April 15, 1947. W. J. WELLS 2,419,182

DISPENSING CARTON

Filed July 10, 1943

Fig. 1.

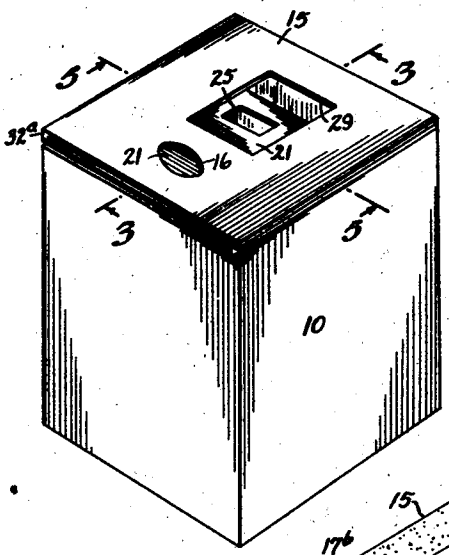
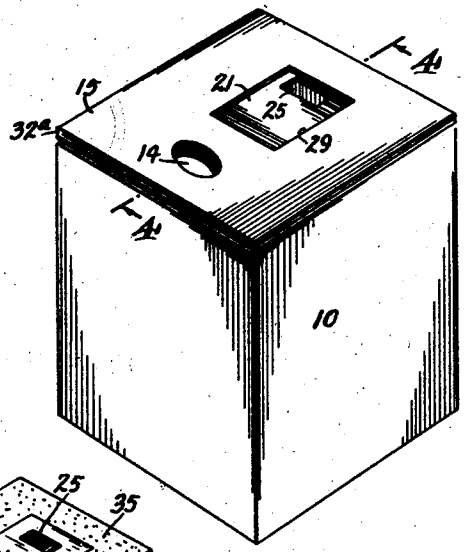



Fig. 2.



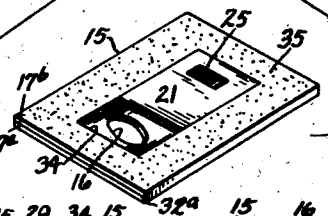




Fig. 4.

Fig. 3.

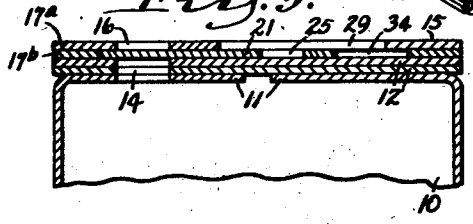



Fig. 4.

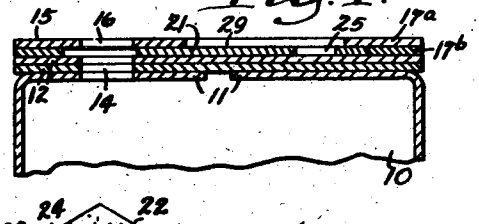



Fig. 9.

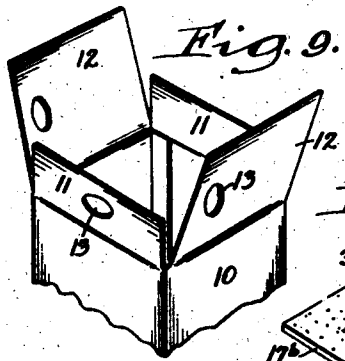



Fig. 6.

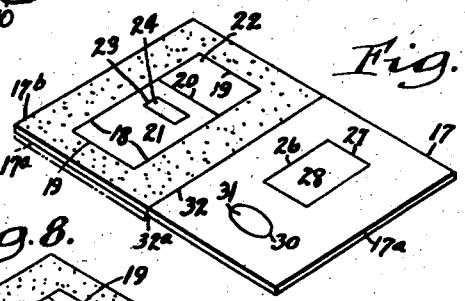



Fig. 8.

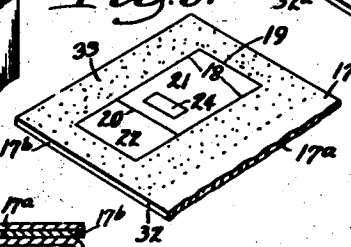
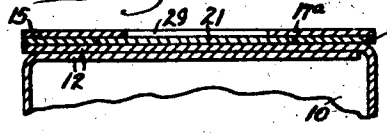



Fig. 5.




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Patented Apr. 15, 1947 2,419,182

# UNITED STATES PATENT OFFICE

2,419,182

## DISPENSING CARTON

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Application July 10, 1943, Serial No. 494,131

4 Claims. (Cl. 222—561)

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This invention relates to improvements in cartons ordinarily constructed of sheet fibrous material such as paper, cardboard, fiberboard, and the like, and more particularly to an improved closure or dispensing device for dispensing the carton contents. The invention relates furthermore to an improved method of constructing the carton closure.

It is a general object of the invention to provide an improved carton with closure therefor that can be economically manufactured in large quantities by automatic machinery, and that is adapted for manufacture from fibrous materials of the nature mentioned, thus avoiding the use of metals or other materials needed in the war effort.

A further object of the invention is to provide a dispensing closure for cartons, adapted to contain toilet powders or other comminuted materials, that is substantially sift-proof and, moreover, is capable of manufacture in large quantity production by a practical and economical method so as to assure tight substantially sift-proof joints.

A further object of the invention is to provide an improved carton closure that is substantially sift-proof and can be manufactured substantially as a separate unit, and then attached in operative position on the carton, as for example to one of the carton closure flaps.

Still another object of the invention is to provide an improved method of making dispensing closures for cartons of the class mentioned whereby the movable closure member is permitted to remain permanently in the position from which it is cut or otherwise severed from a sheet member, thus assuring a perfectly good and tight fit to make an anti-sift structure.

A further object of the invention is to provide an improved dispensing closure of the class mentioned that can be made from a single integral sheet or blank of cardboard or like material, scored to form certain of the operative parts and to provide for folding over of one part of the blank into overlapping relation with another part.

Other objects of the invention will be in part pointed out in the following detailed description of an illustrative but preferred embodiment of the invention, and will be in part obvious as the disclosure proceeds.

The invention accordingly comprises an article of manufacture having the features, properties, and relation of elements, and also comprises the several steps and the relation of one or more of such steps to each of the others, which will

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be exemplified in the article and method hereinafter disclosed, and the scope of the application of which will be indicated in the claims.

For a more comprehensive disclosure of the nature, objects and advantages of the invention, reference is had to the following detailed description of the preferred embodiment, and to the accompanying drawings in which:

Fig. 1 is a top perspective view of a carton embodying the invention;

Figure 2 is a view similar to Fig. 1 but showing the closure device in a different operative position;

Fig. 3 is an enlarged vertical section taken substantially on the line 3—3 of Fig. 1, looking in the direction of the arrows;

Fig. 4 is a similar vertical section taken substantially on the line 4—4 of Fig. 2, looking in the direction of the arrows;

Fig. 5 is a vertical section taken substantially on the line 5—5 of Fig. 1, looking in the direction of the arrows;

Fig. 6 is an enlarged perspective view of the blank of sheet material partially formed or processed for making the carton closure unit;

Fig. 7 is a bottom perspective view showing the closure unit substantially completed;

Fig. 8 is a perspective view showing the underside of the blank shown in Fig. 6; and

Fig. 9 is a fragmentary perspective view of the carton showing the closure flaps in open position.

Referring to the drawing for a description of the embodiment of the invention there shown, the carton 10 may be of any known preferred construction, but is preferably made of fibrous sheet material such as paper, cardboard, fiberboard, and the like, and may be of any desired shape and size. This carton may be used for containing powders of various kinds such as toilet powders or similar finely divided material that is ordinarily dispensed or sifted in small quantities from the carton as desired for use. The carton 10 as shown is provided with short closure flaps 11 connected for swinging movement to the upper edges of the opposite carton walls, and similar longer closure flaps 12 similarly connected to the other two opposite carton walls, the carton shown being substantially rectangular in horizontal section. These closure flaps are swung downwardly from the positions shown in Fig. 9 into overlapping relation to close the ends of the container substantially as shown in Figs. 3, 4 and 5. In their normal closing positions these overlapping flaps are firmly attached together

by glue or other adhesive so as to make a substantially sift-proof end wall for the carton. The opposite or bottom end of the carton may be closed in a desired manner.

As shown, the end closure flaps 11 and 12 are provided with openings 13 which align with each other when the flaps are in their normal closing position to provide a dispensing opening 14. This dispensing opening may be of any desired shape and size, either in the form of a single passageway as shown, or a plurality of spaced small openings may be provided for sifting very fine powder.

The closure for the carton embodies a closure unit 15 which may be applied in operative position on the top wall of the carton as, for example, by attaching it to one of the closure flaps 12 in any convenient manner, preferably by means of glue or other adhesive. The closure unit, as shown, has an opening 16 which normally aligns with the dispensing opening 14 of the carton end wall.

The closure unit 15 is particularly designed for economical construction from a single sheet or unitary blank 17 of sheet material, such as cardboard, fiberboard, or like fibrous material. This blank is preferably of somewhat better quality of stock than that used for the carton walls, a solid sulphite or manila board being found to be satisfactory for the purpose.

The blank 17, of appropriate size and shape for application to the desired carton, is processed or formed to complete the closure unit which may then be applied to the wall of the container and attached thereto as described. The blank 17, as shown in Fig. 6, is cut or scored along spaced substantially parallel longitudinal lines 18, and along transverse lines 19 and 20, the cuts or incisions extending substantially through the blank to substantially separate the inner parts of the blank forming a closure member 21 and an extension part 22. This separating of the closure member 21 and the extension 22 thereof from the surrounding parts of the blank may be accomplished in any well known manner as by die cutting, or cutting the material with a sharp cutting edge of a cutting tool so as to avoid removing any of the blank material at the cuts, and avoiding crushing or distorting the blank material along the cuts or incisions. Although the incisions 18, 19 and 20 extend substantially through the material of the blank 17, the severed closure member 21 and the part 22 are retained in their original position in the blank. The closure member 21 thus remains permanently in its original position in the blank, ordinarily not being removed during the process of manufacture, while the part 22 remains temporarily in position but is later removed and discarded.

It is noted that the blank incisions are preferably made with an appropriate implement, such as a sharp edge tool or die, so as not to crush or otherwise deform the fibers of the blank at the adjacent severed edges. Also, due to the character of the blank material used, there is some resiliency of the severed material so that, after the severing operation, the parts resume substantially their original condition at the adjacent severed edges, thus making the cut-out parts virtually the same size and shape as the openings formed by the cut-outs. This not only makes tight, sift-proof joints at the opposite longitudinal edges of the closure member, but assists in retaining the closure member in its original position in the blank after the severing operation and during further processing. Also, it will be noted



that the adjacent sides or walls of the incisions around the closure member 21 are substantial counter-parts and complementary with each other to make tight sift-proof joints, and also to provide sliding contact surfaces at the longitudinal edges of the closure member, whereby the latter is supported and guided in its longitudinal opening and closing movements.

At the time of making the incisions 18, 19 and 20, incisions 23 are also made within the closure member 21 so as to cut out the part 24 which may later be removed to form a handle or operating opening 25.

Also, the blank 17 is scored at the opposite side or area thereof from the closure 21 to form longitudinal incisions 26 and transverse incisions 27 to cut out the blank part 28, when removed, forms an operating access opening 29. Similarly an incision 30 is made in the blank to remove the section 31 so as to provide the dispensing opening 16 through this part of the blank. Also, preferably at the time that other incisions are made, the blank 17 is scored or cut to form the substantially straight incision 32 extending substantially across the blank midway between its opposite edges. This incision 32 extends only partly through the blank leaving an integral portion of the blank material, thus providing a hinge 32*a* upon which the blank can be folded along this line.

After the incisions have been made in the blank 17, as above described, this blank is folded on the hinge 32*a* so as to cause one half 17*a* of the blank to assume overlapping relation with the other half 17*b*, as shown in Figs. 6 and 7. These overlapping parts 17*a* and 17*b* are secured together as by means of a coating of adhesive 33 extending entirely around the marginal portion of the blank part 17*b* as shown in Fig. 8, thus firmly attaching the two sections of the blank together and making a tight sift-proof joint. This manner of attaching the blank sections 17*a* and 17*b* together without intervening space therebetween also provides a reinforced substantially solid laminated structure for the closure member or unit 15 which is thus sufficiently strong and rigid for application in the form of an independent member in operative position on the carton. When the parts are thus assembled, the cut-out parts at 22, 24, 28 and 31 formed by the incisions are removed entirely from the blank and discarded, or some or all of these parts may be earlier removed, if desired, but the part forming the closure member 21 remains in its original position in the blank. The removal of the part 28 provides the access opening 29 through which the handle or operating aperture 25 can be reached with the finger tip or with a pointed instrument for moving the closure member 21 into opening or closing positions. Thus the operating handle 25 lies at all times both in the open and closed positions of the closure member, wholly in the plane of the closure member 21 and wholly within the operating access opening 29. The operating handle is thus always positioned for convenient operative access while at the same time no parts thereof project above the upper surface of the closure unit which is thus free from objectionable projecting parts. The removal of the extension or part 22 provides a space 34 as shown in Fig. 7 so that the closure member 21 can be moved or slid longitudinally in the opening in the blank formed by cutting out the parts 21 and 22.

It will be noticed that the closure member 21 remains continuously in its original position in

the plane of the blank and at the opening formed by cutting out the parts of the blank. It will also be noticed that the closure member 21, in its normal closing position for closing the dispensing openings, is in the identical position that it originally occupied in the blank. Accordingly, the closure member 21 exactly fills the opening in which it is mounted, and tight, anti-sift joints at the edges thereof are assured. There is no danger that a closure member cut from some other blank can be inserted in operative position.

A preferred manner of removing the scored or cut-out sections 22, 24 and 28 of the blank is as follows: After the die cutting has been completed and the two opposite sections 17*a*, 17*b* of the blanks folded over on the hinge 32*a* and adhesively attached together, as above described and as indicated in the dot and dash lines in Fig. 6, the two sections 24 and 28 will simultaneously be forced out of their original positions by exerting pressure by any appropriate instrumentality upon the section 24, thus forcing out or removing both sections 24 and 28 at the same time. Thus not only is time saved in manufacture of the closure member or unit, but it is better adapted for manufacture by automatic machinery, and danger of accidentally knocking out the closure member 21 is materially decreased. When the folded blank sections 17*a*, 17*b* are superposed in overlapping relation as described, the removable cut-out section or closure member 21 is supported and steadied by the overlapping parts so as to be less likely to be accidentally displaced or knocked out when the remaining cut-out sections are being removed. When the blank is thus folded over it will be noted that the section 28 lies directly opposite and adjacent to the section 24 so that this removing operation can be easily accomplished. This removal of the section 28 leaves the access opening 29 in the blank directly adjacent to the die cut section 22 of the blank part 17*b*. The cut-out section or part 22 is then quickly and easily removed and separated from the blank by introducing an appropriate tool or instrumentality through the opening 29 and exerting pressure on the surface of the part 22 to remove it from its original position in the blank. This procedure permits the closure section 21 to remain continually in its original position in the blank, thus assuring a perfect fit of the closure 21 in the blank opening in which it moves into opening and closing positions. The die cut section 31 may be removed at any convenient time.

When the closure unit 15 has been fabricated as above described, it is coated with a band of adhesive 35 on its under surface and adhesively attached in operative position on the outer surface of the outer flap 12 of the carton. The adhesive 35 extends all the way around the margin of the closure unit so as to make a tight anti-sift joint. When the parts are thus assembled, it will be seen in Fig. 5 that the part 17*a* of the blank overlaps the outer marginal edges of the closure member 21 so as to provide a tight sliding fit for the opening and closing movements of the closure member. Due to the fact that the closure 21 is cut from the sheet or blank 17, it will be precisely the same thickness as the part 17*b*. By means of this arrangement tight joints at the upper and lower surfaces of the margins of the closure member 21 will be assured. Also, by virtue of this arrangement the sliding closure member 21 is frictionally held in open or closed positions, and looseness and accidental movements thereof are avoided.



Since certain changes in carrying out the above method, and certain modifications in the product which embody the invention may be made without departing from its scope, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

The invention having thus been fully described, the following is claimed:

1. In a dispensing closure for a carton, in combination, end closure flaps respectively connected to sides of the carton and turned inwardly into overlapping relation and attached together to form an end wall structure, a unitary dispensing closure member in the form of a separate structural unit and attached as a complete unit in operative position on the outside of said overlapping end closure flaps to form a dispensing device, said separate structural unit including a sheet member having a transverse weakened fold line on which it is folded to bring opposing sections thereof into overlapping superposed relation, attaching means attaching said sections together in their overlapping relation so as to form a substantially solid reinforced laminated structure for said closure member or unit, the first of said sheet sections having a closure mounting opening therethrough, a sheet closure member mounted in said mounting opening for movement into opening and closing positions and having an operating handle, said sheet closure member lying with its plane substantially in the plane of the said first sheet section, said mounting opening being larger than the sheet closure member to provide for movements of the latter into opening and closing positions wholly within the plane of the said first sheet section, the second of said sheet sections having an operating opening positioned in aligned relation with said closure mounting opening but having at least one of its edges inset from the adjacent edge of the mounting opening whereby the adjacent sheet material overlies a margin of said movable sheet closure member to form a retainer for the latter, said operating opening being positioned to provide operating access to said operating handle both in the open and closed positions of said sheet closure member.

2. A method of making a carton closure, including: making incisions substantially through a single integral sheet blank to cut out, within the blank bounds a plurality of cut-out sections of the blank including a closure member and a removable extension thereof, but permitting the cut-out closure member with its extension to remain in its original position in the blank, making second incisions substantially through the blank at a remote part thereof from said first mentioned incisions to cut out a further section of blank to form an operating access opening but permitting the said further cut-out section of blank to remain temporarily in its original position, folding said sheet blank along a transverse line intermediate said first and second incisions to bring one section of the folded blank into superposed overlapping relation with the second section thereof with certain of said cut-out sections substantially in superposed relation, knocking out said removable extension and said further cut-out blank section after said folded sections are superposed in overlapping relation to form operation space for said closure member and

to form an operating access opening for the closure member, and securing said folded sections of the blank together thus to form a complete separate closure unit adapted for attachment in operative position to a carton.

3. A method of making a carton closure, including: making incisions substantially through a single integral sheet blank to cut out, within the blank bounds a plurality of cut-out sections of the blank including a closure member, a handle forming section therefor and a removable extension thereof, but permitting certain of said cut-out sections to remain in original position in the blank, making second incisions substantially through the blank at a remote part thereof from said first mentioned incisions to cut out a further section of blank to form an operating access opening but permitting the said further cut-out section of blank to remain temporarily in its original position, weakening the blank along a transverse line intermediate said first and second incisions, folding said sheet blank along said weakened line to bring one sheet section of the folded blank into superposed overlapping relation with the second section thereof with certain of said cut-out sections thereof substantially in superposed relation, simultaneously knocking out certain of said superposed cut-out sections, securing said folded sections of the blank together thus to form a complete separate closure unit adapted for attachment in operative position to a carton, and attaching the unit thus formed in operative position on the wall of a carton.

4. In a dispensing closure for a carton, in combination, end closure flaps respectively connected to sides of the carton and turned inwardly into overlapping relation and attached together to form an end wall structure, a unitary dispensing closure member in the form of a separate structural unit and attached as a complete unit in operative position on the outside of said overlapping end closure flaps to form a dispensing device, said separate structural unit including a sheet member having a transverse weakened fold line on which it is folded to bring opposite sections thereof into overlapping superposed relation, attaching means attaching said sections together in their overlapping relation so as to form



a substantially solid reinforced laminated structure for said separate structural unit, the first of said sheet sections having a closure mounting opening there through, a sheet closure member mounted in said mounting opening for movement into opening and closing positions and having an operating handle lying wholly in the plane of said movable sheet closure member in both the open and closed positions thereof, said movable sheet closure member lying with its plane substantially in the plane of said first sheet section, said mounting opening being larger than the movable sheet closure to provide for movements of the latter into opening and closing positions wholly within the plane of said first sheet section, the second of said sheet sections having an operating opening positioned in aligned relation with said closure mounting opening but having at least one of its edges inset from the adjacent edge of the mounting opening whereby the adjacent sheet material overlies a margin of said movable sheet closure member to form a retainer for the latter, said operating handle lying wholly within said operating opening both in the open and closed positions of said movable sheet closure member and being exposed through said operating opening for operating access both in the open and closed positions of said movable sheet closure member.

WILLIAM J. WELLS.


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