(No Model.)

W. B. & H. W. HOWE & F. B. DAVIDSON.

BLANK FOR CARTONS.

No. 587,967. Patented Aug. 10, 1897.

Fig-1

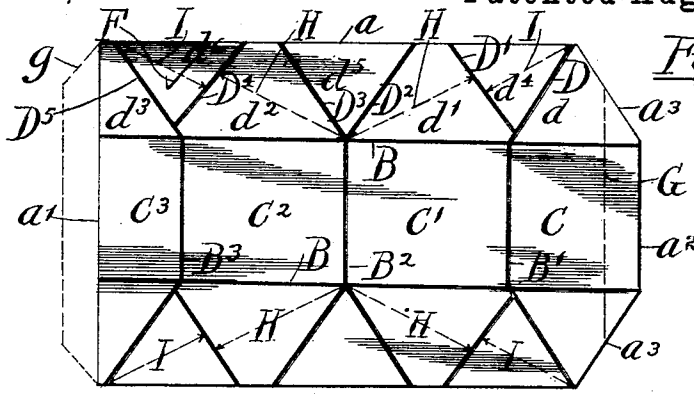


Fig-2

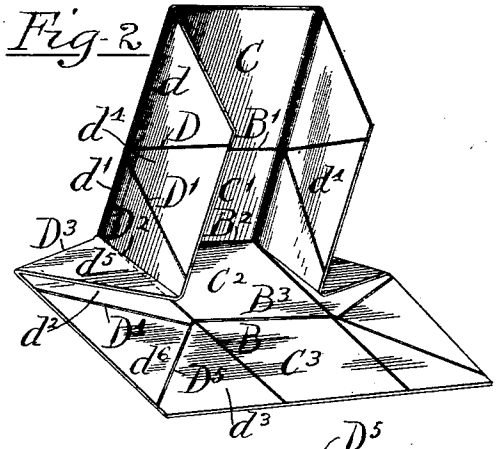


Fig-3

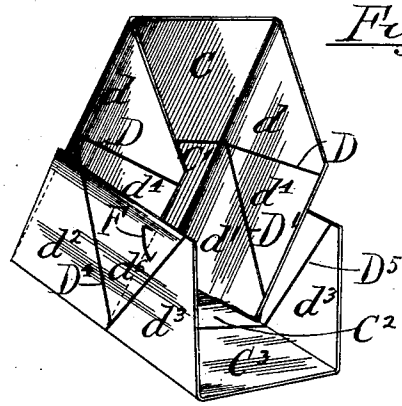


Fig-4

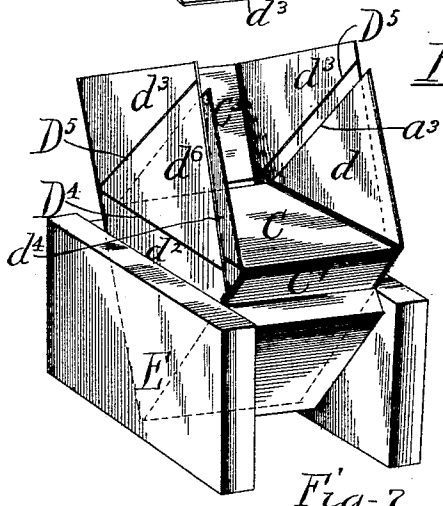


Fig-5

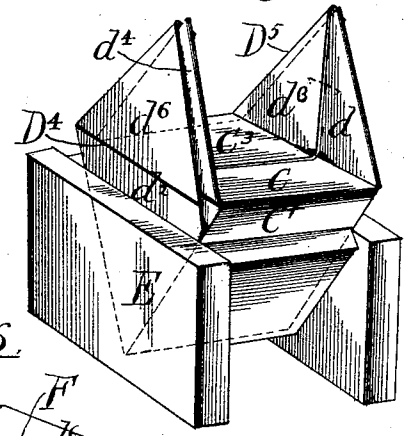


Fig-6.

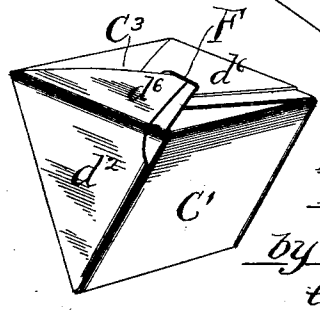


Fig-7



Witnesses
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

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BLANK FOR CARTONS.

SPECIFICATION forming part of Letters Patent No. 587,967, dated August 10, 1897.

Application filed December 3, 1896. Serial No. 614,334. (No model.)

To all whom it may concern:

Be it known that we, WARREN B. HOWE, HOMER W. HOWE, and FRANK B. DAVIDSON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Blanks for Cartons; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to "knockdown" paper cartons of that kind consisting of a single blank or wrapper, which is folded to form a package of triangular or prismatic form having two parallel ends and three sides.

The invention consists in the matters hereinafter described, and pointed out in the appended claims.

Figure 1 is a plan view of blank embodying our invention. Figs. 2 and 3 are perspective views of the same partially folded. Figs. 4 and 5 are perspective views of the blank when inserted in a form or holder during the process of folding. Fig. 6 is a perspective view of the completed package. Fig. 7 is an enlarged detail sectional view showing the embossed lines by which the blank is weakened or rendered more flexible on its lines of fold.

As shown in Fig. 1, A indicates the blank as a whole, the same having two parallel side edges a a, a straight end margin a' at one end, and at its opposite end a central straight margin a^2 and oblique edges a^3 a^3, connecting the margin a^2 with the side margins a a.

The blank is divided by weakened lines B B, running parallel with the side margins of the blank, and weakened lines B' B^2 B^3, arranged transversely of the blank into four rectangular panels C C' C^2 C^3, of which the intermediate panels C' C^2 are equal in length and width to two of the sides of the package, while the end panels C C^3 are intended to overlap to form the third side. As herein shown, the panel C is made of about the same length as the two intermediate panels and the panel C^3 of about half the length of the same, but these proportions need not be strictly adhered to.

Extending outwardly from the lines B B are obliquely-arranged weakened lines D D' D^2 D^3 D^4 D^5, which are arranged in three divergent pairs, meeting at the ends of the three transverse lines B' B^2 B^3. Between the oblique margins a^3, the line D, and the line B is formed a triangular panel d. Two similar triangular panels d' d^2 are formed between the lines D' D^2 D^3 D^4 and the said line B, and smaller triangular panels d^3 are formed between the lines D^5 and the edge a'. Similar triangular panels d^4 d^5 d^6 are formed between said oblique lines and the side margins a of the blank.

The weakened lines referred to may for the general purposes of our invention be made by any suitable or well-known process. As a special improvement, however, we propose to form the weakened lines by embossing the paper, so as to form a narrow raised strip, as seen at A' in Fig. 7, the embossing being accomplished by means of an embossing-press or in any other suitable manner. The embossing of a raised strip has the advantage of giving the paper flexibility along the weakened line without appreciably impairing the strength of the paper, the term "weakened line" as here used indicating a line of easy flexure, by which the paper is rendered less stiff along the desired folding-lines.

The manner in which the blank described is folded to make a box or carton will be understood from the following description in connection with Figs. 2, 3, 4, 5, and 6.

Fig. 2 represents the first fold that is made, this being made by bending the blank on the weakened line B^2 between the panels C' and C^2 and at the same time bending the blank on the oblique lines D^2 D^3, while bringing the side panels d d' at right angles with the center panels C C'. This is most conveniently accomplished by placing the blank on a flat surface, grasping the margins of the blank at the intersections of the lines D' and D^2 therewith, and then bringing the said intersections to points opposite the ends of the line B^3.

Fig. 3 represents the second step in folding. This is accomplished by bending upwardly the side portions containing the side panels d^2 d^3 on the lines B until said side portions

are in contact with the previously-bent side portions. The blank is then in readiness for filling or the insertion of the contents to be wrapped, and this is most conveniently accomplished by the use of the form or holder E, (shown in Figs. 4 and 5,) said form having a cavity or receptacle of the same size and shape as the angular bottom part of the folded carton. Said holder serves to maintain the blank in proper place while the folding is being completed.

Fig. 4 shows the blank after it has been inserted in the holder and after the material to be packed has been placed therein and the end panel C folded down over the contents, while the panels d are folded flat against the adjacent triangular panels d^4 by folding along the lines D. Packages of this kind are more commonly used for packing stick-candy, and it will of course be understood that when so used the package will be filled with the sticks of candy placed transversely or with their ends against the end walls of the package. In any case the package is filled to the score-line D′, (seen more distinctly in Fig. 3,) so that the panel C when folded down will rest in contact with the top surface of the contents of the package.

The next step in folding or closing the carton is illustrated in Fig. 5, which shows the panel C^3 folded inwardly over and into contact with the panel C, while the triangular panels d^3 are brought within the panels d by folding along the lines D^5. The folding of the parts in this manner has the effect of forming triangular flaps which rise from the level of the folded end panels C C^3 in the manner shown, Fig. 5. The carton is now in position for making the final folds, and this is done by folding down the two triangular flaps with their ends overlapping, as shown in Fig. 6. To firmly secure the parts of the package, a slit F is made in that one of the panels d^6 which comes at the outer face of the innermost flap when the parts are folded and the opposite pointed ends of the outer flap is inserted through said slit, as clearly seen in Fig. 6.

The package constructed as described may be easily and quickly folded without the use of any machine or apparatus excepting the holder E, and this is not strictly necessary, but is only employed for convenience in holding in shape the partially-folded wrapper while inserting the contents of the package. The package when completed is strong and tight and capable of withstanding rough handling without liability of opening.

As a further and special improvement in the construction of cartons of the kind described we locate the weakening-lines D′ D^4 nearer the ends of the blank than would be their position if disposed regularly or uniformly with respect to the cross-lines B′ B^3, this construction making the panels d' d^2 wider on the line H of Fig. 1 and the panels d^4 d^6 narrower on the line I of the same figure than would otherwise be the case. This construction is of importance because it makes provision for the presence of several thicknesses of paper at the bases of the triangular flaps which form the final folds, as clearly seen in Figs. 4 and 5.

As hereinbefore stated, the panel C of the blank shown in the drawings is made of substantially the same length as the panels C′ and C^2, while the panel C^3 at the opposite end of the blank is only about half as wide as the other panels. In this construction of the blank the said panel C when folded inwardly, as seen in Fig. 4, covers or closes entirely the open top of the package and covers the contents thereof, while the panel C^3 when folded inwardly, as seen in Fig. 5, extends only about half-way over the said panel C^3. The ends of the blank may, however, be modified by making the panel C shorter and the panel C^3 longer, as indicated, for instance, by the dotted lines G G′ in Fig. 1, it being obvious that when shaped as shown in said dotted lines the panels C and C^3 will overlap at the middle of the package, but neither will extend to the opposite side thereof. In either case, however, the oblique margins a^3 will be employed for the reason that when the panels C^3 and d^3 are folded inwardly said panels d^3 must be bent around or embrace the oblique margin a^3, which latter necessarily enters between the folded panels and rests adjacent to the line D^5, as clearly seen in Figs. 4 and 5. In the modification illustrated in the dotted lines, Fig. 1, the panels d^3 have oblique edges g g; but these oblique edges are not absolutely necessary, for the reason that square edges if present on the panels would merely project somewhat at the side of the oblique edges of the flaps, as shown in Fig. 5, and this would not be objectionable if the projecting edges be not too wide to enter the slit F.

The lines D^2 D^3 are necessarily arranged to make equal angles with the longitudinal lines B and with each other, this relation of the lines being required in order that the blank when folded shall form a triangular package having equal sides and angles.

We claim as our invention—

1. A blank for cartons, having longitudinal and transverse parallel, weakened lines forming four rectangular panels, and oblique weakened lines forming with the longitudinal lines four lateral panels and with the side margins of the blank three intermediate, marginal, triangular panels one end of the blank having oblique edges adjacent to its side margins, which oblique edges are embraced by adjacent triangular panels to constitute triangular flaps which overlap the meeting edges of the blank when the latter is folded.

2. A blank for cartons, having longitudinal and transverse, parallel, weakened lines forming four rectangular panels, and oblique weakened lines forming with the longitudinal lines four lateral triangular panels and with the

side margins of the blank three intermediate, marginal triangular panels, one of said marginal panels being provided with a locking-slit into which the triangular flap of the folded blank may be inserted.

3. A blank for cartons having longitudinal and transverse, parallel weakened lines forming four rectangular panels and oblique weakened lines forming with the longitudinal lines, four lateral panels and with the side margins of the blank three intermediate, marginal, triangular panels; one end of the blank having oblique edges adjacent to its side margins, which oblique edges are embraced by adjacent triangular panels to constitute triangular flaps which overlap the meeting edges of the blank when the latter is folded and the lines forming the outer margins of the two adjacent lateral panels at the central part of the blank being shifted outwardly to provide for the additional thickness of paper at the lines at which the triangular outer flaps are folded down against the overlapping panels beneath them.

4. A blank for cartons having longitudinal and transverse, parallel, weakened lines, forming four rectangular panels, and oblique weakened lines forming with the longitudinal lines, four lateral, triangular panels and with the side margins of the blank, three intermediate, marginal, triangular panels, one of said marginal panels being provided with a locking-slit into which the triangular flap of the folded blank may be inserted; the lines forming the outer margins of the two adjacent lateral panels at the central part of the blank being shifted outwardly to provide for the additional thicknesses of paper at the lines at which the triangular outer flaps are folded down against the overlapping panels beneath them.

In testimony that we claim the foregoing as our invention we affix our signatures, in presence of two witnesses, this 1st day of December, A. D. 1896.

WARREN B. HOWE.
HOMER W. HOWE.
FRANK B. DAVIDSON.

Witnesses:
WILLIAM L. HALL,
R. J. CARRIER.