Feb. 22, 1955 G. N. FISHER 2,702,648

GLASS STORING MEANS

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Fig. 1.

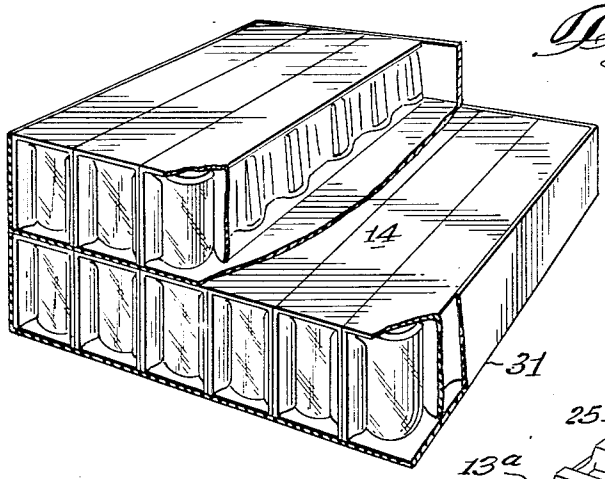


Fig. 2.

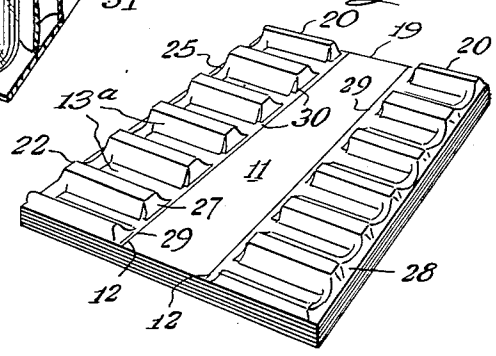


Fig. 3.

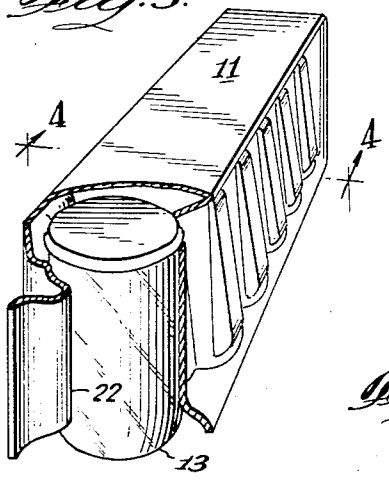


Fig. 4.

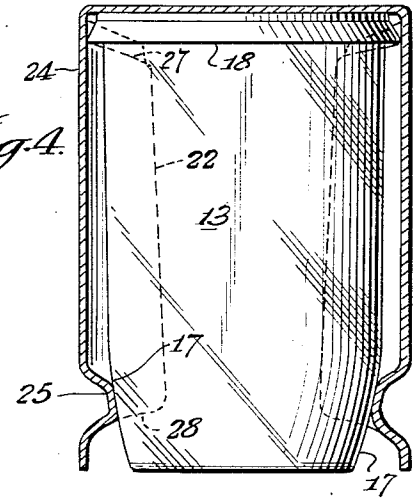
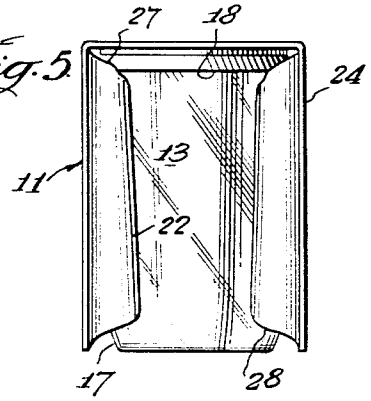


Fig. 5.



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Fig. 6.

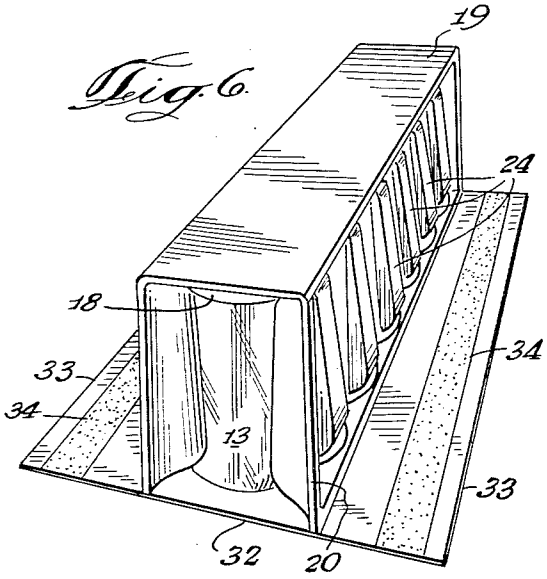


Fig. 7.

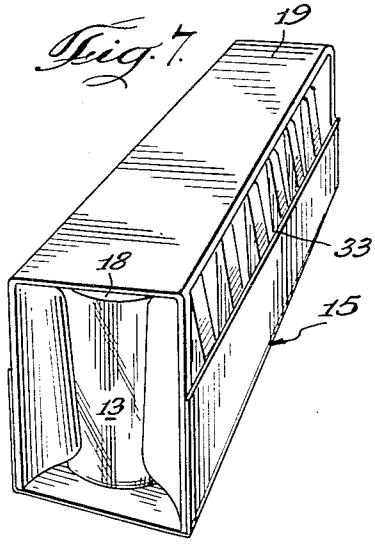


Fig. 8.

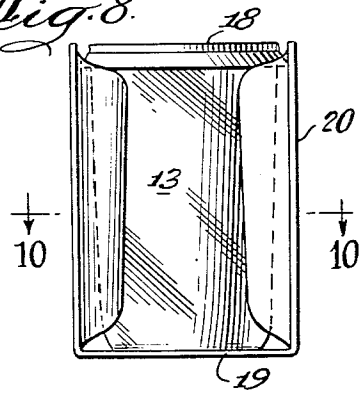


Fig. 9.

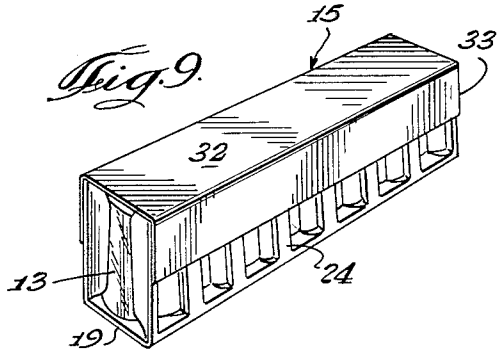
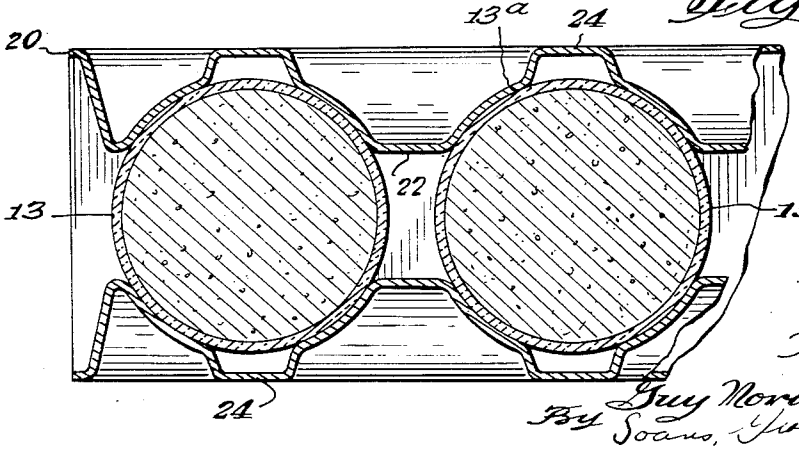


Fig. 10.



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GLASS STORING MEANS

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Application May 6, 1952, Serial No. 286,363

1 Claim. (Cl. 217—26.5)

The present invention relates generally to the handling of containers, and more particularly relates to the provision of more efficient means for handling and packaging glass jars.

After the manufacture of glass jars for commercial purposes, it has been the customary practice to package the finished jars, as they are conveyed from the jar-making machine, in shipping containers comprising sectionalized boxes. The packaged jars may then be stored or sent to a user. The user removes the jars from the shipping container and feeds them into a dispensing machine wherein the jars are filled with any desired material, such as processed cheese, and sealed.

Upon leaving the dispensing machine, the jars are again placed in shipping containers, which may be the original containers, for further shipment or storage. Ultimately the jars are again individually handled by the retailer when the jars are again removed from the shipping container for sale. It is quite apparent that in the foregoing procedure, which is typical of the handling of millions of jars, each jar is individually handled several times, thereby substantially increasing the possibility of damage or breakage.

Accordingly, it is a primary object of the present invention to provide means for more expeditiously handling glass jars with minimum possibility of damage. This and other objects of the invention are accomplished through provision of an inexpensive packaging unit which functions both as a jar pick-up device and as a package element, the unit being adapted to pick up one or more jars at a time and, in addition, packaging the jars in such a manner as to assure against jar damage and breakage during shipment. Moreover, the packaging unit may also comprise the major part of an economical sales package for several jars.

Other objects and advantages of the invention will be made clear by reference to the following description and the accompanying drawings in which:

Figure 1 is a fragmentary perspective view of a shipping box containing a number of packaging units embodying features of the invention, each unit protectively surrounding a plurality of jars;

Figure 2 is a perspective view of a plurality of packaging units, the view particularly illustrating the manner in which they can be nested for ease of storing;

Figure 3 is a perspective view, partially in section, of a packaging unit of the type shown in Figure 1, the unit being shown folded around capped jars;

Figure 4 is an enlarged sectional view of the packaging unit of the invention, taken along line 4—4 in Figure 3, the associated jar being shown in elevation to more clearly illustrate the relation of the unit thereto;

Figure 5 is an end view of the packaging unit which is shown folded about a capped jar;

Figure 6 is a perspective view showing a modification of the invention wherein the packaging unit comprises a part of a sales package, the package being shown prior to sealing;

Figure 7 is a view, similar to Figure 6, showing a sealed sales package;

Figure 8 is an end elevational view illustrating another modification of the invention wherein the glass jar is inverted with respect to the position shown in Figures 3 to 7;

Figure 9 is a view similar to Figure 7, the sales package being inverted and the jars disposed relative to the packaging unit as shown in Figure 8; and

Figure 10 is a fragmentary sectional view taken along line 10—10 in Figure 8.

As shown in the drawings, the combination jar pick up device and package element of the present invention comprises a semi-rigid piece 11 which is preferably fabricated from a paper board having a non-smooth or roughened surface, such as egg carton board, or similar material. The piece 11 is generally rectangular in shape and in order to facilitate its use as a combination jar pick-up device and package element it is scored along score lines 12 (Figure 2) so that it may be folded as shown in Figures 3 to 5 in engaging relation with a plurality of aligned jars or containers 13. In order to more firmly grasp the jars 13 and at the same time separate the jars, one from the other, the piece 11 is molded, stamped, or otherwise formed to provide a series of spaced, jar receiving recesses 13*a*. The combination jar pick up device and package element may be manipulated to pick up a plurality of jars at one time so as to transport them, as desired, and it may also form a portion of a package 14 (Figure 1) containing a number of such packaging units or it may be employed in a unitary package 15, as shown in Figure 7. The particular structural features of the combination unit which permit the simultaneous engagement of a number of jars so that they may be picked up at one time also provide a cushion about the jars, and consequently, the combination unit is highly desirable and efficient.

In the embodiment of the invention, which is illustrated in the drawings, the combination jar pick-up device and packaging element is adapted particularly for use with generally cylindrical glass jars 13, having a slightly tapered bottom portion 17, which may be capped with a relatively thin lid 18. The lid is crimped onto the jar, as by means of a conventional capping machine. Though the drawings illustrate a combination unit particularly adapted for use with the described jar, the unit may be suitably modified to accommodate jars of other shapes in accordance with the principles of the invention.

The generally rectangular piece 12 of the combination jar pick-up device and packaging element is formed to provide an elongated flat central section 19, having a width equal to or slightly greater than the diameter of the lid 18, and a pair of outer sections 20 which are contiguous with the central section 19, these sections being similarly formed to provide the jar receiving recesses 13*a* mentioned above. More particularly, the outer sections 20 have a series of uniformly spaced transverse ridges 22 formed therein which extend transversely to the central section 19 and which define the jar receiving recesses 13*a*. The transverse edges of the ridges 22 are shaped to conform to the contour of the jars 13 so that the jars 13 may be firmly engaged and held in spaced relation.

At the base of each recess 13*a*, there is provided a transversely extending cushioning or buffer rib 24 for protecting the glass jar from shock or pressure applied to the side of the unit 11. The buffer ribs 24 are formed so as to be substantially coextensive with the length of the recesses 13*a* to provide maximum jar protection, but preferably these ribs terminate short of the outer end of the recess 13*a*.

A narrow, longitudinally extending rib 25 is disposed intermediate the ridges 22 and adjacent the outer end of each recess 13*a*. In order to assist in carrying the jar in the combination unit, the rib is positioned to engage the tapered portion 17 of the jar 13 (Figure 4) and is proportioned to engage this portion of the jar. In addition to assisting in the holding of the jars in the combination unit when in jar engaging relation, this rib 25 also provides cushioning and protection for the jars.

The ridges 22 which define the jar receiving recesses 13*a* are each preferably slightly shorter than the width of the outer sections 20 of the piece 11 and terminate in oppositely facing sloping end surfaces 27 and 28, respectively. As before indicated and for convenience, the longitudinal edges of the central section 19 are scored along score lines 29 to readily permit folding of the outer sections 20 toward each other to form a jaw which may be

manipulated so as to perform the pick-up function of the combination jar pick-up device and package element.

The ribs **24** and **25** not only function to protect the jars **13** against breakage but, in addition, provide rigidity to the outer sections **20** of the combination unit. More particularly, the transversely extending ribs **24** coact with the ridges **22** so that the ribs **25** are brought into positive engagement with the tapered sides **17** of the jars **13** and the ridges **22** are substantially uniformly pressed against the sides of the jars, which uniformity of pressure is particularly desirable when the combination unit is employed as a pick-up device in order to hold the jars in the combination unit. Rigidity of the outer sections **20** in the longitudinal direction is made possible by the longitudinally extending ribs **25** and, as a result, the combination unit engages each jar of the series substantially uniformly. The effect of the ribs **24** and **25** in imparting stiffness to the combination unit both transversely to and longitudinally of the unit is an important feature of the invention. This importance is readily apparent when it is noted that the combination unit, when employed as a pick-up device, is manually manipulated so that the force applied to the unit for pick-up purposes may be relatively concentrated, and consequently, such force must be translated uniformly to the various jars **13** picked up by the unit.

On the other hand, the inherent rigidity of the piece **11** may not be relied upon for uniformly translating the applied force because, if the piece **11** is too rigid, it may not effectively cushion the jars **13** and assure maximum protection against jar breakage.

Accordingly, the ribs **24** and **25** permit the use of a semi-rigid material so as to provide assurance against jar breakage and also permit effective functioning of the combination unit as a pick-up device.

When the jars **13** are filled, it may be somewhat difficult to hold the jars in the combination jar pick-up and package element when they are picked up and this is particularly the case when the jars contain a relatively heavy material. In order to overcome this difficulty, jar-cap receiving recesses **30** are formed in the transversely extending ridges **22** which are formed in the transversely extending ridges **22** which define the jar receiving recesses **13***a*. The jar-cap receiving recesses **30** are disposed at the inner ends of the ridges, as shown in Figure 2, and are positioned and proportioned to lockingly engage the edges of the caps **18** of the jars **13** when the outer sections **20** of the piece **11** are folded downwardly in the manner shown in Figure 6.

The combination jar pick-up device and package element units are formed to permit nesting with one another when they are laid flat as is illustrated in Figure 2. This is accomplished by forming the contours of the piece **11** so that the thickness of the material from which it is made is substantially uniform throughout and, consequently, the various ridges and ribs formed in the pieces **11** leave oppositely facing hollows of proper size for mating with the ridges and ribs of an underlying combination unit. This nesting feature of the combination units readily permits stacking of the units and furthermore, this feature permits compact storage of the units.

In use, one of the combination pick-up devices and package elements may be selected from a convenient stack and the outer sections **20** folded along the score lines **29** to provide a pick-up device which may be manipulated to pick up a row of jars, such as the jars leaving a jar-making machine. When properly manipulated, the flat central section **19** of the combination unit may be placed over the upper end of a series of the jars **13** and the sides of the jars engaged by the outer sections **20**, the jars nesting in the jar receiving recesses **13***a*, as seen in Figure 3. In the handling of empty glass jars **13**, the coaction of the pressure of the ridges **22** against the side of the jars and engagement of the ribs **25** with the tapered sides **17** of the jars **13** provides sufficient force to maintain the empty jars in the unit.

After the combination unit has been properly manipulated to pick up the jars, the unit containing the jars **13** may then be placed in a suitable carton **31**, such as that shown in Figure 1, for shipment to the user. The combination unit thus becomes a package element which positively assures against the breakage of the jars in shipment, the combination unit cushioning the jars and separating them from one another. Accordingly, when the combination unit of the invention is employed, additional cushioning means in the shipping carton **30** is not necessary.

After the carton **31**, containing glass jars protected by the combination units functioning as package elements, has reached a manufacturer-user who wishes to fill the jars with a prdouct, the glass jars may be readily removed from the carton by again using the combination units as a pick-up device for grasping the jars. The jars may be deposited in a row for feeding to a suitable jar filling machine where they are filled, capped and discharged. During filling, the combination units **11** may be compactly stacked, in the manner shown in Figure 2, and removed to the discharge end of the machine for further use.

The filled and capped jars discharged from the filling machine may be taken from the machine by the combination units, which once again function as pick-up devices, and placed in the carton **31** for reshipment. When the capped jars **13** are picked up by the combination unit of the invention, the lids **18** seat in the recesses **30** so that the jars are positively locked and will not drop out even though the jars are filled with heavy material. At the same time, the jars may be easily released from the combination units, when desired, by suitable manipulation as by causing the outer sections **20** to spread out.

In addition to being used in the foregoing manner, the combination unit, as previously pointed out, may also comprise a major portion of an economical package unit **15** and such a package is shown in Figures 6 and 7 wherein the combination unit, containing jars **13**, is placed on a flat strip **32**, which may be made of paper board, having portions or flaps **33** which extend outwardly of the longitudinal edges of the combination unit. The flaps **33** are folded against and glued to the outer sections **20** of the combination unit to form a container therewith. The strip **32** is preferably scored to facilitate folding of the flaps **33** and glue lines **34** are applied to the flaps for gluing the flaps to the outer sections **20**. The resulting package is economical and provides a highly satisfactory package unit of pleasing appearance. In the latter connection, the strip **32** may be high grade board which may be printed with suitable designs or advertising matter.

In Figures 6 and 7, the jars **13** are shown in the package unit **15** with the lid end of the jars adjacent the central section **19** of the combination unit but it will be understood that the jars **13** may be inverted in the package unit **15** and such positioning of the jars **13** is illustrated in Figures 8 and 9 of the drawings. When the jars **13** are so disposed in the package unit **15**, the bottom of the jar **13** rests on the central section **19** of the combination unit and the sides of the jar are engaged by the ridges **22** of the outer sections **20**, as in the previous instances. When assembling the package unit **15** with the jar bottoms adjacent the central section **19** of the combination unit, the jars **13** may be pushed onto the strip **32** and a combination unit fitted over the jars. On the other hand, the filled jars **13** may be picked up in their upright position by a combination unit of the invention and placed on the central section **19** of another combination unit in the position shown in Figure 8, whereupon the strip **32** may be applied and the flaps **33** glued to provide the package unit. Of course, if the jars **13** leave the jar filling machine with their bottom ends up, the combination unit may be used to pick up the jars **13** and invert them for inspection purposes. This is useful when it is desirable to inspect the tops **18** of the glass jars after they have been removed from the jar filling machine.

Independent of the position of the jars **13** relative to the combination unit, a complete package **15** may be formed by placing the strip **32** across the longitudinal edges of the combination unit so that the flaps **33** extend outwardly of these edges of the unit, and then folding the flaps **33** against the transverse ribs **24** formed on the outer sections **20** of the unit whereupon the flaps are secured to the ribs **24** as by gluing.

In the foregoing, I have described a combination jar pick-up device and packaging element which has many advantages in the handling and packaging of containers, particularly glass jars. The unit may be simply and economically fabricated. Furthermore, the combination unit may be stacked and stored in minimum space. However, the most important feature of my invention is probably the facility with which a large number of jars may be handled, packaged, and shipped with little possibility of damage in each of these steps.

Various of the features of this invention which are believed to be new, are set forth in the following claim.

I claim:

A device useable for picking up jars and as a package

element, the device being adapted for handling generally cylindrical jars having caps which extend outwardly from the periphery of the jars comprising a semi-rigid piece having a flat, elongated central section and having a pair of contiguous outer sections hingedly connected to said central section along the longitudinal edges thereof, said central section having a transverse dimension which closely approximates the outer diameter of the top of the jars, said outer sections having formed therein a plurality of spaced, transversely and upwardly extending ridges having closed ends and inwardly curved sides, the ends being inclined outwardly and downwardly, with their inner ends terminating in the plane of the outer sections adjacent the hinged connections thereof, and forming jar receiving recesses therebetween, said ridges in the respective outer sections being oppositely disposed when said outer sections are folded into face to face relation, said recesses having transversely extending ribs formed therein which extend downwardly from said recesses, said outer sections having longitudinally extending ribs formed therein which are disposed adjacent the outer end of said recesses, said longitudinally extending ribs being positioned and proportioned to engage jars when the outer sections are folded into face to face relation, said transversely extending and longitudinally extending ribs reinforcing said outer sections, said ridges having jar cap receiving recesses formed therein, said jar cap receiving recesses being disposed adjacent said central section and positioned and proportioned to lock with a jar cap when said outer sections are folded into face to face relation, said ribs and recesses being formed so as to provide contours of opposite shapes on opposite sides of said outer sections whereby the combination jar pick-up device and package element may be compactly stacked, said recesses having transversely extending sides adjacent to and extending away from said central section a distance approximating the distance from the top of the cap to the underside of the cap and having transversely extending sides which extend into said recesses a distance approximating the overhang of the cap from the jar.

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