July 14, 1936. G. W. POPPE 2,047,745

MULTIPLE COMPARTMENT BAG AND PROCESS OF MAKING SAME

Filed June 2, 1934 3 Sheets-Sheet 1

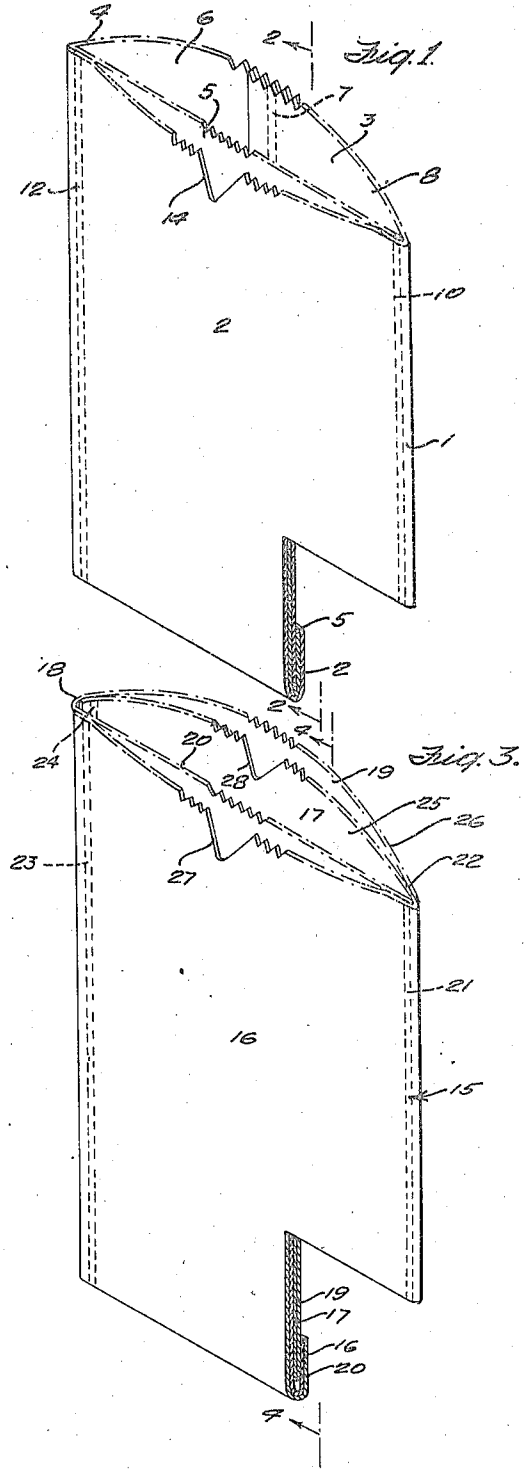


Fig. 1.

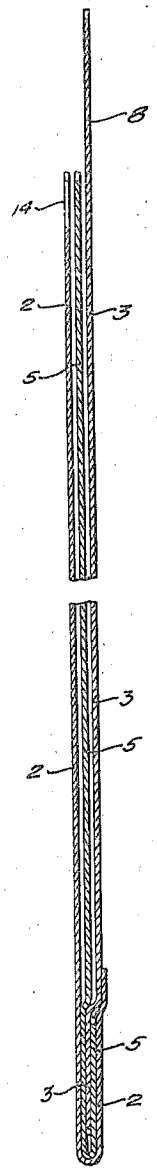


Fig. 2.

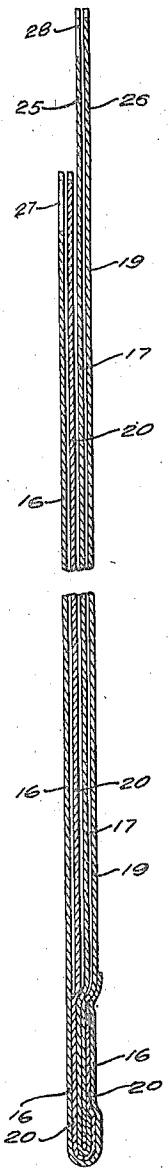


Fig. 4.

Fig. 3.

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Fig. 5.

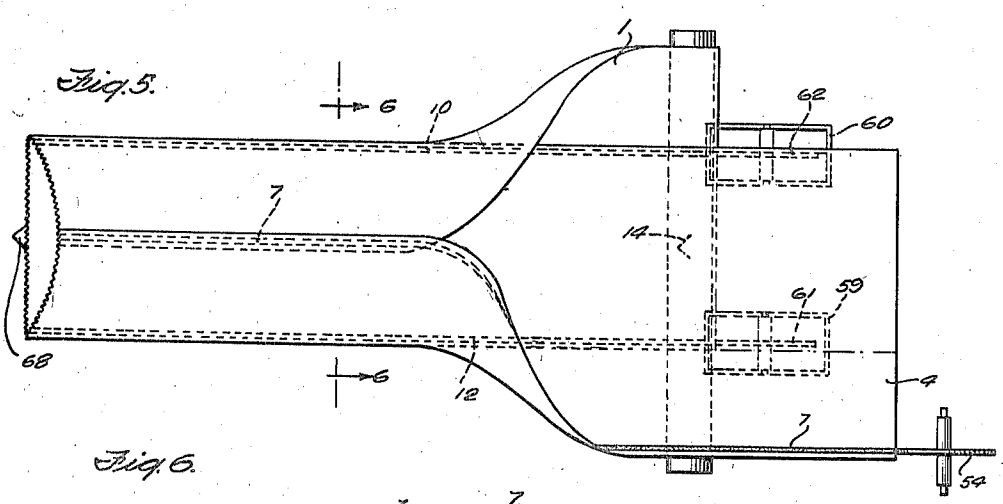


Fig. 6.

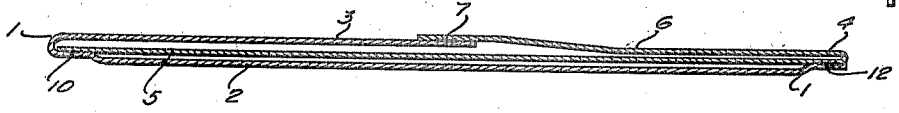


Fig. 7.

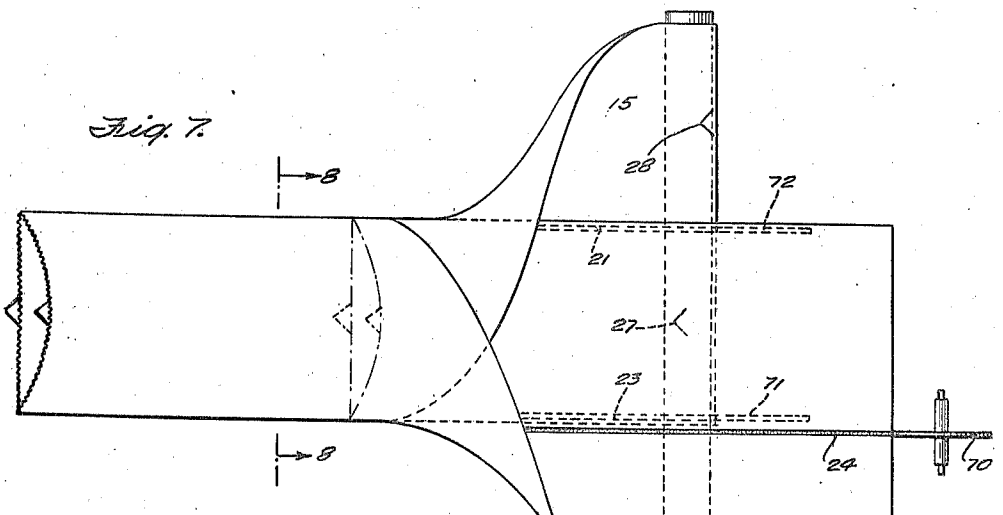
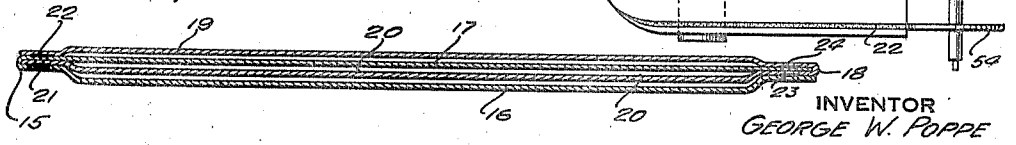


Fig. 8.



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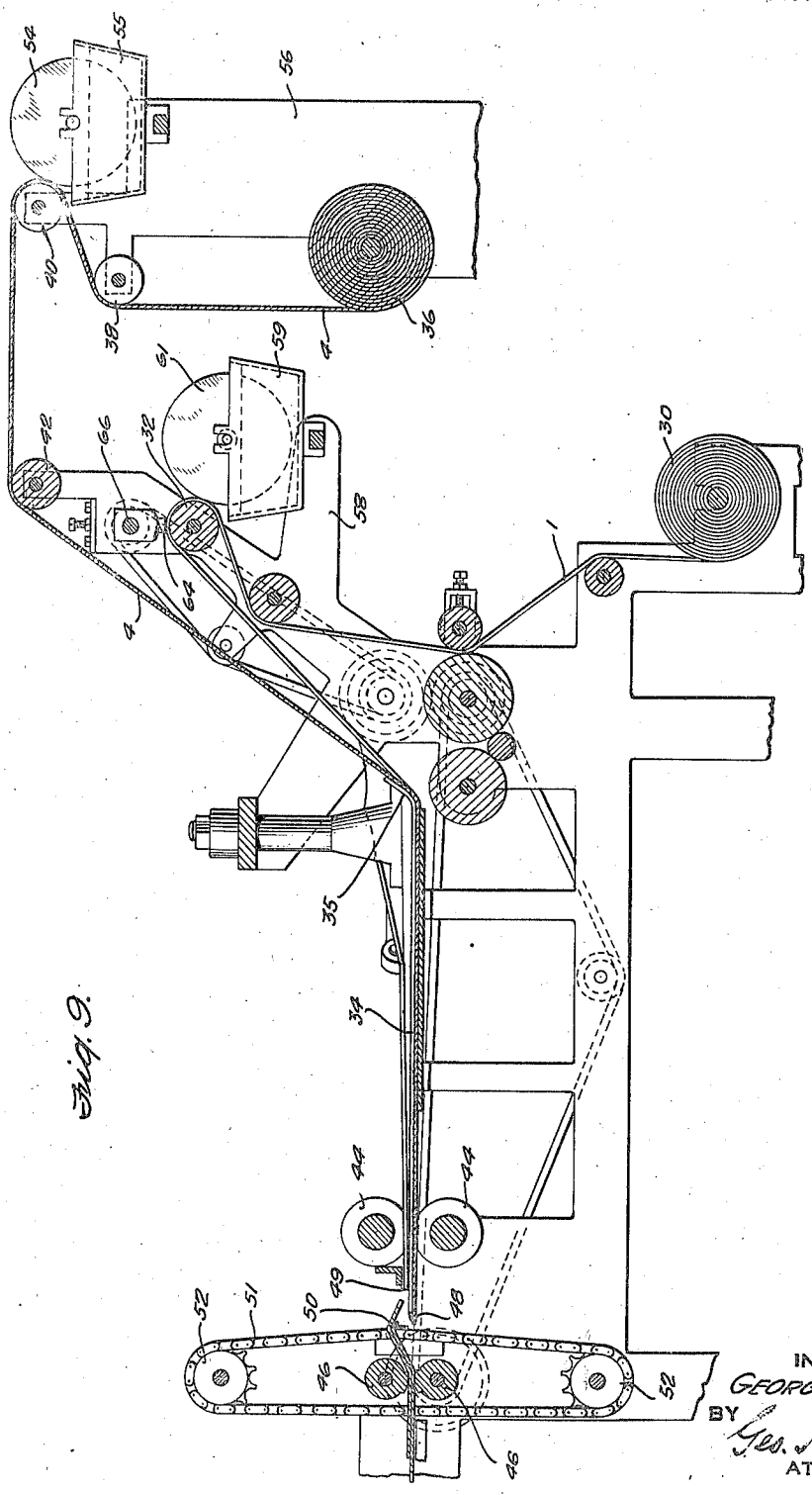


Fig. 9.

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Patented July 14, 1936 2,047,745

UNITED STATES PATENT OFFICE

2,047,745

MULTIPLE COMPARTMENT BAG AND PROCESS OF MAKING SAME

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Application June 2, 1934, Serial No. 728,636

9 Claims. (Cl. 229—56)

This invention relates to compartment bags and to the process of making the same. One of its objects is the production of a bag of this kind having such characteristics that it is convenient to gain access to its several compartments but which nevertheless may be made rapidly and conveniently on an ordinary bag machine and with the use of a minimum amount of paper.

In my application Serial No. 716,771, filed March 22, 1934, I have disclosed a compartment bag in which a single web of paper is so folded as to form a compartment bag. A feature of the present invention resides in a compartment bag in which two webs of paper are used and these are interfolded and the edges of each web are pasted to the other web.

Another feature of the invention resides in the process by which the interfolding or pasting of the webs is accomplished to adapt the process for use on an ordinary bag machine with but few changes or additions to the latter.

A further feature resides in the simplicity of the means by which access to the several compartments of the bag may be had and at the same time to carry out the process at a high speed.

Further features and advantages will become apparent from the following description and claims when taken in connection with the accompanying drawings in which:

Figure 1 is a perspective view of one form of my compartment bag, the lower corner being broken away to better show the folding of the bottom;

Figure 2 is a section, somewhat enlarged, on the line 2—2 of Figure 1;

Figure 3 is a view similar to Figure 1 showing a bag having three compartments instead of two;

Figure 4 is a section, somewhat enlarged, on the line 4—4, Figure 3;

Figure 5 is a more or less diagrammatic view illustrating the process by which the bag tube which is to form the bag shown in Figure 1 is produced;

Figure 6 is a section, somewhat enlarged, along the line 6—6, Figure 5;

Figure 7 is a view similar to Figure 5 showing the process by which the tube which is to form the bag shown in Figure 3 is produced;

Figure 8 is a section, somewhat enlarged, on the line 8—8, Figure 7; and

Figure 9 is a longitudinal section through an ordinary bag machine with some additional parts to enable my bag to be conveniently and rapidly made.

The bag shown in Figure 1 consists of a web, indicated generally by the reference character 1, folded in such a manner as to form the front wall 2 of the bag. A portion of the web, indicated at 3, forms part of the rear wall of the bag. A second web, indicated generally by the reference character 4, is folded inside of the web 1 and its panel 5 forms one of the plies of the front bag wall and also acts as a partition to divide the bag into compartments. A portion of this web is folded back and forms a portion of the rear wall indicated at 6. A line of paste 7 secures the two portions 3 and 6 together, these forming the rear bag wall, which rear wall is prolonged into a closing flap indicated by 8. The right-hand edge of the ply 5 of the web 4 is pasted to the web 1 along a line indicated by 10 at the right-hand edge of the bag. The edge of the front wall 2 of the web 1 is pasted to the web 4 near the left-hand edge of the bag as indicated at 12. The bottom of the bag is folded back onto the rear wall and pasted to it as clearly indicated in Figure 2. Thus the completed bag comprises a two-ply front wall and a single-ply rear or seam wall. The closing flap which is the prolongation of the seam wall projects beyond both plies of the front wall.

In my application above referred to wherein a single web of paper was folded to form a compartment bag the method therein described necessitated a double-ply rear wall with a double-ply closing flap. The bag of the present invention consists of a single-ply closing flap and at the same time provides a bag having two compartments.

In order that access may be had to the compartment defined by the wall 2 and the partition 5, I preferably form a notch or recess 14 in the upper edge of the wall 2.

The bag shown in Figure 3 is a three-compartment bag and like the bag shown in Figure 1 also comprises two interfolded webs of paper, but in the Figure 3 construction the free edges of the webs are overlapped to a greater extent, thereby forming three compartments. As shown, the web indicated generally by the reference character 15 is so folded that one portion of it forms a panel 16 constituting one ply of the front wall of the bag while the other portion forms a panel 17 constituting one ply of the rear wall of the bag. The second web 18 comprises a panel 19 which constitutes one ply of the rear wall of the bag and a panel 20 which constitutes the second ply of the front wall of

the bag, said web 18 being so folded as to include the panel 17 within the fold.

The right-hand edge of the panel 20 is pasted at 21 to the web 15 near the right-hand edge of the bag. The rear panel 19 is pasted to the web 15 at 22 along the same edge. At the left side of the bag the panel 16 constituting one ply of the front wall of the bag is secured to the web 18 along the left-hand edge of the bag as shown in Figure 3, by a line of paste indicated by the reference character 23, while the panel 17 is secured to the web 18 at the left-hand edge of the bag by a line of paste 24.

In this type of bag the closing flap is indicated by the reference characters 25—26 and it is a prolongation of the double-ply rear wall of the bag and said flap therefore likewise consists of two plies. The front wall of the bag also consists of two plies and these two plies, as indicated in Figures 3 and 4, are folded back and secured to the rear wall. Thus there is produced a compartment bag having a two-ply front wall and a two-ply rear wall. The bottom closing flap is a prolongation of the front wall and the top closing flap is a prolongation of the rear wall, the flap extending beyond the top edges of the plies of the front wall.

In order that access may readily be had to the several compartments, the front ply 16 is notched at 27 and the ply 17 is notched at 28.

The present invention not only relates to an improved bag of the compartment type but to an improved process by which such a bag may be produced on a commercial scale and on an ordinary bag machine.

A feature which distinguishes bag machines from envelope machines resides in the fact that in a bag machine a web of paper is first folded about a former to form a bag tube, which tube is subsequently severed into bag lengths. By such a method of folding and cutting there is no waste of paper. Furthermore, the speed at which the bag machine may be run is considerably greater than that which is possible of attaining in an envelope machine. I have therefore illustrated my improved process as applied to a bag machine as best fulfilling commercial requirements in quantity of production and economy in the use of paper.

I will first describe the process by referring to Figures 5, 6 and 9, which process produces the bag shown in Figure 1.

Referring to Figures 5 and 9, the web 1 is fed from a supply roll 30 and after passing over suitable guide rollers is led to a roller 32 which reverses its direction of movement, the web then passing underneath a former 34. The web 4 is fed from a supply roll 36 and after passing over suitable guide rollers 38, 40 and 42 is fed on top of the web 1 and in overlapped relation thereto as clearly indicated in Figure 5. Thus overlapped, both webs are fed underneath the former about which they are wrapped to form a bag tube. The folded tube then passes under feed rollers 44 which are of the usual type found in bag machines well-known in the art. After passing the feed rollers, the tube is severed into bag lengths by the usual mechanism found in bag machines. This mechanism includes the so-called pinch bars 46 which act to slightly retard the tube, thereby causing a slack to be formed for the purpose of permitting the walls of the tube to be severed against the serrated edge 48 of the former and the serrated edge 49 of the lip knife. This severance is effected by means of a striker bar 50 mounted on a sprocket chain 51 passing over sprockets 52. Both webs 1 and 4 are pulled forward by the feed rollers 44, although in some machines it is sometimes found desirable to positively drive the roller 32. The roller 42 may also be positively driven if desired.

In order that the webs may be properly pasted together to form my improved compartment bag I apply lines of paste to both webs. A line of paste 7 is applied to the edge of the web 4 by a paste-applying disc 54 mounted for rotation in a paste-pot 55 suitably supported by a frame member 56 which may be a part of or attached to the main frame of the machine. Supported in a bracket 58 are two paste-pots 59 and 60 carrying respectively paste discs 61 and 62. The disc 62 applies the line of paste 10 to the edge of the web 4, Figures 1 and 5. The disc 61 supplies a line of paste indicated at 12, Figure 1, which line of paste is spaced from the line of paste 10 a distance which is substantially that of the width of the bag.

The two webs 1 and 4 are pressed together as the overlapped webs pass beneath the heel 35 of the former 34 and are secured together along the paste lines 10 and 12. One compartment of the bag is thus initially formed even before the webs are folded about the former to form the bag tube.

The free edge of the web 4 is so folded that it slightly overlaps the free edge of the web 1 when the latter is folded about the former. There is thus formed a narrow seam at the rear of the bag as viewed in Figure 1.

The notch 14 in the ply 2 of the front bag wall as shown in Figure 1 is preferably made by a die 64 mounted for rotation on shaft 66, which shaft is driven in a suitable manner and in proper timed relation with the pinch bars 46.

It may be noted that the pinch bars 46 make one rotation for each bag length severed from the bag tube and the shaft 66 likewise makes one rotation for each bag length so that the incisions made by the die which result in the notches 14 are spaced at bag-length intervals apart.

The die 64 makes a V-shaped cut and therefore when the bag tube is severed by the serrated edges 48 and 49 of the frame and lip knife, respectively, the position of an incision is such that the transverse cut made by the former passes through the base of the V, leaving a tab shown at 68, Figure 5, this tab being in the center of the bottom of the bag and is a prolongation of the front ply wall 2. While this tab performs no function, it is nevertheless allowed to remain on the bag wall because if it were cut off completely some means would have to be devised whereby this waste could be disposed of.

The process by which the bag shown in Figure 3 may be readily produced commercially and on a bag machine such as is in general use, is shown in Figures 7 and 8 and the principal difference between the method illustrated in Figure 5 and that illustrated in Figure 7 is in the greater overlap which is given to the free edges of the webs when they are folded about the former. In the Figure 5 method the free edges of the web are overlapped to form a narrow seam while in the Figure 7 method the free edges of the webs are overlapped substantially the width of the bag and it is by this greater overlapping that I produce a bag having three compartments instead of two.

Referring to Figure 7, the web 1 corresponds to the web 1 of Figure 5, and the web 18 corresponds to the web 4. Instead, however, of applying a single line of paste to the edge of the

web 18, I apply a line of paste 22 to the edge thereof and in addition apply another line of paste 24 to the same side of the web but spaced from the line of paste 22 a distance substantially equal to the width of the bag. Instead, therefore, of having a single paste disc 54 as shown in Figures 5 and 9, I provide an additional paste disc 70 which may be supported in the same bracket 56, Figure 9, which supports the disc 54. The lines of paste indicated at 21 and 23, Figure 3, are supplied by paste discs 71 and 72 which are similar in all respects to the paste discs 61 and 62.

The notches 27 and 28, Figure 1, are made in the same way as is the notch 14. Instead of one die 64 I provide two such dies spaced apart on the shaft 66 the desired distance. One die is also set circumferentially a little in advance of the other, the advance setting corresponding to the length of the closing flap or bag lip.

What I claim is:

1. A compartment bag composed of two interfolded webs of paper, two of the edges of said webs being overlapped substantially the width of the bag, the other two edges being overlapped slightly to form a narrow pasted seam.

2. A compartment bag having a two-ply front wall and a single ply rear or seam wall, a bottom flap which is a prolongation of the front wall and a closing flap which is a prolongation of the seam wall projecting beyond both plies of the front wall.

3. A bag having three compartments, said bag composed of two interfolded webs of paper, the edges of one web being secured to the other web adjacent the side edges of the bag.

4. A compartment bag composed of two interfolded webs of paper, one edge of each web being secured to the other web a distance apart equal to the desired width of the compartment and the other edges of said webs being overlapped to form a narrow seam.

5. A compartment bag having a two-ply front wall and a single ply rear wall, a bottom flap which is a prolongation of the front wall and a closing flap which is a prolongation of the rear wall projecting beyond both plies of the front wall, the outer ply of the front wall having a notch at its upper edge to facilitate access to the compartment formed by the two plies of paper comprising the said front wall.

6. A paper bag having a double-ply front wall and a double-ply rear wall, a bottom closing flap which is a prolongation of said front wall and folded over onto the rear wall, a double-ply closing flap which is a prolongation of the rear wall, said flap extending beyond the top edges of the double-ply front wall.

7. A paper bag having a double-ply front wall and a double-ply rear wall, a bottom closing flap which is a prolongation of said front wall and folded over onto the rear wall, a double-ply closing flap which is a prolongation of the rear wall, said flap extending beyond the top edge of the double-ply front wall and a notch in the edge of one of the plies at said flap.

8. A paper bag having a double-ply front wall and a double-ply rear wall, a bottom closing flap which is a prolongation of said front wall and folded over onto the rear wall, a double-ply closing flap which is a prolongation of the rear wall, said flap extending beyond the top edge of the double-ply front wall and a notch in the edge of one of the plies of said front wall.

9. A paper bag having a double-ply front wall and a double-ply rear wall, a bottom closing flap which is a prolongation of said front wall and folded over onto the rear wall, a double-ply closing flap which is a prolongation of the rear wall, said flap extending beyond the top edge of the double-ply front wall, a notch in one of the plies of said flap and a notch in one of the plies of the front wall whereby access may be readily had to the several compartments.

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