Jan. 22, 1957 A. C. BOITEL 2,778,559

BLANK FOR PACKAGING OF BOOKS AND THE LIKE

Filed May 12, 1952

FIG. 2.

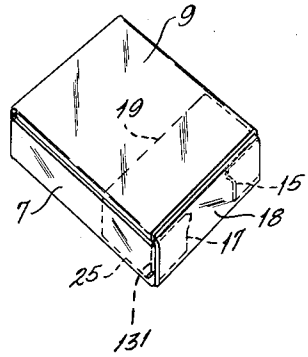


FIG. 1.

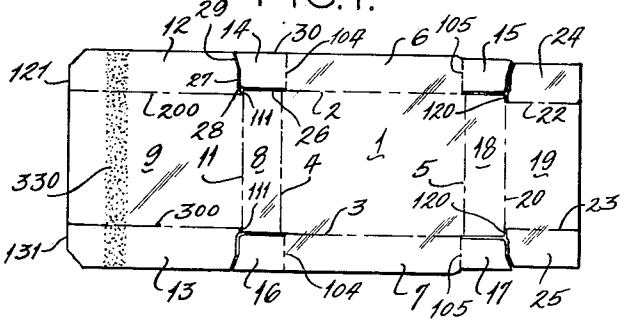


FIG. 3.

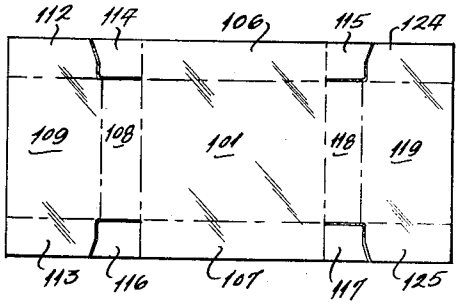
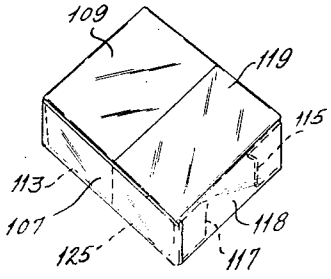


FIG. 4.



INVENTOR:
ARWED C. BOITEL
BY Brumbaugh & Graves
ATTORNEYS.

United States Patent Office 2,778,559 Patented Jan. 22, 1957

2,778,559

BLANK FOR PACKAGING OF BOOKS AND THE LIKE

Arwed C. Boitel, Evanston, Ill., assignor to Atlas-Box-makers, Inc., Chicago, Ill., a corporation of Delaware

Application May 12, 1952, Serial No. 287,282

1 Claim. (Cl. 229—40)

This invention relates to a blank for book-wraps and the like, and to the application of the blank to the article being wrapped so as to form a shipping package therefor. While the invention will be described as a book-wrap, it is to be understood that the invention is also useful in the wrapping of other articles such as boxes of candy or cigars, bottled goods, pads or piles of paper, or in general any reasonably firm article having length, breadth, and thickness.

Heretofore various efforts have been made to provide a blank which could be folded into a shipping package for books. These blanks are generally formed of corrugated paper board and are precut and prescored so as to facilitate their conformation about a book. A common type of book-wrap is formed from a cross-shaped blank, and while this type is relatively easy to apply (skilled workers sometimes achieving a wrapping rate of two hundred fifty per hour), it is deficient in providing but scant protection for the corners, which are the most vulnerable parts, of the contained book. Other types have been provided which adequately protect the corners of the book, but these are cumbersome and time-consuming in application.

The object of the present invention is to provide a book-wrap or the like which is both adequately protective and easy to apply.

A further object is to provide a device for facilitating the conformation of a pre-cut-and-scored blank about a book or the like.

These and other objectives of the invention, which will become apparent as the description proceeds, are accomplished by providing a flat, substantially rectangular blank, scored and cut to define an intermediate panel whose area approximates the area of one surface of the book, and also to define flaps providing a double thickness of blank material at all four corners (with but a single thickness over the major part of the flat surfaces) of the book. Such a blank, with a book superimposed upon the intermediate panel thereof may be forced through a mold so constructed and arranged that the several flaps are folded toward and about the book, in proper sequence to form an enclosure therefor, by simple application of pressure upon the book (without moving it relative to the intermediate panel of the blank) and finally upon the flaps which overlie it. The invention contemplates that the motion of forcing the blank through the mold not only completes the enclosure about the book, but so internests the several flaps that the enclosure is held together, at least temporarily. Thereafter, if desired, the enclosure may be more securely connected by adhering adjacent flaps together, as by adhesive between overlapping flaps, or by a strip of gummed tape across the joint between adjacent flaps.

In the accompanying drawings:

Figure 1 is an inside up plan view of a blank embodying the present invention;

Figure 2 is a perspective view of a completed package formed from the blank shown in Figure 1;

Figure 3 is an inside up plan view of another form of blank; and

Figure 4 is a perspective view of a completed package formed from the blank shown in Figure 3.

Referring to Figure 1, a blank is shown (inside up) which is proportioned to wrap a book whose cover area is approximately the same as, but somewhat less in each direction than panel **1** which is defined by score lines **2**, **3**, **4**, and **5**. Side flaps **6** and **7** lie outwardly of score lines **2** and **3**, and are defined between score lines **104** and **105** which are parallel to, but offset by the thickness of the blank from alignment with score lines **4** and **5** respectively.

In parallel spaced relationship with score line **4** is a score line **11** which terminates short of the margins of the blank at score lines **200** and **300**. The latter are parallel with but offset from alignment with score lines **2** and **3** respectively by the thickness of the blank. Between lines **4** and **11** is an end panel **8**. Embraced by lines **11**, **200** and **300** is a cover panel **9** of length not quite two thicknesses of blank less than the length of panel **1**; that is to say, the cover panel **9** is slightly longer than the distance between score lines **104** and **105**. Outwardly of score lines **200** and **300**, side flaps **12** and **13** extend from cover panel **9**. Adjacent score lines **200** and **300**, flaps **12** and **13** have the same length as the cover panel, but at their outer margins said flaps are shorter than the cover panel. Beyond score lines **104** and **105**, corner flaps **14** and **15** extend from side flap **6**, and corner flaps **16** and **17** extend from side flap **7**. Beyond score line **5**, an end panel **18** extends from panel **1** and therebeyond a cover panel **19** is provided. A score line **20** terminating short of the margins of the blank extends between panels **18** and **19**. The panel **19** is defined between score lines **22** and **23**, which are parallel, but inwardly offset (for twice the thickness of the blank) from alignment with score lines **2** and **3** respectively. Outwardly of score lines **22** and **23**, side flaps **24** and **25** extend from panel **19**.

The corner flap **14** is integrally connected with side flap **6** but is severed from end flap **8** and side flap **12** by a cut line which includes: a cut **26** immediately outside score line **2** as projected; a cut **27** parallel with score line **11** but offset from alignment therewith by the thickness of the blank; a well-rounded corner **28** between cuts **26** and **27**; and a flaring cut **29** adjacent the marginal part of flap **12**. The corner flaps **15**, **16**, and **17** are similarly severed from all adjacent parts with the exception of the side flaps **6** or **7**, to which latter the corner flaps are integrally hinged.

Between score line **200** and cut line **26** a short cut line **111** extends in alignment with score line **11**. A like cut is made at the opposite extremity of score line **11**. Similarly cut lines **120** (twice the length of **111**) are made at the extremities of score line **20**.

The outer corners of side flaps **12** and **13** may be beveled as shown but it is advantageous to retain a liberal shoulder perpendicular to score lines **200** and **300** as shown at **121** and **131**. The latter, in the completed package, forms a secure friction lock against the interior of corner flaps **15** and **17**, and retains the package closed even if the contained book is considerably smaller than the interior of the package, and even if no adhesive or other fastening be used.

When used as a shipping container, it is preferred that the blank be made of corrugated paper-board such as the so-called "B" corrugation with double facing. Other types of paper-board may be used, however.

To set up the blank into a package about a book or the like, the latter is placed upon a blank, within the confines of panel **1**, and then: first, the corner flaps **14** and **16** are turned upwardly about lines **104** as a hinge, and corner flaps **15** and **17** are likewise turned upwardly about

lines 105 as a hinge; next the several side flaps are turned up about the score lines which constitute their respective hinge connections to the panels 1, 9, and 19; next the panels 8 and 9 are turned upwardly about score line 4 as a hinge (without "breaking" the hinge at score line 11) and panels 18 and 19 likewise hinged upwardly about score line 5 (without breaking the hinge at score line 20); then panel 19 is hinged about score line 20 to bring it into perpendicular relationship with panel 18 and parallel relationship with panel 1, with corner flaps 15 and 17 contiguous with panel 18 and side flaps 24 and 25 on the inner side of side flaps 6 and 7; and finally panel 9 is hinged about score line 11 to bring it into perpendicular relationship with panel 8 and parallel relationship with panel 1, with corner flaps 14 and 16 contiguous with panel 8 and side flaps 12 and 13 nested respectively between side flaps 6—24 and 7—25, as shown in Figure 2. At the same time, shoulders 121 and 131 are forced into resilient frictional abutment with the inside of corner flaps 15 and 17 respectively. Such sequential manipulation of the several flaps and panels is not easy to accomplish with only two hands, particularly if it be attempted (as it must be) to envelop a book or the like during the process, but the result is readily, quickly, and easily achieved, without any special dexterity by aid of the mold disclosed in my copending application Serial No. 361,673, filed June 15, 1953. Where the blanks are made of corrugated paperboard, as contemplated, and the mold is to be used in setting them up, it is important that the corrugations do not run parallel to the score lines 4, 5, 11 and 20, and indeed preferable that they run parallel to score lines 2 and 3, as otherwise the hinge may "break" at lines 11 or 20 before, rather than after, it breaks at lines 4 and 5.

It will be observed particularly that the dimension of the corner flaps 14, 15, 16, and 17 lengthwise of the blank, e. g., the distance between score line 104 and cut line 27, is greater than the corresponding dimension of the adjacent end panel, e. g., the distance between score lines 4 and 11. It will be further observed that the dimension of the corner flaps 15 and 17, widthwise of the blank, is less than the corresponding dimension of the side flaps 6 and 7. In all the corner flaps, however, the cut line 26 for flap 14, and the corresponding cut line for flaps 15, 16, and 17, is disposed immediately outside the score lines 2 or 3, as the case may be.

This relationship of the dimensions enables the end of flap 12 represented by cut line 27 to pass freely over region 30 of flap 14 during the step at which the cover panel is moved toward its final position. When flap 14 is turned so as to be at right angles with both side flap 6 and panel 1 and be parallel with end panel 8, the rounding of corners 28 accomplishes a progressive wedging at region 30 of flap 14, as panel 9 is moved into parallel relationship with panel 1. Similar action occurs at each of the four corners.

The insetting of the outer margins of corner flaps 15 and 17, and likewise the outer margins of side flaps 24 and 25, permits cover panel 19 to assume a position parallel with intermediate panel 1 by underlying cover panel 9 without interfering with the ultimate parallel relationship between panels 1 and 9.

The completed package, resulting from the blank shown in Figure 1, is shown in Figure 2.

Another form of blank suitable for making a package of the general character described, but not having the self-locking feature of the blank shown in Figure 1, is shown in Figure 3. In this embodiment, the several parts of the blank which correspond respectively to the blank shown in Figure 1 are indicated by reference characters in the one hundred series, but whose last two digits are identical with the reference numerals applied to the corresponding parts in Figure 1. In this embodiment, cover panel 109 is of the same length as cover panel 119, being one half the length of panel 101. Consequently, instead of overlapping, as in the previous embodiment, the

end edges of panels 109 and 119, when folded into final position, abut or nearly abut each other; and the joint between them may be covered by a strip of gummed tape. Furthermore, in the embodiment shown in Figure 3, all corner flaps 114, 115, 116, and 117 are of the same dimension, and likewise all the side flaps 106, 107, 112, 113, 124, and 125 are of the same widthwise dimension because, in this instance, the cover flap 119 is not required, as in the previous embodiment, to assume a final position in a plane below the plane of cover panel 109.

The completed package, resulting from the blank shown in Figure 3, is shown in Figure 4.

With an apparatus of the character described in my aforesaid application and using blanks of the character described, a single attendant with but brief experience can achieve a wrapping rate of four or five hundred books per hour. The wrapping is not only easy to apply, but affords double thickness protection at each corner of the book or other wrapped article.

From the foregoing description, those skilled in the art should readily understand that the invention accomplishes its objects in a highly expeditious, facile and economic manner. While one complete embodiment of the blank has been disclosed in detail, it is to be understood that such disclosure is solely for the purpose of illustration and not by way of limitation. It is apparent that many modifications and variations will present themselves to those skilled in the art without departing from the spirit of this invention, and it is to be distinctly understood, therefore, that the invention is not limited to the embodiment herein specifically disclosed.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

A blank for a book wrap or the like comprising a generally rectangular sheet of corrugated paperboard whose corrugations run parallel to the long dimension thereof; said sheet being scored perpendicularly to its longer dimension to delineate an intermediate panel, a pair of end panels hinged respectively to said intermediate panel along score lines at opposite ends thereof, and a pair of cover panels beyond the end panels and each hinged to its adjacent end panel along a score line; and said sheet being scored parallel with its longer dimension to delineate side flaps at opposite sides of each of said intermediate and cover panels; and corner flaps at each end of both side flaps of the intermediate panel, each of said corner flaps being hinged to its adjacent side flap of the intermediate panel along a score line which is offset inwardly a distance substantially equal to the thickness of the blank from the score line hinging its adjacent end panel to the intermediate panel, each of said corner flaps being severed from its adjacent end panel and from the side flaps of its adjacent cover panel; and the line severance defining the end edge of the cover panel side flap adjacent a corner flap extending a short distance to form a shoulder outwardly of and in substantial alignment with the score line between the adjacent end and cover panels, said line of severance extending outwardly from said shoulder to a point which is disaligned with said score line a distance at least equal to the thickness of the blank, said disalignment being in the direction toward the nearest end of the blank, the opposite end edge of said cover panel side flap defining a second shoulder adjacent the terminal edge of said cover panel, and the distance between said shoulders being greater, by less than two thicknesses of blank, than the distance between the score lines which hinge the corner flaps to their associated intermediate panel side flaps.

References Cited in the file of this patent

UNITED STATES PATENTS

1,794,631 Luckett ---------- Mar. 3, 1931

(Other references on following page)

5			6		
1,869,724	Wallace	Aug. 2, 1932	2,405,499	Guyer	Aug. 6, 1946
1,994,541	Spiking	Mar. 19, 1935	2,475,323	James	July 5, 1949
2,012,131	Kondolf	Aug. 20, 1935	2,605,598	MacKenzie	Aug. 5, 1952
2,111,901	Ness	Mar. 22, 1938			
2,149,400	Mazer	Mar. 7, 1939		FOREIGN PATENTS	
2,177,773	Heft	Oct. 31, 1939	376,170	France	June 2, 1906
2,326,390	Platt	Aug. 10, 1943			