Dec. 26, 1961 D. H. HUMPHREY ET AL 3,014,634

DISPENSING CONTAINER

Filed May 12, 1958 3 Sheets-Sheet 1

Fig. 1

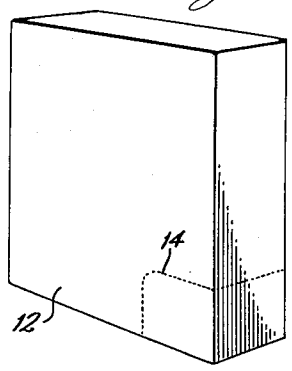


Fig. 2

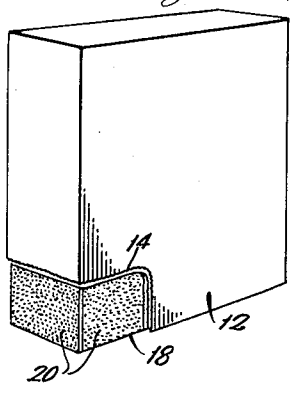


Fig. 3

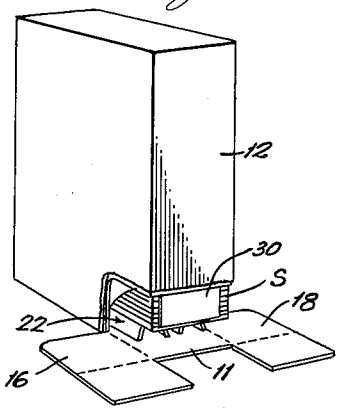


Fig. 4

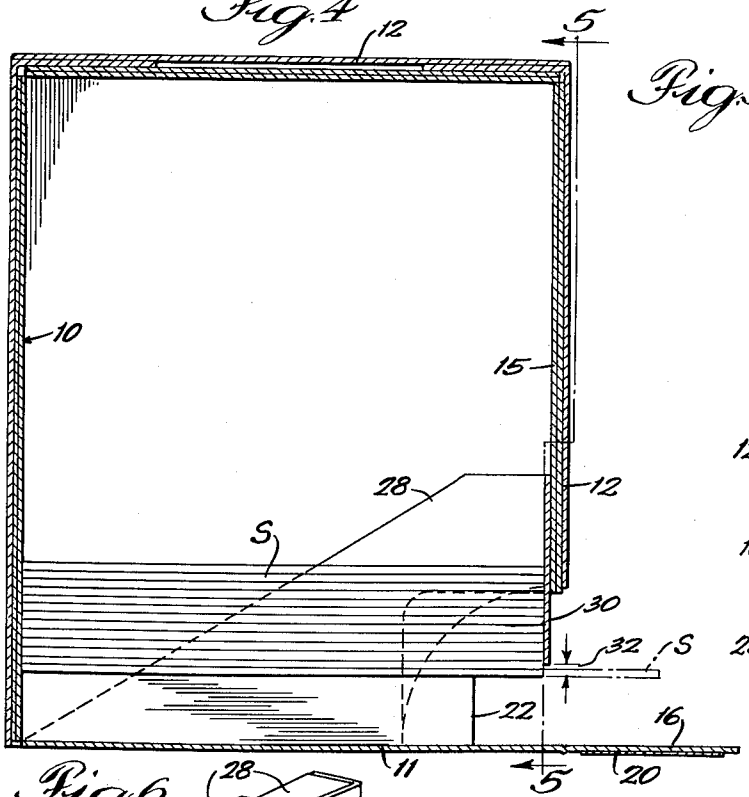


Fig. 5

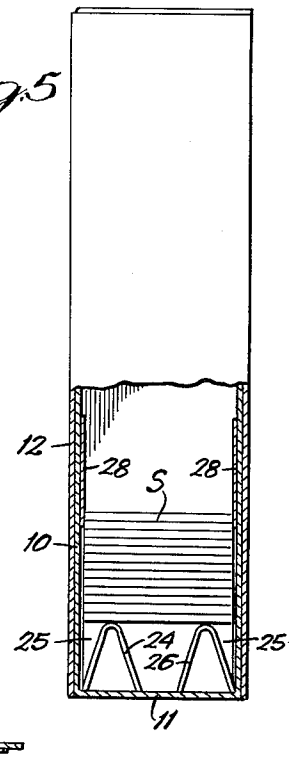
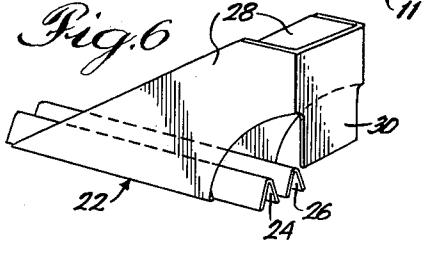


Fig. 6



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Filed May 12, 1958 3 Sheets-Sheet 2

Fig. 7

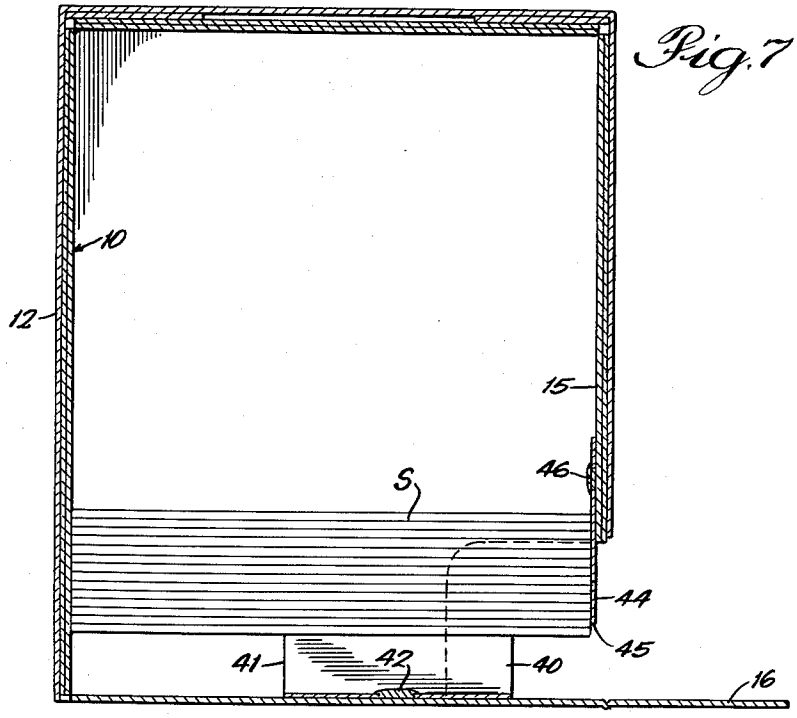


Fig. 8

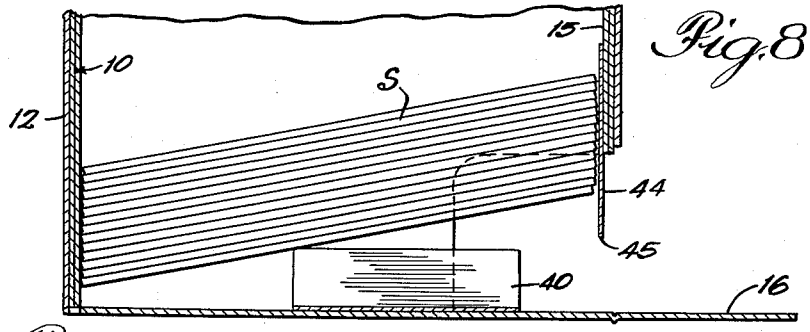


Fig. 10

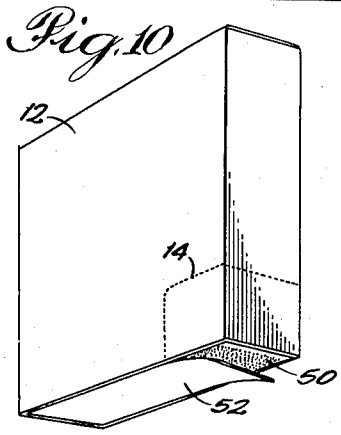
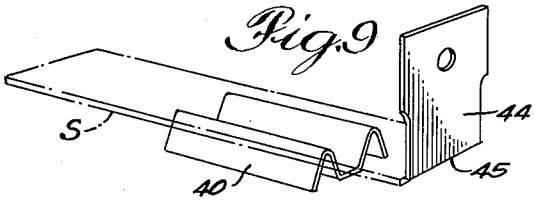


Fig. 9



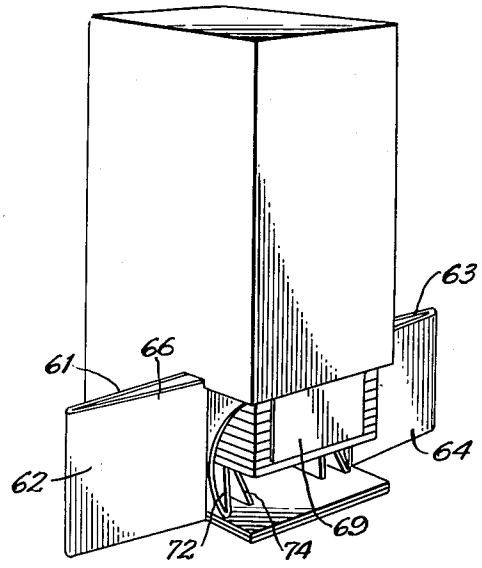
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Filed May 12, 1958 3 Sheets-Sheet 3

Fig. 11



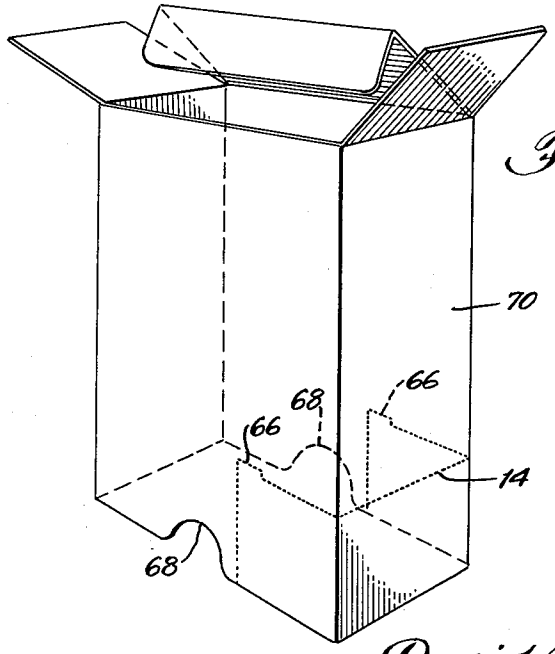


Fig. 12

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DISPENSING CONTAINER

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10 Claims. (Cl. 229—17)

This invention relates to an improvement in containers for wafer- or plate-like objects, and more particularly to a combination package-dispenser.

Wafer- or plate-like objects such as glass slides for microscopy, photographic use or the like are normally packaged in boxes from which the lid must be removed to make the slides accessible. It is extremely difficult to remove one slide from the prior art containers without touching the surface of the slide or an adjacent slide. Consequently, smearing of the slides with finger marks during removal is practically unavoidable.

The primary object of the present invention is to provide an improved package construction which is simply convertible to a dispenser permitting removal of one slide at a time (or more if desired) without touching the slide except at the edges.

Another object is to provide such a container or package wherein the slides are stacked on a support or platform disposed in the bottom of the container and become accessible by stripping back a corner of the container near the bottom of the stack.

Another object is to provide a container of this type which may be adhered to the supporting surface on which the container rests so that slides may be removed with one hand without the necessity of holding down the container with the other.

In a preferred form of the invention the container consists of a box made from pasteboard or other suitable material which encloses a stack of wafer-like objects and which has a supporting element in the bottom that cooperates with a gauge member spaced above the supporting surface thereof to form a gap for limiting the number of objects that may be removed from the bottom of the stack at one time. The portions of the side walls of the box surrounding the dispensing gap are adapted to fold down into the plane of the bottom panel of the box to permit manual removal of the slides. Preferably, these side wall portions are externally coated with a pressure sensitive adhesive and serve as adhesive feet to secure the box to the table or supporting surface on which it rests. The pasteboard box of the invention costs little more to make than a conventional match box type container and thus may be thrown away when the contents have been used up.

Another object is to provide an improved combination package-dispenser construction having an enclosing sleeve to improve the resistance of the package to dust and dirt and to provide increased strength, said sleeve being perforated to permit removal of one corner in converting the package to a dispensing unit.

These and other objects will become apparent from the following description when read in connection with the accompanying drawings, wherein:

FIGURE 1 is a perspective view of a complete combination package and dispenser construction made in accordance with the invention;

FIGURE 2 is a perspective view similar to FIGURE 1 with the corner of the sleeve removed by tearing along the perforation 14;

FIGURE 3 is a perspective view of the package of FIGURE 2 with the flaps, forming the corner of the inner box, folded down for adhesion to the supporting surface;

FIGURE 4 is a longitudinal sectional view through the container, as shown in FIGURE 3;

FIGURE 5 is a sectional view taken along the line 5—5 of FIGURE 4;

FIGURE 6 is a perspective view of the integral combination support and gauge elements adapted to fit into the bottom of the inner box;

FIGURE 7 is a view similar to FIGURE 4 of an alternative construction in which the platform or supporting element for the slides provides support only at the forward end of the stack, thus permitting the stack to be tilted, and in which a separate gauge element is employed;

FIGURE 8 is a fragment of the lower portion of FIGURE 7 showing the slides in tilted position;

FIGURE 9 is a perspective view of the separate gauge and support element used in the alternative construction shown in FIGURES 7 and 8;

FIGURE 10 is a perspective view of another form of the invention in which a film of pressure sensitive adhesive is applied to the bottom of the inner box, not covered by the sleeve; and

FIGURE 11 is a perspective view of another modification of the invention wherein the flaps are designed to convert to wings to stabilize the box; and

FIGURE 12 is a similar view of the sleeve for the box of FIGURE 11.

It will be understood that the particular constructions described herein are illustrative of the invention and that it is not our intention to limit the invention to the particular forms shown and described.

The container of the invention consists of an inner six-sided box 10 which is adapted to completely enclose a stack of wafer-like objects such as the slides S shown in the drawing. It will be understood that the shape of the box is determined by the shape of the wafer-like objects. The invention is applicable to round or square wafer-like objects as well as those which are rectangular in plan view. The box 10 preferably is enclosed in a sleeve 14 which has one open end for receiving the box. The sleeve 14 is not an essential element of the invention but it is desirable to provide increased strength to the inner box and it also improves the resistance of the container to seepage of dust into the inner box. The sleeve is particularly useful when the slides are made of glass or other heavy material and the box is made from pasteboard. In such case the added strength of the reinforcing sleeve is highly desirable. It will be understood, of course, that the box can be made from metal, wood, plastics or any other suitable material.

The box 10 is constructed in accordance with conventional box-making techniques and has closure flaps on the one open end or side provided for inserting the support element and the wafer-like objects which are to be packaged in the box. Since there is nothing critical about the construction of the box, a detailed description thereof will not be given herein. The supporting element or platform designated generally by the numeral 22 rests on the bottom panel 11 of the box 10 with the rear end thereof abutting the rear panel of the box. The supporting member consists of a pair of parallel ribs 24 and 26 which may be conveniently formed from a single sheet of metal. In the particular form of the invention shown in FIGURES 4, 5 and 6, the supporting element is constructed integrally with the gauge member 30. As best shown in FIGURE 6, a pair of side walls 28 arching upwardly from the base of ribs 24 and 26 join the gauge member 30 which is adapted to lie generally in the plane of the front panel 15 of the box 10. The slides S stacked within the box will readily pass over the inner face of the gauge member 30 because it is made from relatively thin material. The stack of slides S is supported at the apices of the triangular ribs 24, 26. The distance from the top of the support members to the lower edge of the gauge member 30 defines a gap identified in the drawing by the numeral 32. The

size of this gap is critical and is determined by the thickness of the slides S. The gap 32 in the drawing is sized to permit removal of one slide at a time from the bottom of the stack. It will be understood, however, that the gap may be sufficiently wide to permit removal of two or more slides at one time as desired. Although the support member 22 is preferably made from a single sheet of thin metal which is die cut and shaped to form the integral unit, as shown in FIGURE 6, other suitable materials and methods of fabrication may be employed. The part may be molded from thermoplastic or thermosetting resins, for example.

The corner of the inner box 10 which surrounds the gap 32 is constructed from flaps 16, 18 which comprise a portion of the side walls and a portion of the front wall of the box. The forwardmost panels of the flaps 16, 18 fold over each other at the front of the box, which will be readily understood by reference to FIGURES 2 and 3. They are held in place by a spot of adhesive and/or by the enclosing sleeve 12. The underside of the flaps 16, 18 are coated with a pressure sensitive adhesive 20. Suitable pressure sensitive adhesive are made from polyester resins in admixture with rubber and are well known in the art, finding extensive use in pressure sensitive tapes. They have the desirable property of being capable of adhering to almost any surface repeatedly. Consequently, such adhesive films may be used time and time again for adhesion purposes. Preferably, the pressure sensitive adhesive 20 carries some sort of a smooth non-adhesive paper (not shown) which prevents adhesion of the film to the sleeve 12 which normally encloses the box. The sleeve 12 is perforated, as indicated at 14, so that the lowermost corner can be removed to provide access to the flaps 16, 18 without removing the sleeve from the box. After removal of the perforated portion of the sleeve, the non-adhesive paper is stripped off and the pressure sensitive adhesive 20 is then ready for adhering the container to any supporting surface on which it may rest. The flaps 16, 18 form feet, as shown in FIGURE 3, which lie in the plane of the bottom panel 11 and thus may be readily adhered to the table on which the box rests.

After the corner of the sleeve has been torn off and the flaps positioned as shown in FIGURE 3, the package has been converted to a dispenser which is capable of dispensing one slide S at a time through the gap 32. It will be noted that the supporting element or platform 22 stops short of the front panel 15 of the inner box 10. This facilitates engaging the fingers with the edges of the lowermost slide in the stack without interference. If desired, the support 22 may extend all the way to the front panel but in such case it is important that the supporting element be narrower than the slides which rest thereon. This construction is best illustrated in FIGURE 5. It will be noted that space 25 is provided beneath the outer edges of the lowermost slide to permit gripping the slide. If the supporting member were the same width as the slide, it would be much more difficult to remove it.

Reference is now made to FIGURES 7 through 10 showing the alternative forms of the invention. In FIGURE 7 the support member is designated by the numeral 40 and differs from the support member 22 in that support is provided only at the forward end of the stack of slides S. The space between the rear end 41 of the support 40 and the rear wall of the box permits the slides S to be titled as shown in FIGURE 8. If the slides are very smooth and have a tendency to stick together, it is desirable to use a construction of this type. By merely pushing the forward ends of the slides upwardly the slides tilt and this causes them to move with respect to each other and break free. To prevent the support 40 from moving with respect to the slides it is secured to the bottom panel 11 of the box by a suitable fastener 42.

It will also be noted that the construction shown in FIGURES 7 and 8 utilizes a separate gauge member 44 which is secured to the front panel 15 of the box by means of a fastener 46. Since the gauge member is not integrally formed with the support member 40, the size of the gap is not automatically controlled by the accurate formation of the support member. It is important, therefore, that the gauge member 44 be secured to the front panel with care so that the distance between its lower edge 45 and the top of the support member 40 is of the proper dimension to permit removal of the desired number of slides—in this case, one. Gauge member 44 should be made from a rather stiff material so that there is no tendency for it to be pushed out of the way when a slide S is removed from the stack. Metal or plastics is preferred.

In other respects the construction shown in FIGURES 7 and 8 is identical to that described in connection with FIGURES 1 through 5.

Instead of providing flaps 16, 18 which form adhesive feet to secure the box to the surface on which it rests, the bottom panel 11 of the box may be coated with a film of pressure sensitive adhesive, indicated at 50 in FIGURE 10. The adhesive is protected from foreign material by a sheet of non-adhesive glazed paper 52 which strips readily from the film 50 in converting the container to a dispenser. In such case the corner of the inner box surrounding the gap between the support and gauge elements may be perforated for easy removal in exactly the same manner as the sleeve is perforated at 14.

In FIGURE 11 we have illustrated another modification of the invention in which adhesive is applied to the bottom, as shown in FIGURE 10, and the flaps 61, 62 and 63, 64 fold back into wings. In such construction the flaps are hinged to the box at the rear rather than at the bottom (FIGURE 3). A notch 66 is cut in the cooperating sleeve 70 to hold the forward panels 62 and 64 of the flaps in the position indicated in FIGURE 11. The wings thus formed prevent the box from tumbling over. It will also be noted that the sleeve 70 may contain cut-out portions 68 which permit gripping the box to remove the sleeve. Sleeve 70 is otherwise just like sleeve 12 in construction.

Another feature of the construction of FIGURE 11 is the enlargement of the space between the gauge member 69 and the supporting member 72, created by cutting off the forward edge of the support member on an angle, as indicated at 74. The enlarged space permits tilting the slides, or other stacked objects in the box, forwardly so that more than one may be removed at one time. Thus if adhered slides are of the type that do not respond to tilting of the stack to separate them, the joined pair may be removed as a unit and separated outside the box. This is accomplished by tilting the stack forward so that the upper slide of the adhered pair will clear the gauge member 69. It will be understood that there is nothing critical about the shape of the gap so long as sufficient space is provided to permit two, or if desired, three slides to be removed at one time from beneath the gauge member.

It will be appreciated from the foregoing description that we have provided an improved combination container and dispenser which is simple in construction, economical to produce, and efficient in operation. We have found that the costs in producing a package of this kind are only about 20% higher than the conventional package of the prior art. It performs all of the functions of the conventional package by keeping the wafer- or plate-like objects clean prior to sale but at the same time the package is easily converted to a dispenser. The slides may be removed from the dispenser using one hand only and without smearing the surface of the slide with fingerprints. The invention finds use in packaging microscope slides, microscope slide cover slips, photographic slides, glass discs, medicament wafers, flat aspirin tins, and other flat objects that can advantageously be packaged in a dispensing container.

Other modifications of the container-dispenser construction of the invention will occur to those skilled in

the art without departing from the true spirit and scope of the invention as defined in the claims appended hereto.

We claim as our invention:

1. A disposable dispensing container for rectangular wafer-like objects comprising a pasteboard box having a bottom panel, opposed side panels and a front panel for enclosing a stack of said objects, a support member disposed in the bottom of said box on which said stack is adapted to rest, and an object-restricting gauge member formed integrally with said support member lying generally in the plane of said front panel and having its lower edge spaced above said support member, said support being laterally spaced from the inner surface of said box so that objects resting thereon extend beyond the edge of said support to facilitate manually grasping said objects, said front and side panel portions forming the box corner adjacent said support and said gauge members constituting flaps which unfold into the plane of the bottom of said box, said flaps being coated with a pressure sensitive adhesive for preventing movement of said container with respect to the surface on which it rests.

2. A disposable dispensing container for rectangular wafer-like objects comprising a pasteboard box having a bottom panel, opposed side panels, and a front panel for enclosing a stack of said objects, a support member disposed on said bottom panel for supporting said stack above said bottom, and an object-restricting gauge member lying generally in the plane of said front panel and having its lower edge spaced above said support member, said gauge member being integrally formed with said support member to fix the relative positions of the two members, said front and side panel portions forming the box corner adjacent said support and said gauge members being displaceable to permit access to objects within said container.

3. The container of claim 1 in which said gauge member is connected to said support member by means of a pair of arched side walls disposed adjacent said opposed side panels.

4. A disposable dispensing container for rectangular wafer-like objects comprising a pasteboard box having a bottom panel, opposed side panels, and a front panel for enclosing a stack of said objects, a support member disposed on said bottom panel for supporting said stack above said bottom, said support being laterally spaced from the inner surfaces of said corner portions so that objects resting thereon extend beyond the edge of said support to facilitate manually grasping said objects, and an object-restricting gauge member lying generally in the plane of said front panel and having its lower edge spaced above said support member, said gauge member being integrally formed with said support member to fix the relative positions of the two members, said front and side panel portions forming the box corner adjacent said support and said gauge members being displaceable to permit access to objects within said container.

5. The container of claim 4 in which said lateral space between said support and said corner portion is provided between the end of said support and said front panel portion.

6. The container of claim 4 in which said lateral space between said support and said corner portion is provided between the sides of said support and said opposed side panels.

7. A disposable dispensing container for rectangular wafer-like objects comprising a pasteboard box having a bottom panel, opposed side panels, and a front panel for enclosing a stack of said objects, a support member disposed on said bottom panel for supporting said stack above said bottom, said support being laterally spaced from the inner surfaces of said corner portions so that objects resting thereon extend beyond the edge of said support to facilitate manually grasping said objects, and an object-restricting gauge member lying generally in the plane of said front panel and having its lower edge spaced above said support member, said gauge member being integrally formed with said support member to fix the relative positions of the two members, said front and side panel portions forming the box corner adjacent said support and said gauge members constituting flaps which unfold into the plane of the bottom of said box, said flaps being coated with a pressure sensitive adhesive for preventing movement of said box with respect to the surface on which it rests.

8. A disposable dispensing container for rectangular wafer-like objects comprising a pasteboard box having a bottom panel, opposed side panels, and a front panel for enclosing a stack of said objects, a support member disposed on said bottom panel for supporting said stack above said bottom, an object-restricting gauge member lying generally in the plane of said front panel and having its lower edge spaced above said support member, said gauge member being integrally formed with said support member to fix the relative positions of the two members, said front and side panel portions forming the box corner adjacent said support and said gauge members being displaceable to permit access to objects within said container, and a sleeve for enclosing the sides of said box, the corner of said sleeve overlying said displaceable front and side panel portions being perforated so that it can be torn off to expose said front and side panel portions.

9. A disposable dispensing container for rectangular wafer-like objects comprising a pasteboard box having a bottom panel, opposed side panels, and opposed front and rear panels for enclosing a stack of said objects, a support member of lesser length than the distance between said opposed front and rear panels disposed on said bottom panel for supporting said stack above said bottom, and an object-restricting gauge member lying generally in the plane of said front panel and having its lower edge spaced above said support member, said gauge member being integrally formed with said support member to fix the relative positions of the two members, said front and side panel portions forming the box corner adjacent said support and said gauge members being displaceable to permit access to objects within said container.

10. A disposable dispensing container for rectangular wafer-like objects comprising a pasteboard box having a bottom panel, opposed side panels and a front panel for enclosing a stack of said objects, a support member disposed in the bottom of said box on which said stack is adapted to rest, and an object-restricting gauge member formed integrally with said support member lying generally in the plane of said front panel and having its lower edge spaced above said support member, said support being laterally spaced from the inner surface of said box so that objects resting thereon extend beyond the edge of said support to facilitate manually grasping said objects, said front and side panel portions forming the box corner adjacent said support and said gauge members constituting flaps which unfold rearwardly into laterally extending wings to stabilize said container when it is being used as a dispenser, and said bottom panel having pressure sensitive adhesives on the underside thereof for preventing movement of said container with respect to the surface on which it rests.

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