United States Patent

Baglio

[15] **3,642,273**

[45] **Feb. 15, 1972**

[54] CARTON WITH INNER COMPARTMENT FOR USE IN FEEDING SMALL-SIZED PAPER

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[21] Appl. No.: **32,998**

[52] **U.S. Cl.** .....**271/61,** 206/57, 229/17 S, 229/27

[51] **Int. Cl.** **B65h 1/04**

[58] **Field of Search** .....271/61; 206/57; 229/27, 17 RS, 229/51 TS, 37

[56] **References Cited**

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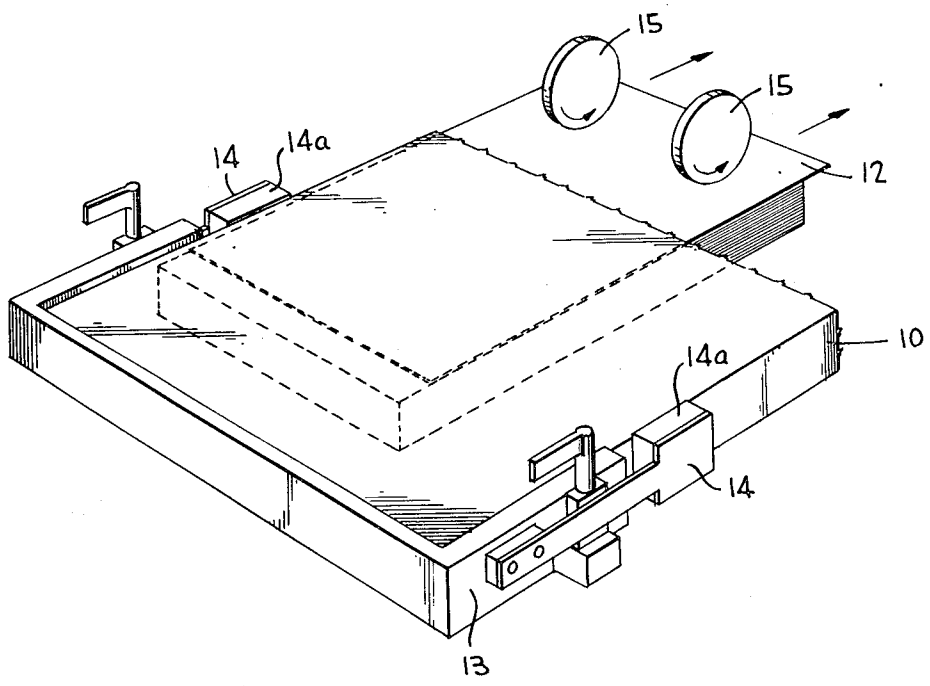
[57] **ABSTRACT**

A carton having an inner compartment for containing a quantity of paper smaller in size as compared to the overall size of the carton and usable for insertion in the paper receptacle of a copying machine in a manner whereby the machine's feed rollers may successively propel the small-sized paper through the machine. The carton has a tear strip around its circumference in the vicinity of the inner compartment so that the carton may be completely separated therealong after which the quantity of small-sized paper will become fully exposed to the feed rollers.

6 Claims, 6 Drawing Figures



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SHEET 1 OF 2

FIG. 1

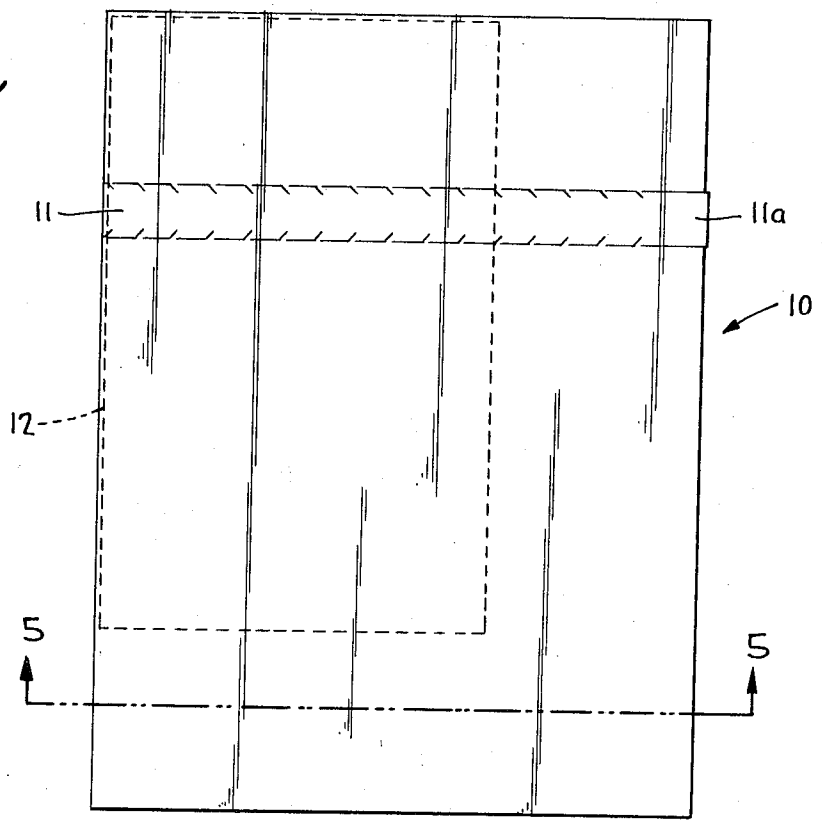

FIG. 2

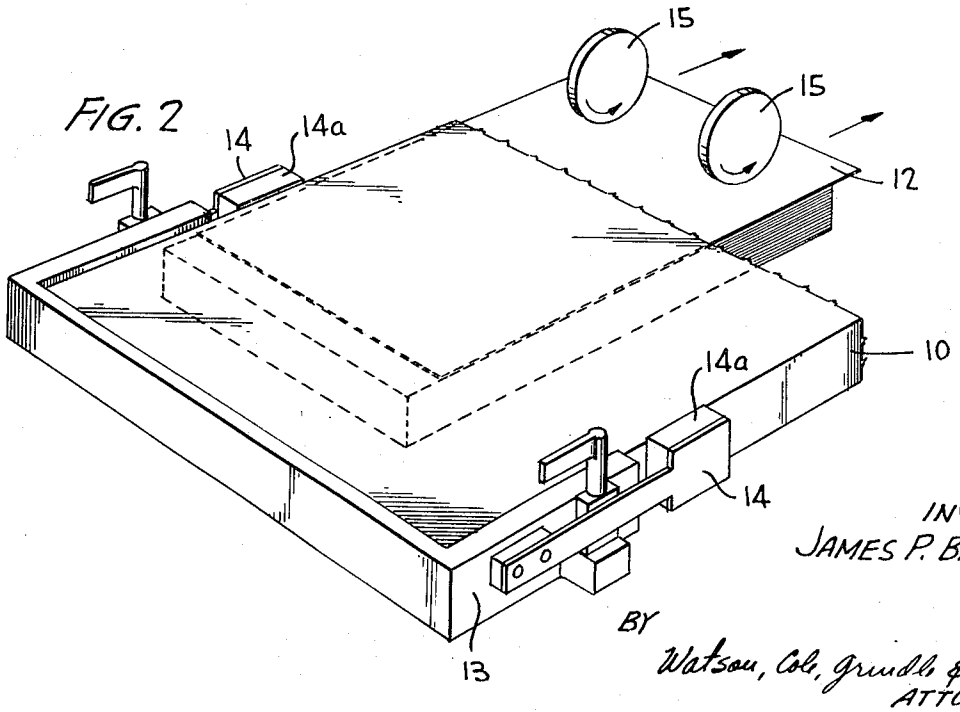

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FIG. 3

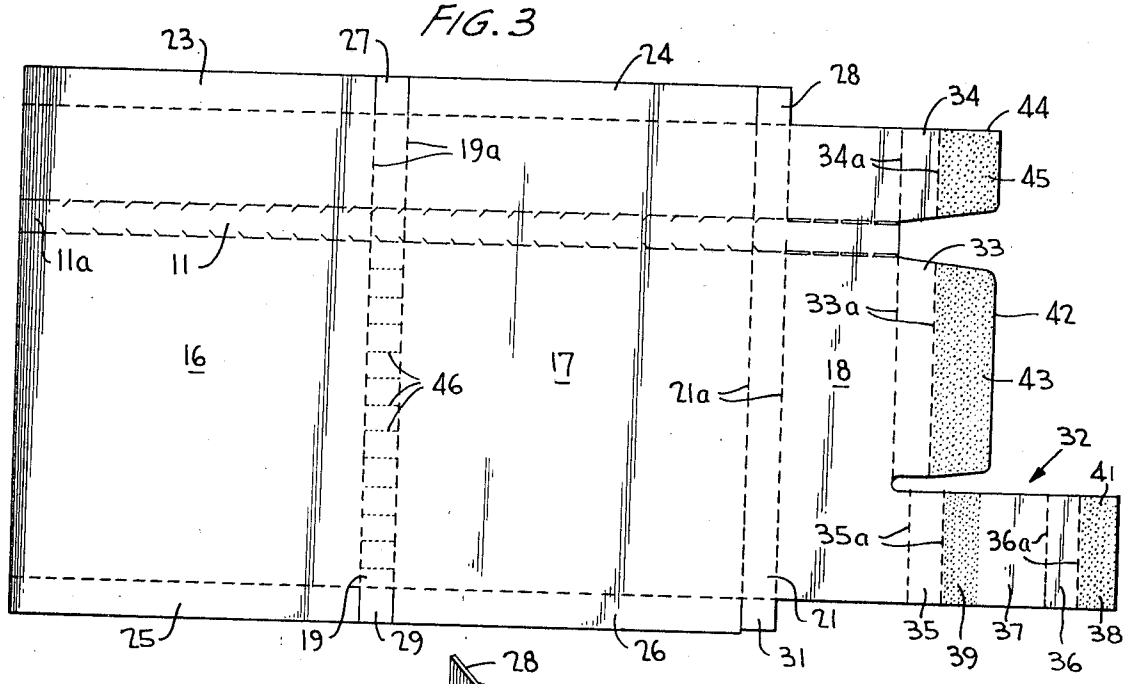


FIG. 4

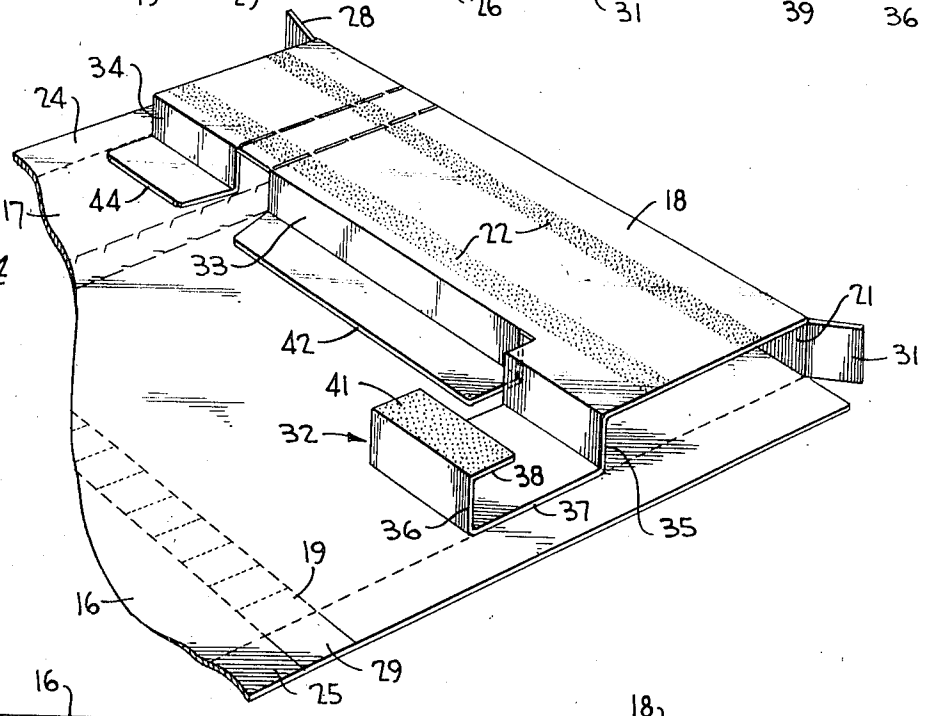


FIG. 5

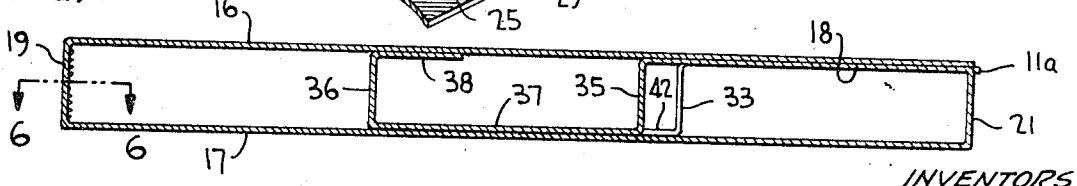
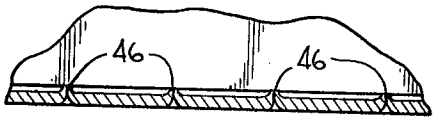


FIG. 6



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CARTON WITH INNER COMPARTMENT FOR USE IN FEEDING SMALL-SIZED PAPER

This invention relates generally to a means for permitting small-sized or miniature copies to be made with the use of a standard copying machine and more particularly to a carton having an inner compartment for containing such small-sized paper, the carton being capable of insertion into the existing receptacle provided for the copying machine and constructed in such a manner that the small-sized paper may be successively propelled through the machine by the machine's feed rollers.

In the standard business copying machines, of the type sold and manufactured by the Xerox Company, for example, available for making standard sized 8 ½×11 or 8 ½×14 copies, it oftentimes becomes desirable to produce copies on sheets of paper which are smaller than the standard sizes. If the information to be copied is printed on 3×5 or on 6×8 cards or booklets, for example, it would greatly expedite the copying operation and would substantially reduce the cost of copy paper especially during multiple copy operations if the copy sheets were also of a similar size. Otherwise, the copying machine operator is required to trim each copy sheet down to the required size of the copy material. Since this becomes prohibitive for large numbers of small-sized sheets in terms of operator time and paper waste, an alternative would be to adjust or modify the standard paper receptacle of the machine to accommodate the miniature sized paper. However, the added costs to the manufacturer for existing machines renders such an adjustment highly impractical especially since the machine's paper feed rollers would also need to be relocated for effectively propelling the smaller than standard sized copy sheets. By the present invention, these problems are completely avoided since miniature copy sheets may be easily accommodated in the existing copying machine tray without the need for expensive modification or adjustment means or without the necessity for trimming or otherwise reducing the size of the standard copy sheets. A carton has been, therefore, devised by applicant which is snugly received between the paper retaining means in the tray and has an inner compartment for containing a packet of small-sized sheets which may be each conveniently exposed to the feed rollers for successively propelling the sheets through the copying machine. Such an exposure is effected by means of a tear strip provided around the circumference of the carton in the vicinity of the innner compartment so that the carton may be completely separated therealong after it is placed in the machine tray. This is the principal object of the present invention.

Another object of this invention is to provide a carton of the type described which is constructed as having front and back panels and an inner panel secured to the inner surface of the front panel, sidewalls innerconnecting the front and back panels and the back and inner panels, respectively, end flaps for closing each end of the carton, flap means for the inner panel extending between the front and back panels and defining spaced shoulders and an inner wall parallel to the sidewalls thereby providing the inner compartment, and the tear strip provided in the sidewalls and in the front, back and inner panels.

A further object of the instant invention is to provide a carton as characterized wherein friction means in the form of inwardly directed protrusions are also provided along that sidewall which interconnects the front and back panels so as to insure removal of the sheets by the machine feed rollers one-at-a-time.

A still further object of the present invention is to provide such a carton wherein the flap means comprise first, second and third flaps—the first flap having spaced walls wherein the inner edges of each serve as the spaced shoulders, and the second and third flaps define the compartment inner wall each located at opposite sides of the tear strip.

A still further object of this invention is to provide such a carton wherein the shoulder walls and the compartment inner walls are each secured between the front and back panels of the carton by means of suitably provided tabs.

Other objects, advantages and novel features of the present invention will become apparent from the following detailed description of the invention when considered in conjunction with the accompanying drawings wherein:

FIG. 1 is a plan view of the assembled carton according to the present invention;

FIG. 2 is a perspective view showing the carton after it has been line A–the copying machine receptacle;

FIG. 3 is a plan view of the blank from which the carton of FIG. 1 is assembled;

FIG. 4 is a partial perspective view showing the construction of the inner panel which forms the inner compartment for the carton;

FIG. 5 is a sectional view taken substantially along the line 5—5 of FIG. 1; and

FIG. 6 is a partial sectional view taken along the line 6—6 of FIG. 5 showing the friction means provided along the inner surface of one of the sidewalls.

Turning now to the drawings wherein like reference characters refer to like and corresponding parts throughout the several views, there is shown a carton **10** in FIG. 1 having a tear strip **11** for separating the carton in the vicinity of the carton's inner compartment designed for containing a packet of small-sized or miniature copy sheets **12**. The carton as shown in FIG. 1 containing the sheets **12** will be received by the customer who will be instructed to pull tab **11***a* of the tear strip upwardly for the purpose of completely separating the carton therealong before placing the lower half of the carton with its sheets **12** between the sides and lower wall of the receptacle **13** of the type shown in FIG. 2 normally provided for the Xerox-type copying machine. The inwardly movable paper retaining means **14** are then placed against the sides of the carton **10**, shown in FIG. 2, in the same manner as if a stack of 8-½-inch wide sheets were being placed into the receptacle. Since the top half of the carton above the tear strip area has been completely separated and discarded, the tops of each of the sheets **12** at their upper ends are, therefore, seen to be fully exposed to the feed rollers **15** which are typically provided in such copying machines.

In FIG. 3, it will be seen that the carton is constructed from a blank having a front panel **16**, a back panel **17**, and an inner panel **18**, the panels **16** and **17** being interconnected by means of a sidewall **19** and the panels **17** and **18** being interconnected by means of another sidewall **21**. The inner panel **18** is folded along the fold lines **21***a* of the sidewall **21** so as to overlie the back panel **17** and the front panel **16** is folded along fold lines **19***a* of sidewall **19** to overlie the inner panel **18** thereby forming a substantially sleevelike carton rectangular in cross section as shown clearly in FIG. 5 of the drawings. Strips of adhesive are appropriately provided along both surfaces of inner panel **18**, in a manner to be hereinafter described, so that panels **16**, **18** and **17**, **18** may be respectively secured together. End flap means at each of the upper and lower ends of of the panels **16** and **17** are provided in the form of flaps **23**, **24**, **25**, **26** and ears **27**, **28**, **29**, **31**, so that the flaps and ears at opposite ends of the front and back panels **16** and **17** may each be conveniently folded and secured together with adhesive for closing the top and bottom ends of the carton **10** by the supplier after the sheets **12** have been inserted into the inner compartment.

This inner compartment is defined by flap means on the inner panel **18** which comprises a first flap **32**, second flap **33**, and a third flap **34**. The first flap **32** has a first wall **35** defined by a pair of spaced parallel fold lines **35***a*, and a second wall **36** defined by a pair of spaced parallel fold lines **36***a*. The walls **35** and **36** are joined by a tab **37** with the free end of the wall **36** having a tab **38** thereon so that after the walls **35**, **36** are folded along their respective fold lines in a manner as shown in FIG. 4, it can be seen that the strip of adhesive **39** on the tab **37** serves to adhesively secure that tab to the inner surface of the front panel **16** when it is folded to overlie the inner panel. From such a construction, it will be seen that the inner or uppermost edges of the walls **35**, **36** serve as a bottom support means for the packet of copy sheets **12**.

The second flap 33 is also defined by a pair of spaced parallel fold lines 33*a* which are respectively located a shorter distance from the fold lines 21*a* as compared to fold lines 35*a* of the first wall 35. Accordingly, the second flap 33 is transversely spaced a slight distance from the first wall 35 after this second flap is folded along its fold line as shown clearly in FIG. 4. The upper edge of this first wall 35 then clearly defines a shoulder along with the upper edge of second wall 36 for the purpose of supporting the bottom edges of the packet of sheets 12. The second flap 33, therefore, serves as a portion of an inner wall defining a side of the compartment for containing the packet of sheets. This flap or wall 33 is provided with a tab 42 having a strip of adhesive 43 thereon such that when the tab is folded as shown in FIG. 4 it may be adhesively secured to the inner surface of the back panel 17.

The third flap 34 is also defined by a pair of spaced parallel fold lines 34*a* along which this flap may be folded and shown clearly in FIG. 4 to be an extension of the flap 33 thereby serving as the remaining portion of the sidewall for the inner compartment. The flap 34 is likewise provided with a tab 44 having a strip of adhesive 45 thereon so that it may be adhesively secured to the inner surface of the back panel 17 when folded as shown in FIG. 4. And, with the use of adhesive such as strips 22, on inner panel 18, front panel 16 may be secured thereto so as to form the sleevelike carton 10 shown in FIG. 5.

As seen in FIG. 3, the tear strip 11 is located in both the front and back panels 16 and 17, in both sidewalls 19 and 21, and in the inner panel 18 so that, as the tear tab 11*a* is lifted upwardly, the user may simply tear along the circumference of the carton and thereby separate and remove the entire top portion of the carton for the purpose as earlier described.

In FIGS. 3 through 5, and more clearly in FIG. 6, it can be seen that a series of inwardly directed protrusions 46 are provided along the sidewall 19 for the purpose of enhancing the frictional characteristics of the inner surface of this wall so as to insure that each of the copy sheets 12 are removed one-at-a-time from the carton by the feed rollers 15 during the copying operation. These protrusions 46 may be made by punching through the outer surface of the sidewall 19 or they may be made in any other convenient manner. The protrusions may be looked upon as serving a purpose similar to that of the resilient pads 14*a* (see FIG. 2) on the paper retaining means 14 which are normally provided to steady the 8-½-inch wide sheets within receptacle 13 and insure a one-at-a-time feeding by the rollers 15. Accordingly, the inwardly directed force exerted by the retaining means 14 pressing against the opposite sidewalls of the carton 10 is more readily transmitted to the side edges of the packet of sheets 12 by reason of the protrusions 46 which also serve to maintain those sheets which are not being propelled by the rollers 15 from being removed from the carton 10.

From the foregoing, it can be seen that an inexpensive and simply constructed carton has been provided for the accommodation of a packet of small-sized or miniature sheets for use with a copy machine having a paper tray. The carton is simply separated along its tear line 11 and the top portion discarded before placing the lower carton portion with its copy sheets into tray 13 of the copying machine and thereafter placing the paper retaining means securely against the sidewalls of the carton before commencing the copying operation. The instant carton may obviously accommodate sheets of various sizes up to 8 ½ inches wide and 14 inches long simply by varying the width of the inner panel 18 and the height of flap 32. The packet of copy sheets are simply made to rest against the inner edges of the walls 35, 36 along their bottom edges and between the inner surface of sidewall 19 and walls or flaps 33, 34. When each of the sheets 12 is completely exhausted from its carton 10, a new fully loaded carton is simply placed in the paper tray 13 of the machine for resupplying the machine without the need for adjustments or tray replacement or sheet trimming.

Obviously many modifications and variations of the present invention are possible in the light of the above teachings. It is, therefore, to be understood that within the scope of the appended claims the invention may be practiced otherwise than as specifically described.

What is claimed is:

1. A carton, adapted to be inserted into the paper receptacle of a copying machine between inwardly movable paper retaining means at opposite sides of the receptacle, comprising: a front, back and inner panel; sidewalls respectively interconnecting said front and back panel and said back and inner panel; said inner panel being secured to the inner surface of said front panel; end flaps on said front and back panel for closing the carton at each end; flap means on said inner panel defining abutment shoulders lying in a plane spaced from one end of the carton, said flap means also defining an inner wall disposed between and parallel to said sidewalls, said shoulders together with said inner wall and one of said sidewalls defining an inner compartment having a dimension in one direction less than the distance between the carton ends and having a dimension in another direction less than the distance between said sidewalls for containing individual sheets of paper smaller in size in both directions as compared to the size of the carton; a tear strip provided around the circumference of the carton parallel to and spaced from the other end of the carton; said tear strip lying in each of said front, back and inner panels whereby the carton may be completely separated therealong.

2. The carton according to claim 1 wherein friction means are provided in said one sidewall interconnecting said front and back panels for insuring a removal of the small-sized paper one-at-a-time from said inner compartment.

3. The carton according to claim 2 wherein said friction means comprises a plurality of slight protrusions facing inwardly.

4. The carton according to claim 1 wherein said flap means on said inner panel comprises a first, second and third flap, said first flap including spaced first and second walls defining said shoulders of said inner compartment, and said second and third flaps each being located on opposite sides of said tear strip.

5. The carton according to claim 4 wherein said first and second walls and said second and third flaps are each parallel to said sidewalls, said second and third flaps being axially aligned with one another and said first wall being spaced slightly inwardly from said second flap.

6. The carton according to claim 5 wherein tabs each with a strip of adhesive are provided for securing said first and second walls, and said second and third flaps to said back panel and for securing said second wall to said front panel.

* * * * *