Jan. 16, 1945. H. J. FISCHER 2,367,345

PROTECTIVE PACKAGE

Filed Nov. 12, 1941

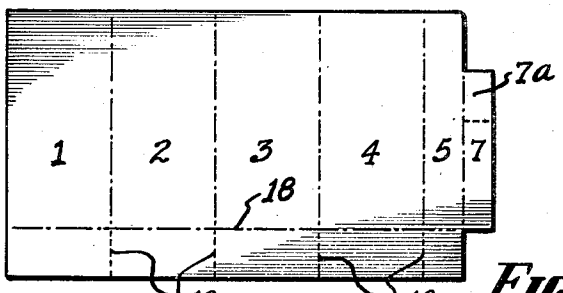

FIG. 1.

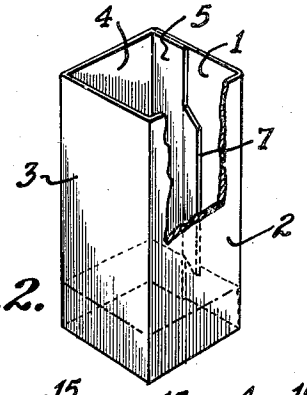

FIG. 2.

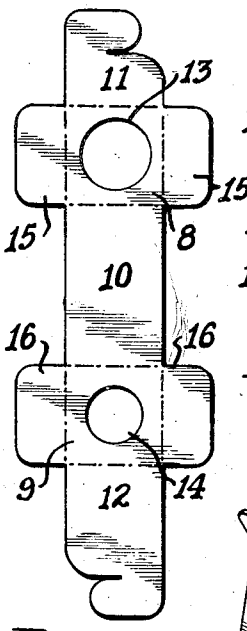

FIG. 3.

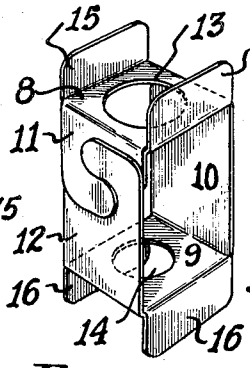

FIG. 4.

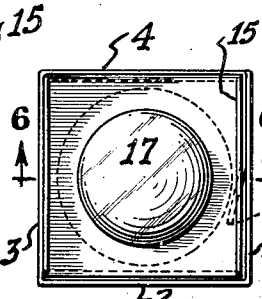

FIG. 5.

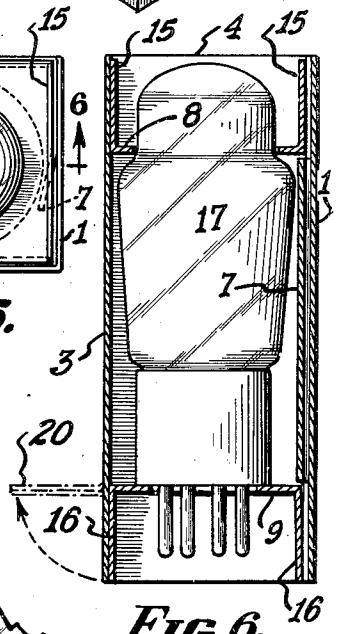

FIG. 6.

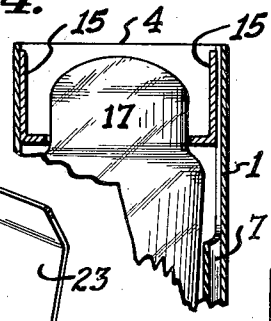

FIG. 7.

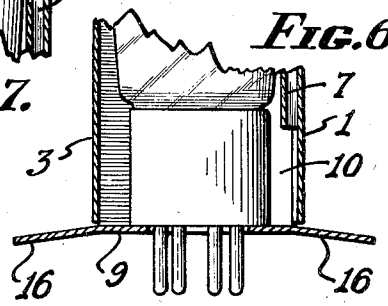

FIG. 8.

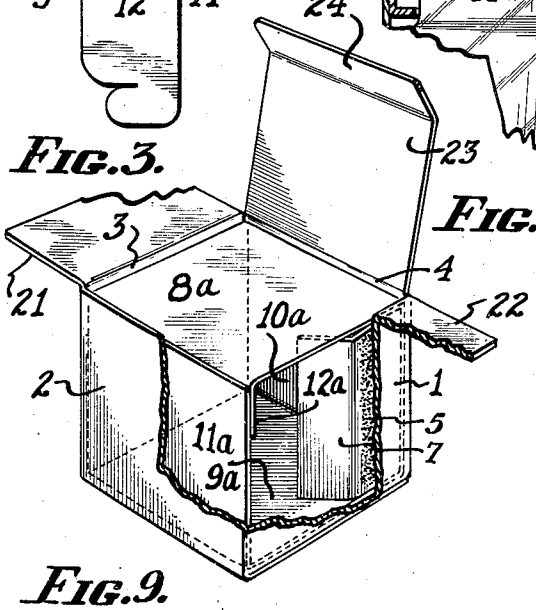

FIG. 9.

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UNITED STATES PATENT OFFICE

2,367,345

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Howard J. Fischer, Springfield Township, Hamilton County, Ohio, assignor to The Gardner-Richardson Company, Middletown, Ohio, a corporation of Ohio

Application November 12, 1941, Serial No. 418,778

11 Claims. (Cl. 229—6)

My invention has to do with a type of folding carton from which the contents cannot be removed without tearing or mutilating the carton in such a way that tampering is indicated. Thus the ultimate user of the merchandise is protected from products which have been used and repacked and from the purchase of gods of one origin in packages indicative of a different origin. More specifically, my invention has to do with cartons of a type comprising an outer tubular shell with or without end closure means and an inner retaining means for the merchandise, which, when filled and inserted in the shell cannot thereafter be wholly removed therefrom without the production of telltale indications.

Cartons of this general type are not themselves new; but the proposals hitherto made have contemplated complex constructions which are relatively difficult and expensive to make, which frequently require excess quantities of paper board, and which sometimes are inconvenient to assemble. The primary object of my invention is the provision of a structure which is simpler, more economical of board, less expensive to manufacture, and more convenient in use.

In some of the cartons hitherto suggested such as those intended for radio tubes or the like, provision has been made for a limited movement of the inner retaining means in the outer shell so that an end of the packed articles may be exposed for testing prior to sale. My invention is applicable to the provision of cartons having this capability.

Again, it is an object of my invention to provide a carton having means to permit testing or partial inspection of the contents without permitting complete removal of the contents unless the package be destroyed.

These and other objects of my invention which will be set forth hereinafter or will be apparent to one skilled in the art upon reading these specifications, I accomplish by that certain construction and arrangement of parts of which I shall now describe certain exemplary embodiments. Reference is made to the accompanying drawing wherein:

Figure 1 is a plan view of a blank for an outer carton member.

Figure 2 is a perspective view of the outer carton member in erected condition.

Figure 3 is a plan view of a blank for an inner carton member.

Figure 4 is a perspective view of the inner carton member in erected condition.

Figure 5 is an end view of a carton containing a radio tube.

Figure 6 is a sectional view thereof taken along the lines 6—6 of Figure 5.

Figure 7 is a fragmentary sectional view showing the interaction of parts.

Figure 8 is a fragmentary sectional view showing the action of means permitting testing of the contents.

Figure 9 is a perspective view, with parts cut away, of another form of my invention.

In Figure 1, I have shown a blank for an outer carton member, characterized by body walls 1, 2, 3 and 4 articulated together by the usual score lines. The wall 4 is shown as having articulated to it, by the usual score line, a glue flap 5. The carton body thus far described is of the common tubular type, such that by folding operations along a pair of the score lines, and by the application of adhesive, a flat tubular body may be formed with the glue flap 5 adhered to the wall 1. This flat tubular body may be erected or squared up as shown in Figure 2. It is an advantage of my invention that my outer carton members, and in some forms my inner carton members also, may be tubed and glued on the ordinary carton making machinery.

I have shown my blank in Figure 1 without end closures, and because of the inner carton member which will hereinafter be described, end closures on the outer carton member are not required for many uses. But end closures may be provided by forming seal-end or tuck end closure flaps of any of the known types on the ends of the body walls, as will readily be understood. A set of tuck-end flaps is illustrated in Figure 9 of the drawing.

The principal objects of my invention are simply and inexpensively achieved by articulating to the glue flap 5 a glue flap extension 7, by means of a score line as shown, and by causing this glue flap extension to interact with the inner carton member as will hereinafter be explained. The width of the glue flap extension may be widely varied, and may be increased to nearly the difference in width of the glue flap and the wall 1, if desired. In length, the glue flap extension may be equal to the interspacing of the end walls of the inner carton member, or where some permissive movement of the inner carton member in the outer carton member is desired, its length may be less, as will hereinafter be explained.

The inner carton member may take a variety

of forms, but in general will comprise end walls which may form the end walls of the finished package, and a pair of connecting side walls which in use will parallel the walls 2 and 4 of the carton outer member. One form of inner member is shown in Figure 3, and comprises end walls 8 and 9, each articulated by a score line to an intermediate side wall 10, and each having articulated to it by a score line, a member 11 or 12 designed to form part of the opposite side wall, and having interlocking means as shown, or other suitable attachment means whereby the inner member may be folded about the contents for the carton, and formed into a tube. For some sorts of contents, as for example radio tubes or incandescent bulbs, it may be desired to provide perforations 13 and 14 in the end walls of the inner carton member, for the top portion and for the base or contact prongs of the lamp or tube. Also for such articles it is frequently desired to have the end walls of the inner carton member lie inwardly of the ends of the outer carton, as shown in Figure 6, in which event guide flaps 15 may advantageously be articulated to end wall 8 and guide flaps 16 to end wall 9, by suitable score lines. The inner carton member is shown in erected form in Figure 4.

In Figure 9 I have shown another modification of the inner carton member in that it is in the form of an adhesively secured tube. The end walls 8*a* and 9*a* are connected by an intermediate wall 10*a*. A complete wall 11*a* is articulated to the end wall 9*a*, and the end wall 8*a* bears a glue flap 12*a*. This type of inner carton member may be folded and glued in flat tubular form on the ordinary carton folding and gluing machinery.

In my carton, when the sealing flap extension 7 is bent slightly inwardly as shown in Figure 2, its resilience tends to maintain its position. When the inner carton member has the contents placed within it, and is inserted into the outer carton member, the glue flap extension 7 may be temporarily pressed back so that it lies against the wall 1 or the glue flap 5, to allow one of the end walls of the inner carton member to pass it. But if the inner carton member is properly inserted, with its side walls 10 and 11, 12 parallel to and lying along the walls 2 and 4 of the outer carton member, as soon as the inner carton member attains its proper position, the glue flap extension 7 will again spring inwardly as far as the contents of the box will permit, and will lie between the end walls 8 and 9 of the inner carton member. This relationship is shown in Figures 5 and 6, where a radio tube 17 is indicated within the inner carton member, its respective end portions extending through the perforations 13 and 14.

If the length of the sealing flap extension 7 is approximately equal to the interspacing between the end walls 8 and 9 of the inner carton member, the inner carton member can not be moved in either direction without tearing and destruction either of the glue flap extension 7 or of some portion of the inner carton member. The contents thus cannot be removed from the carton and used, and thereafter replaced therein and sold, without the carton itself showing that it has been tampered with. It may, however, be desirable to permit the testing of the contents of the carton without their removal. It will be noticed in Figure 6 that the contact prongs of the radio tube extend below the wall 9. In order to make them available for testing purposes, I may provide in the blank for the outer carton member a line of score 18, common to all of the walls and the sealing flap and located approximately in the plane of the wall 9 when the package is assembled as in Figure 6. The prolongations of the score lines articulating the walls of the outer carton member, where they extend beyond the score line 18, may be made as lines of weakening 19, such as lines of minute perforations. When it is desired to test the contents of the carton, the outer carton member may be severed or split along these lines up to the score line 18. When this has been done, the end portions of the walls of the outer carton member may be bent outwardly as shown in dotted lines at 20 in Figure 6. The guide flaps 16 may likewise be bent outwardly as shown. Thus access is given to the contact prongs of the radio tube as will be clear.

Instead of providing for access or testing in this way, I may merely provide for a limited movement of the inner carton member in the outer carton member—not such a movement as would permit removal of the contents, but a sufficient movement, say, to bring the wall 9 down approximately to the lower end of the outer carton member. This is accomplished merely by shortening the length of the glue flap extension 7, say by removing the portion marked 7*a* in Figure 1. Such a structure and its method of operation is shown in Figures 7 and 8. By depressing the inner carton member so that the end wall 9 comes about to the level of the end of the outer carton member, the guide flaps 16 may be bent back, and the tube tested. Yet it is still not possible to remove, reuse, and replace the contents of the carton. After the testing of the contents, the inner carton member and tube may be raised to their original position.

In Figure 9 I have shown a general utility carton for use under circumstances where it is essential that the purchaser know that the carton contains its original contents, and where positive indication of tampering is required. I have already described the inner carton member shown in this figure. The outer carton member has walls, a sealing flap and a sealing flap extension similar to that shown in Figure 1, excepting for size and shape, which may be varied as desired. I have indicated an end closure on the outer carton member, comprising flaps 21 and 22 articulated respectively to walls 3 and 1, and a flap 23 which has a tuck end 24, articulated to wall 4. The other end of the carton body may have a similar closure, a seal-end closure, or any other suitable closure.

Wide modifications may be made in the construction, dimensions and mode of use of the elements which I have described. By way of exemple, if the glue flap extension 7 is no wider than the glue flap 5, it need not be bent entirely over on the glue flap 5 prior to the insertion of the inner carton member. The contents of the carton will then usually prevent the glue flap extension from returning to a position at an obtuse angle to the glue flap 5. This makes it more difficult to tamper with the carton for the improper removal of its contents because an instrument cannot readily be used to depress the glue flap extension 7. The glue flap extension 7 may be configured as desired, or may be formed in a plurality of articulated sections. It also may if desired be made to coact with other parts of the inner carton member than or in addition to the walls 8 and 9, such as extensions on the wall 10.

Having thus described my invention, what I

claim as new and desire to secure by Letters Patent is:

1. In a package, the combination of an outer tubular shell comprising articulated walls, a glue flap of lesser width than the wall to which it is secured, articulated to one of the walls and adhesively secured to another of the walls, and an extension on said glue flap, extending inwardly of said tubular shell, and an inner member adapted to retain the contents of said package, and insertable in said tubular shell, said inner member having means for engagement with said glue flap extension, whereby said inner member is retained within said tubular shell.

2. In a package, the combination of an outer tubular shell comprising articulated walls, a glue flap of lesser width than the wall to which it is secured, articulated to one of the walls and adhesively secured to another of the walls, and an extension on said glue flap, extending inwardly of said tubular shell, and an inner member adapted to retain the contents of said package, and insertable in said tubular shell, said inner member having means for engagement with said glue flap extension, whereby said inner member is retained within said tubular shell, said glue flap extension being of such length as to permit substantially no movement of said inner member within said tubular shell.

3. In a package, the combination of an outer tubular shell comprising articulated walls, a glue flap of lesser width than the wall to which it is secured, articulated to one of the walls and adhesively secured to another of the walls, and an extension on said glue flap, extending inwardly of said tubular shell, and an inner member adapted to retain the contents of said package, and insertable in said tubular shell, said inner member having means for engagement with said glue flap extension, whereby said inner member is retained within said tubular shell, said glue flap extension being of such length as to permit a limited movement of said inner member within said outer shell, but insufficient movement to permit withdrawal of said inner member.

4. In a package, the combination of an outer tubular shell comprising articulated walls, a glue flap of lesser width than the wall to which it is secured, articulated to one of the walls and adhesively secured to another of the walls, and an extension on said glue flap, extending inwardly of said tubular shell, and an inner member adapted to retain the contents of said package, and insertable in said tubular shell, said inner member having means for engagement with said glue flap extension, whereby said inner member is retained within said tubular shell, said inner member being a tubular shell having end walls and one opposed pair of intermediate side walls, said glue flap extension adapted to engage between said end walls.

5. In a package, the combination of an outer tubular shell comprising articulated walls, a glue flap of lesser width than the wall to which it is secured articulated to one of the walls and adhesively secured to another of the walls, and an extension on said glue flap, extending inwardly of said tubular shell, and an inner member adapted to retain the contents of said package, and insertable in said tubular shell, said inner member having means for engagement with said glue flap extension, whereby said inner member is retained within said tubular shell, said inner member being a tubular shell having end walls and one opposed pair of intermediate side walls, said glue flap extension adapted to engage between said end walls, said intermediate side walls being less in length than the length of the walls of said outer tubular shell, and said end walls having guide flaps thereon.

6. In a package, the combination of an outer tubular shell comprising articulated walls, a glue flap of lesser width than the wall to which it is secured, articulated to one of the walls and adhesively secured to another of the walls, and an extension on said glue flap, extending inwardly of said tubular shell, and an inner member adapted to retain the contents of said package, and insertable in said tubular shell, said inner member having means for engagement with said glue flap extension, whereby said inner member is retained within said tubular shell, said inner member being a tubular shell having end walls and one opposed pair of intermediate side walls, said glue flap extension adapted to engage between said end walls, said intermediate side walls being less in length than the length of the walls of said outer tubular shell, and said end walls having guide flaps thereon, one of said end walls at least having a perforation through which a portion of the contents of said carton may extend, the length of said sealing flap extension being such as to prevent substantially any movement of said inner tubular member within said outer tubular member, and having such position as to locate the inner tubular member within the outer tubular member, with the end walls of the inner tubular member spaced from the ends of the outer tubular member, the lines of articulation between the walls of the outer tubular member being weakened at one end to permit bending back a portion of said walls to give access to a portion of said contents extending through said perforation.

7. In a package, the combination of an outer tubular shell comprising articulated walls, a glue flap of lesser width than the wall to which it is secured, articulated to one of the walls and adhesively secured to another of the walls, an extension on said glue flap, extending inwardly of said tubular shell, and an inner member adapted to retain the contents of said package, and insertable in said tubular shell, said inner member having means for engagement with said glue flap extension, whereby said inner member is retained within said tubular shell, said inner member being a tubular shell having end walls and one opposed pair of intermediate side walls, said glue flap extension adapted to engage between said end walls, said intermediate side walls being less in length than the length of the walls of said outer tubular shell, and said end walls having guide flaps thereon, one of said end walls at least having a perforation therein through which a portion of the contents of said package may extend, the length of said glue flap extension being such as to permit such movement only of said inner tubular member as will bring one of its end walls substantially to the end of the end walls of said outer tubular member.

8. In a package, an outer tubular member comprising body walls, a glue flap of lesser width than the wall to which it is secured, articulated to one of the walls and attached to another, an extension on said glue flap, projecting inwardly of said tubular member, and a second tubular member adapted to retain the contents of said package and comprising a tubular member having end walls and side walls, said glue flap extension, when said inner tubular member is inserted in said outer tubular member adapted to lie be-

tween the end walls of said inner tubular member and prevent withdrawal thereof.

9. In a package, an outer tubular member comprising body walls, a glue flap of lesser width than the wall to which it is secured, articulated to one of the walls and attached to another, and an extension on said glue flap, projecting inwardly of said tubular member, and a second tubular member adapted to retain the contents of said package, and comprising a tubular member having end walls and side walls, said glue flap extension, when said inner tubular member is inserted in said outer tubular member adapted to lie between the end walls of said inner tubular member and prevent withdrawal thereof, said outer tubular member having closure flaps on at least one end thereof.

10. In a package, an outer tubular member comprising body walls, a glue flap of lesser width than the wall to which it is secured, articulated to one of the walls and attached to another, an extension on said glue flap projecting inwardly of said tubular member, and a second tubular member adapted to retain the contents of said package, and comprising a tubular member having end walls and side walls, said glue flap extension when said inner tubular member is inserted in said outer tubular member adapted to lie between the side walls of said inner tubular member and prevent withdrawal thereof.

11. In a package, an outer tubular member comprising body walls, a glue flap of lesser width than the wall to which it is secured, articulated to one of the walls and attached to another, an extension on said glue flap projecting inwardly of said tubular member, and an inner member adapted to retain the contents of said package, and insertable in said tubular shell, said inner member having means for engagement with said glue flap extension, whereby said inner member is retained within said outer tubular member, said inner member being a tubular member having end walls and one opposed pair of intermediate side walls, said glue flap extension adapted to lie between said end walls and said side walls.

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