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CARTON WITH LOCKING SLIDE AND TRAY

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Fig. 1.

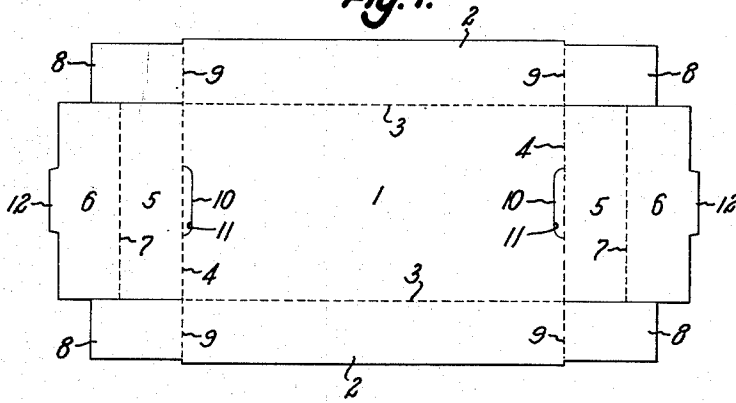


Fig. 2.

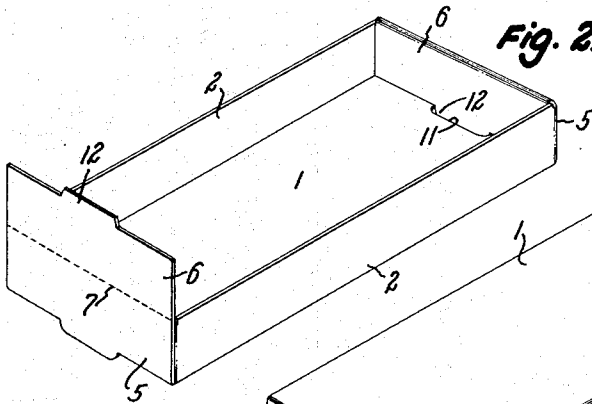


Fig. 3.

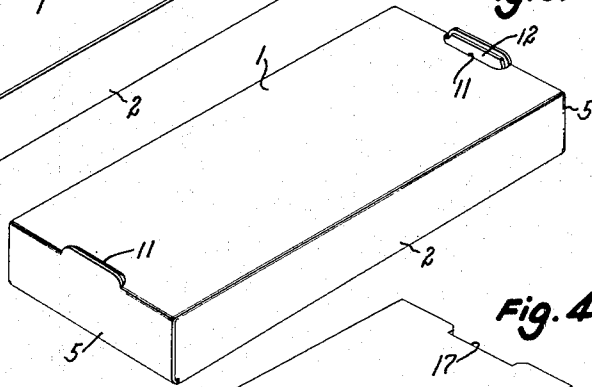


Fig. 4.

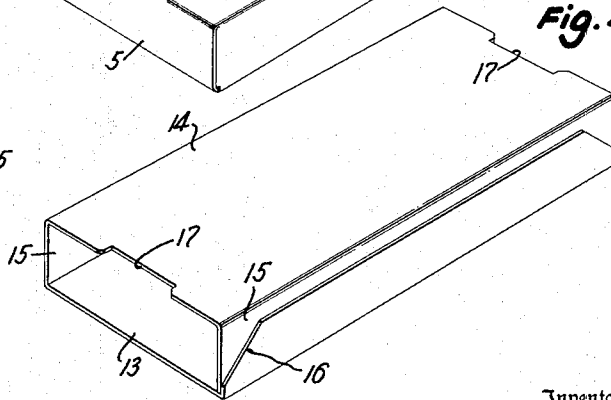
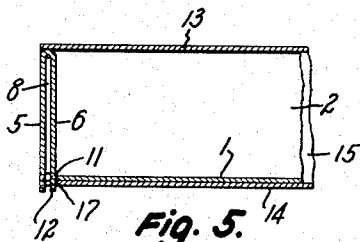


Fig. 5.



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CARTON WITH LOCKING SLIDE AND TRAY

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2 Claims. (Cl. 229-19)

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This invention relates to paperboard cartons, and particularly to cartons of the slide and tray type the parts of which function in telescoping relation.

In such cartons, especially when the packaged goods are relatively heavy or of a shiftable nature, the tray and slide are apt to shift relatively, thus making likely spilling or loss of the contents.

One object of the present invention is to provide a carton of the slide and tray type with means for normally locking the loaded tray in appropriate enclosed condition within the slide but which may readily be disengaged to permit relative shifting of the slide and tray to give access to the contents.

Another object of the invention is to provide such locking means as integral parts of the blanks from which the slide and tray are formed and which will assume their proper functional positions upon formation of the blanks to usable condition.

A further object is to provide a tray, for the tray and slide combination of the invention, formed from a paperboard blank of more or less conventional form, but so modified as to provide in the assembled tray an element of the locking means of the invention.

The invention comprises a carton of slide and tray form, including, in the structure of the tray, opposite end walls each comprising an outer member and an inner member in folded relation and between which securing flaps of the side walls are embraced to hold the side walls in proper set-up condition, the inner members of the end walls having upon their free edges offstanding locking tabs for extension through openings in the tray bottom to maintain set-up assembly of the tray, the said locking tabs projecting below the outer surface of the tray bottom and serving for locking engagement with the end edges of the bottom of the slide when the tray is enclosed therein to maintain desired assembled relation of the slide and tray, but being disengageable therefrom to permit withdrawal, or partial withdrawal, of the tray from the slide, and the said end edges of the slide bottom preferably being notched to accommodate the locking tabs with the slide and tray in end-and-end alignment, all as will be explained hereinafter more fully and finally claimed.

In the accompanying drawing illustrating the invention, in the several figures of which like parts are similarly designated,

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Fig. 1 is a plan view of the blank from which the tray of the carton of the invention is formed,

Fig. 2 is a top perspective view of a tray partially set up from the blank of Fig. 1,

Fig. 3 is a bottom perspective view of the completely set up tray,

Fig. 4 is a bottom perspective view of the slide of the carton, and

Fig. 5 is an enlarged fragmentary longitudinal sectional view of the assembled slide and tray, showing the cooperation of the locking elements in accordance with the invention.

Having reference to Fig. 1, it will be seen that the blank for the tray of the carton is somewhat conventional in form as respects the nature and arrangement of its major parts, and as shown in Figs. 2 and 3 these parts are assembled in a more or less conventional manner.

Also, having reference to Fig. 4, it will be apparent that the slide is of rather conventional form, being merely the usual tubular sleeve from which the tray may be assembled, and from which it may be removed, or partially removed, by simple endwise sliding action.

It is in the details of the tray, and preferably of the slide also, that the locking means of the invention reside, as will now be pointed out.

The tray blank, Fig. 1, comprises a sheet of paperboard material provided with appropriate cuts and folding scores to form a bottom 1 with side walls 2 integral therewith and defined therefrom by folding scores 3, and similar end walls defined from the bottom by folding scores 4 and each comprising, when the tray is set up, an outer member 5 and an inner member 6 separated by the folding scores 7. The side walls are provided with securing flaps 8 bendable upon folding scores 9.

At the ends of the bottom 1 and terminating at the folding scores 4 between it and the end walls, are cuts 10 which, when the end walls are in set-up condition, provide openings or slots 11 for the reception of locking tabs 12 offstanding from the free edges of the inner members 6 of the end walls and adapted to maintain the set-up assembly of the tray in a known manner.

However, as distinguished from the usual locking tabs of this general character and combination of parts, those formed in accordance with the invention are of a length or projection sufficient not only to engage the walls of the openings 11 but to extend therethrough and project beneath the bottom of the tray for engagement with the end edges of the slide bottom, as will later appear.

In assembling the tray the usual procedure is followed in that the side walls 2 are bent upwardly at right angles to the bottom 1 upon their folding scores 3, and their securing flaps 9 are bent inwardly upon their folding scores 9 so that they overlie the bottom in substantial alignment with the end folding scores 4. Then the end walls are bent upwardly upon their folding scores 4 and the inner members 6 thereof bent downwardly upon the intermediate folding scores 7 so that the securing flaps 8 are embraced between the outer and inner members 5 and 6 of the end walls, and the locking tabs 12 are snapped into the openings 11 to maintain this assembly, all as indicated in Figs. 2 and 3.

The slide is, as hereinbefore mentioned, of rather conventional form, being a rectangular tube having a top 13, bottom 14 and sides 15, one of which sides comprises the conventional glue lap 16. In order, however, that the slide and tray, when assembled together, may be in end-and-end alignment, the end edges of the slide bottom 14 are provided with notches 17 to accommodate the locking tabs 12 of the tray end walls and the down-turned portions of the bottom of the tray where the cuts 10 are located to produce the openings 11.

As shown in Fig. 5, when the tray and slide are assembled together the locking tabs 12 of the tray will snap over the end edges of the slide bottom and into the notches 17 therein, thus preventing accidental or inadvertent separation of the slide and tray. However, when it is desired to open the carton, for access to the contents of the tray, this may be accomplished merely by exerting pressure simultaneously against both side walls of the slide, which will serve to distort the bottom downwardly sufficiently to permit disengagement of the locking tab at one end while the tray is pushed toward the opposite end to open it.

It will be apparent that, in accordance with the invention, the locking tabs 12, which in themselves as elements of the tray assembly means are not novel, assume a double function made possible by their increased projection and the association of the tray with a slide to provide an enclosed carton, namely to maintain assembled condition of the parts of the tray and to lock the tray in enclosed condition within the slide, and this is believed to be novel.

Various changes and modifications are believed to be within the principle of the invention and the scope of the following claims:

What I claim is:

1. In a carton of slide and tray type, an open-top tray comprising a bottom, side walls and end walls connected with said bottom, each of said end walls comprising an outer member and an inner member relatively foldable into substantially juxtaposed relation to provide a double wall construction for each of said end walls, each of said inner members having a free edge provided with an offstanding locking tab, and said bottom being provided with openings adjacent to said outer end wall members for the reception and retention of said locking tabs in position to hold said inner and outer end wall members in substantially juxtaposed assembled relation, a slide of open-ended tubular form adapted to embrace in juxtaposed engagement the side walls, bottom and open top edges of said tray and with which the tray may be assembled and disassembled by telescoping sliding movement endwise of said open ends, the tabs of the inner end wall members of the tray offstanding from said inner members to an extent greater than the thickness of the bottom and sufficient therefore to insure their projection beyond the outer surface of said bottom when the end walls are assembled, said tabs serving to lockingly engage the edges of the opposite ends of the wall of the slide juxtaposed to the tray bottom when the tray and slide are in fully assembled telescoped relation to thereby prevent inadvertent relative endwise movement of the tray and slide.

2. A carton as claimed in claim 1, in which the end edges of the wall of the slide juxtaposed to said tray bottom are notched to accommodate the said locking tabs within the overall length of the slide.

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