened end of said U-shaped member.

References Cited by the Examiner

UNITED STATES PATENTS

1,429,675	9/1922	Burlingame	220—110
1,980,416	11/1934	Maguire et al.	220—117
2,049,884	8/1936	Wurster et al.	220—104 X
2,265,877	12/1941	Smith	220—101
2,316,738	4/1943	Brunhoff	220—101
2,395,601	2/1946	Wenthe	220—104
2,419,413	4/1947	McCalla	220—101

GEORGE O. RALSTON, *Primary Examiner.*