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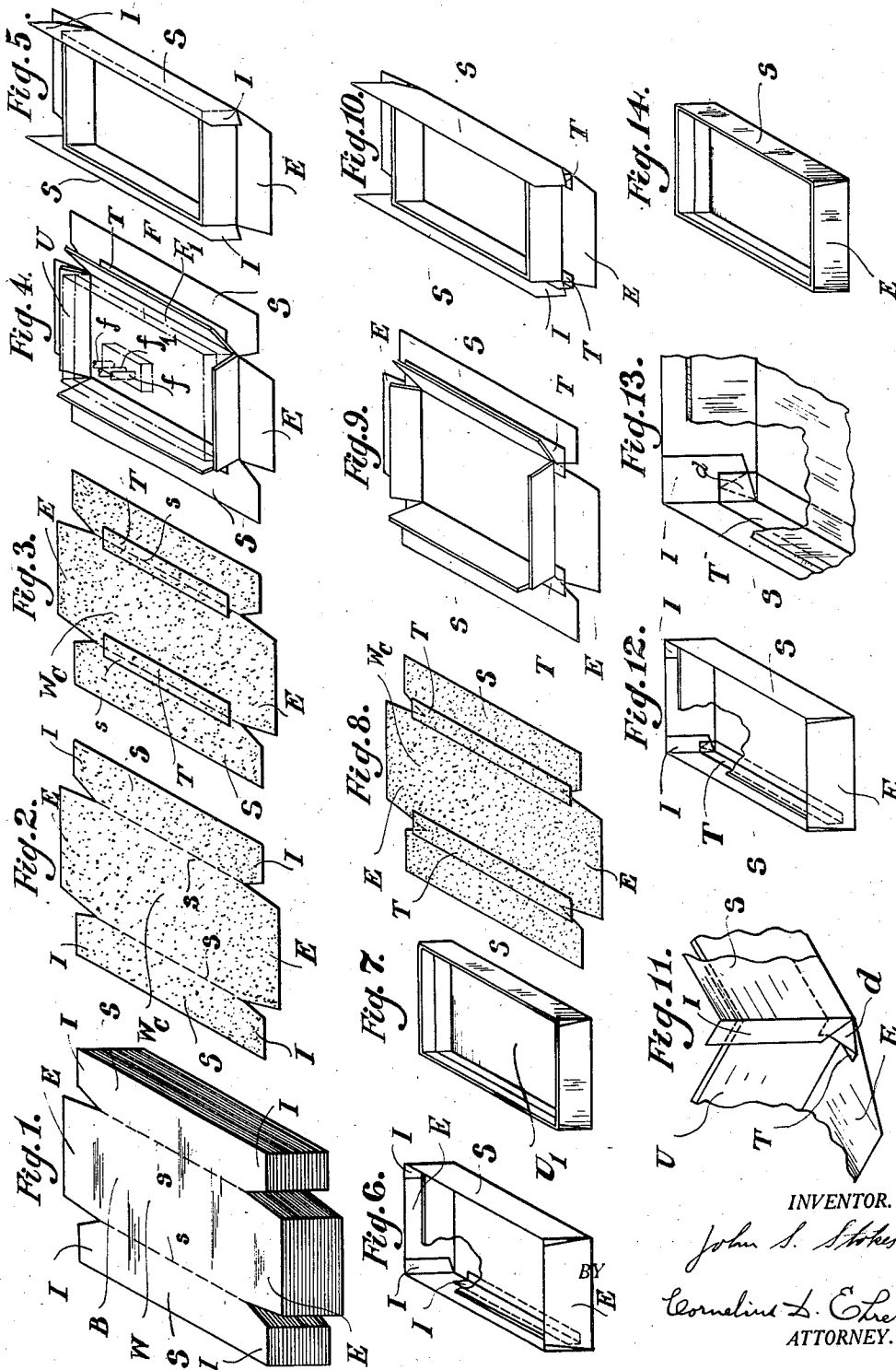
J. S. STOKES

1,827,442

METHOD OF PRODUCING AND APPLYING TABBED WRAPPERS

Filed July 21, 1928

2 Sheets-Sheet 1



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Oct. 13, 1931.

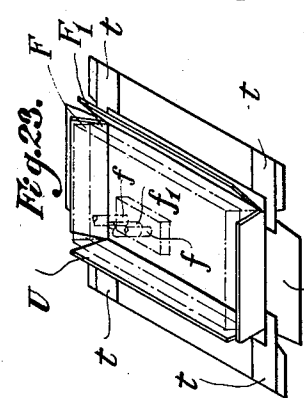
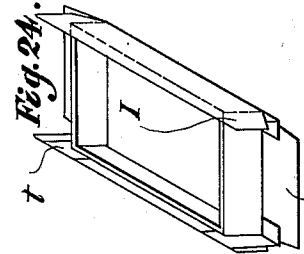
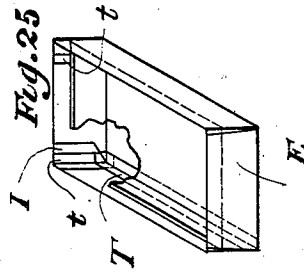
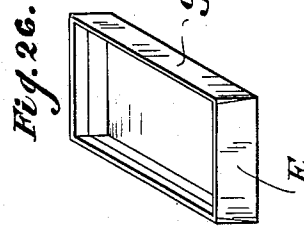
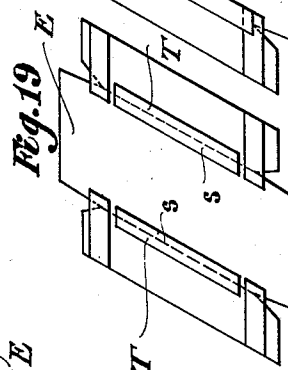
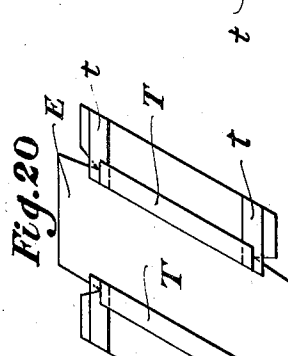
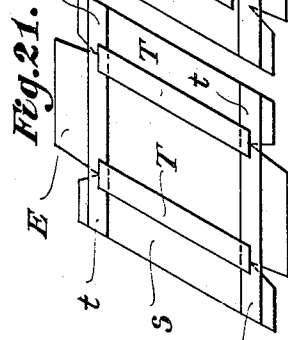
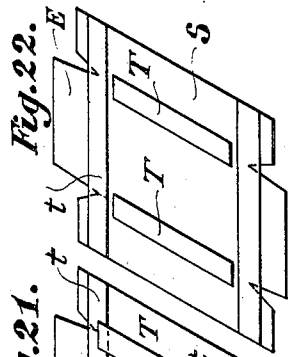
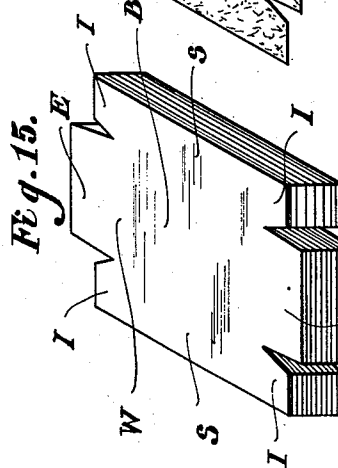
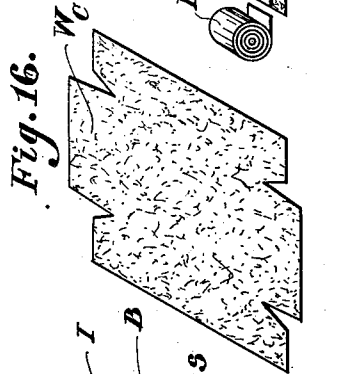
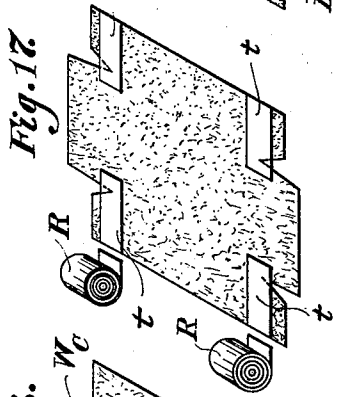
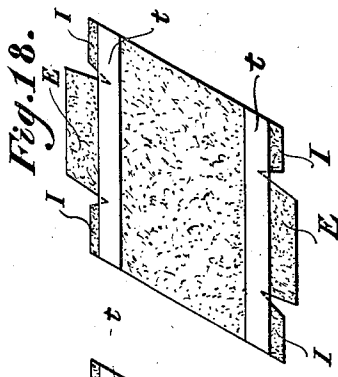
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METHOD OF PRODUCING AND APPLYING TABBED WRAPPERS

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2 Sheets-Sheet 2



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METHOD OF PRODUCING AND APPLYING TABBED WRAPPERS

Application filed July 21, 1928. Serial No. 294,483.

My invention relates to the art of applying to cartons, containers, and particularly to boxes, and especially to unstayed boxes, individual wrappers provided with reinforcing or staying elements or tabs.

In accordance with my invention, before, during, or after application of adhesive to the box-engaging surface of a wrapper, reinforcing elements are applied thereto along lines extending between corner notches of the wrapper and forming the boundaries of wrapper panels, as side panels, having turn-in flaps, each of which is adapted to engage respectively an adjacent wrapper panel during a subsequent box-wrapping operation; more specifically, the tabs are disposed to extend across or bridge the corner notches.

Further in accordance with my invention, to the box-engaging surface of the wrapper, before, or after, application of the aforesaid tabs, a second group of tabs are applied, which preferably extend across or bridge the notches; more particularly, the ends of the tabs of the first group lap tabs of the second group and preferably terminate short of the corner notches; more specifically, each tab of the first group laps and extends between a pair of tabs of the second secured to the same side or end panel of the wrapper.

My invention resides in the tabbed wrapper, preferably a one-piece wrapper, hereinafter described and claimed, the methods of producing or preparing it, and of its application to a box, or the like, particularly an unstayed box blank, as hereinafter described and claimed.

For an understanding of my invention, and for an illustration of various modes of practicing my method and the various forms of tabbed wrapper, reference is to be had to the accompanying drawings, in perspective, in which:

Fig. 1 is a stack of uncoated sheets.

Fig. 2 is a view of a wrapper in a later stage in which it is coated with adhesive.

Fig. 3 is a view of a wrapper in a later stage in which there are applied thereto tabs.

Fig. 4 is a view of a tabbed wrapper in register with an unstayed box blank, the

form block of a wrapping machine being indicated in dotted lines.

Figs. 5 to 7, inclusive, represent, respectively, the successive stages of the box wrapping and staying operation.

Fig. 8 is a view of a modified form of tabbed wrapper.

Fig. 9 is a perspective view of the tabbed wrapper of Fig. 8 in register with an unstayed box blank.

Figs. 10 to 14, inclusive, represent, respectively, the successive stages of the box wrapping and staying operation.

Fig. 15 is a view of a stack of uncoated wrappers.

Fig. 16 is a view of a wrapper in a later stage in which it is coated with adhesive.

Fig. 17 is a view of a wrapper in a later stage in which tabs are adhesively applied thereto.

Fig. 18 is a view in a later stage in which modified tab structure is applied thereto.

Fig. 19 is a later stage in the preparation of the wrapper shown in Fig. 17 in which additional tabs are applied thereto.

Fig. 20 is a modified form of tabbed wrapper.

Fig. 21 is a later stage in the preparation of the wrapper of Fig. 18, in which additional tabs are applied thereto.

Fig. 22 is a modified form of tabbed wrapper.

Figs. 23 to 26 inclusive, represent, respectively, the successive stages of the box staying and wrapping operation.

Fig. 1 represents a stack in one piece, individually notched or corner-cut wrappers W of suitable form, each comprising, for example, the end sections E and the side sections or panels S, the latter comprising the turn-in flaps I. The dotted lines of the figure are merely to indicate the boundaries of the several panels or sections and are not creases or scoring. Each wrapper may first be coated with adhesive, as glue, on the box-engaging surface, yielding, as in Fig. 2, a coated wrapper Wc, the application of the adhesive being made while the wrapper is still in the stack, Fig. 1, or, and preferably, after removal from the stack. Thereafter as indi-

cated in Fig. 3, one or more tabs T, of any suitable material, and of any suitable form or size, is or are applied to the box-engaging surface of the wrapper along the lines *s* forming the boundaries between the side panels S and the bottom panel B, and extending between the corner notches of the wrapper. In the example described, both sides of the tab T are free of adhesive before their application to the wrapper, the adhesive coating of the wrapper *Wc* serving to secure them. It will be understood, however, that either or both surfaces of the tabs may be coated with adhesive before application to the wrapper, or that the box-engaging faces of the wrapper and tabs may be substantially simultaneously coated as in Rider application Serial No. 227,144, filed October 19, 1927.

The tabbed wrapper has now been prepared for application to a box, and such application is preferably made promptly, while the coated wrapper *Wc* and its coated tabs are soft and pliable and before the adhesive coatings have dried, hardened or set. It will be understood, however, that the prepared wrappers may, as after setting of the adhesive, be stored for subsequent use, the adhesive coatings being reactivated by a suitable agent or agents as moisture, heat, etc.

A box or unstayed box blank is then brought into register with the tabbed wrapper and the coated faces of the wrapper and tabs are brought into contact with the box faces, and in the case of an unstayed box blank it is simultaneously brought to box form, wrapped and reinforced or stayed. Preferably the side panels S of the wrapper are wiped into engagement with the side walls of the box blank, which are, before or during the wiping operation, brought to a vertical position as shown in Fig. 5. The end flaps I are then turned inwardly into engagement with the end walls of the box, and immediately thereafter the end panels E of the wrapper are wiped into engagement with the end walls of the box in the usual manner. The portions of the wrapper projecting above the top of the walls of the box are turned inwardly and thereafter downwardly into engagement with the interior of the box in the usual manner to form the completed box as shown in Fig. 7. As shown most clearly in the cut-away portion of Fig. 6, the tabs T reinforce the lower edges or corners of the box formed by the intersection of the bottom of the box and the side walls thereof.

All the foregoing operations may be performed manually. Preferably, however, they will be performed by automatic mechanism. For example, the stack of wrappers *W*, Fig. 1, may be operated upon in an automatic adhesive-applying mechanism, such as, for example, of the general character disclosed in Nitsch et al. application, Serial No. 69,249, filed November 16, 1925, or in the adhesive-

applying unit G of Federwitz and Bailey application Serial No. 40,769, filed July 1, 1925, or Rider application Serial No. 227,144, filed October 19, 1927, or Rider application, Serial No. 294,436, filed July 21, 1928. The coated wrappers *Wc* may then be tabbed by any suitable mechanism, including such, for example, as generally of the character disclosed in Reifsnnyder and Schwerdtle Letters Patent No. 1,060,026, or Nitsch et al. Letters Patent No. 1,451,782, or aforesaid Federwitz et al. application Serial No. 40,769. Alternatively, the tabs may be coated and applied to the wrappers while the latter are being coated with adhesive by mechanism, such as, for example, that generally of the character shown in the aforesaid Rider applications.

The tabbed wrappers may then be applied to boxes or unstayed box blanks in any suitable wrapping machine, such as of the character disclosed in Smith Letters Patent Nos. 691,329 and 778,805, or the aforesaid Federwitz et al. patent No. 1,541,036; or in the wrapping machine *W* of the aforesaid Federwitz and Bailey application to which they are fed by a conveyor C. In any case, in the wrapping machine a tabbed wrapper and box or box blank *U* come into proper register with each other in proper relation to the form block structure shown in broken lines in Fig. 4 and comprising the form blocks *F* and *F'*, operated, as well understood, in timed relation, by the usual rods *f*, *f* and *f'*. During downward movement of the form blocks, the box blank is simultaneously wrapped and stayed as above described to form the wrapped and stayed box *U*.

A modification of my method of preparing a tabbed blank is illustrated in Figs. 8 to 14 inclusive. To the coated wrapper *Wc* of Fig. 2 is applied the tabs T along the lines *s* forming the boundaries between the side panels S of the wrapper and the bottom panel B thereof, in this modification the tabs T being of sufficient length to, at least partially, bridge the corner notches between the end panels I and the adjacent end wall E with which it is destined subsequently to engage. Preferably the tabs T are of sufficient length to extend the length of the side panel and beyond, and across the corner notches between the end flaps at the ends of the panel and adjacent end panels E. It will be understood, however, that the tab structure T may consist of one or more tabs extending along lines *S*. The tabbed coated wrapper *Wc* is brought into registering relation with a box or box blank and thereafter applied thereto substantially as above described and shown in Figs. 4 to 7 inclusive. During the turning in of the flaps I, as shown in Fig. 11, a portion of the tab T in engagement with the end panel E is pulled away from the end panel, to form with that portion bridging the corner notch, a trian-

gular section *d*, which during the folding up of the end panel E against the end wall of the box is moved into engagement with the end flap I, as is most clearly shown in Fig. 13, an enlarged detail view of the cut-away portion of Fig. 12.

A further modification of my method of preparing a tabbed wrapper is illustrated in Figs. 15 to 26. Referring to the drawings, Fig. 15 represents a stack of one-piece, individual, corner-cut wrappers W, each comprising end sections E and side sections S, the latter comprising turn-in flaps I. Each wrapper is, or may be, coated with adhesive on the box-engaging surface, yielding, as indicated in Fig. 16, a coated wrapper Wc. Before, during or after application of adhesive to the wrapper, one or more tabs *t*, of any suitable form, size and material, which may, as indicated, be severed from ribbon or rolls R as needed, is or are applied to the box-engaging surface of the wrapper to connect the end sections E and respectively adjacent side sections S by extending across or bridging at least a substantial part of the corner notches between them. The tabs *t* are preferably of sufficient width to engage the bottom panel or section E of the wrapper. Alternatively, the tabs *t* may extend substantially the entire width of the wrapper, connecting end flaps I to a common end panel E and bridging the corner notches between the end panel and the end flaps. To the coated wrapper Wc of Fig. 17 there may be applied along the lines *s*, tabs T, which, during the subsequent wrapping and staying operation, reinforce the lower edge of the box formed by the junction of the bottom and side walls thereof. As shown in Fig. 20, and, preferably, the tabs T at their ends overlap tabs *t*, preferably, however, terminating short of the corner-notch to prevent excess material at these points which would result in a bulge when applied to a box during the wrapping operation.

Similarly, to the tabbed wrapper of Fig. 18 there may be applied the additional tabs T, as shown in Figs. 21 and 22, which reinforce the lower side edge of a box to which it is applied. The tabs T are preferably, as shown in Fig. 21, of sufficient length to overlap the tabs *t*, preferably, however, terminating short of the corner notches for reasons above stated.

A box or unstayed box blank U is then brought into register with a tabbed wrapper, which may be any one of the modified forms shown in Figs. 19 to 22. For purposes of explanation, that of Fig. 20 is selected. During descent of the form blocks F and F' as hereinbefore described, the wrapper panels are in proper sequence brought into engagement with the walls of the box and with each other to simultaneously wrap and stay the box. The portions of the tabs *t* adhering to

the end panels E of the wrapper are pulled away therefrom during turning in of the flaps I and those portions together with the respective portions bridging the corner notches comprise sections which are brought into engagement with respective end flaps I during folding of the end walls E into engagement with the respective end walls of the box. The completed box as is most clearly shown in Fig. 25 is stayed at its vertical corner formed by the junction of the sides and end walls, and also along the lower side edges formed by the intersection of the bottom and side walls. When a wrapper of either of the modified forms shown in Figs. 21 or 22 is utilized the box is also, during the wrapping operation, stayed at the lower edges formed by the meeting of the end and bottom walls of the box.

For brevity in the appended claims the term "wrapper" is used in a generic sense and includes a one-piece wrapper, or a composite wrapper formed of several attached components; the term "box" is intended to comprise a stayed or unstayed box, box cover and an unstayed box blank; the term "bottom", as applied to the box, it will be understood, also includes the top section or panel thereof.

What I claim is:

1. A tabbed wrapper comprising a corner notched wrapper having reinforcing structure thereon which bridges the gap formed by the corner notches, and extends along lines between corner notches which form boundaries of wrapper panels having turn-in flaps.

2. A tabbed wrapper comprising a wrapper having tabs which extend along lines forming boundaries of wrapper panels having turn-in flaps and bridge the gaps formed by corner notches between said panels and adjacent panels.

3. A tabbed wrapper comprising a wrapper having adhesively attached thereto, tabs extending across the gaps formed by corner notches thereof, and other tabs disposed along lines extending between corner notches.

4. A tabbed wrapper comprising a wrapper having adhesively attached thereto, tabs extending across the gaps formed by corner notches thereof, and other tabs disposed in lapping relation to said first tabs and extending along lines between said corner notches.

5. A tabbed wrapper comprising a wrapper having adhesively attached thereto, tabs, each of which extends across at least one corner notch thereof, and other tabs, each of which, at least at one end, laps one of said first tabs and extends along the line between the corner notch bridged thereby and another corner notch.

6. A tabbed wrapper comprising a wrap-

per having one or more panels with turn-in flaps at the ends thereof, tab structure extending along a line forming a boundary of said panel, and tab structure applied to the turn-in flaps, the corner notches between the turn-in flap of said panel and panels with which they are destined to engage being bridged by tab structure.

7. A tabbed wrapper comprising a wrapper having one or more panels with turn-in flaps at the ends thereof, tabs connecting said turn-in flaps to adjacent panels with which they are destined to engage and bridging the corner notches therebetween, and tab structure extending along the line between said corner notches.

8. A tabbed wrapper comprising a wrapper having one or more panels with turn-in flaps at the ends thereof, tabs connecting said turn-in flaps to adjacent panels with which they are destined to engage and bridging the corner notches therebetween, and tab structure extending along the line between said corner notches and lapping said tabs.

9. A tabbed wrapper comprising a wrapper having one or more panels with turn-in flaps at the ends thereof, tabs connecting said turn-in flaps to adjacent panels with which they are destined to engage and bridging the corner notches therebetween, and tab structure extending along the line between said corner notches, lapping said tabs, and terminating short of said corner notches.

10. A tabbed wrapper comprising a wrapper having tabs, each of which extends across a pair of corner notches, and tabs, each of which extends along a line between the corresponding corner notches of said pairs thereof.

11. A tabbed wrapper comprising a wrapper having tabs, each of which extends across a pair of corner notches, and tabs, each of which extends along a line between the corresponding corner notches of said pairs thereof and laps the first of said tabs bridging said corresponding notches.

12. The method of preparing a tabbed wrapper which comprises, adhesively applying, to the box-engaging surface of a wrapper having one or more panels with turn-in flaps, tab structure extending along a line forming a boundary of said panel, and tab structure to the turn-in flaps thereof, the corner notches between said flaps and panels with which they are destined to engage being bridged by tab structure, and the adhesive securing said tab structure being simultaneously fluid.

13. The method of preparing a tabbed wrapper which comprises, adhesively applying, to the box-engaging surface of a wrapper having one or more panels with turn-in flaps, tab structure extending along a line forming a boundary of said panel, and tab structure bridging the corner notches be-

tween said turn-in flaps and panels with which they are destined to engage, the adhesive securing said tab structures being simultaneously fluid.

14. The method of applying a tabbed wrapper to a box which comprises, adhesively securing tab structure to the box-engaging face of the wrapper along lines forming boundaries of wrapper panels having turn-in flaps, and before setting of the adhesive, applying the wrapper and tab structure to the exterior of a box with the tab structure overlying the box edges formed by the box bottom and the walls covered by said wrapper panels.

15. The method of applying a tabbed wrapper to a box which comprises, adhesively securing tab structure to the box engaging face of the wrapper along lines forming boundaries of wrapper panels having turn-in flaps, bridging the corner notches between said flaps and wrapper panels with which they are destined to engage by said structure, and before setting of the adhesive, applying the wrapper and tab structure to the exterior of a box with the tab structure overlying the box edges formed by the box bottom and the walls covered by said wrapper panels, and with the corner-notch bridging portions thereof overlying trihedral corners of the box.

16. The method of applying a tabbed wrapper to a box which comprises, adhesively securing to the box-engaging face of the wrapper, tabs extending across corner notches thereof and tabs extending along lines between said corner notches, and before setting of the adhesive, applying the wrapper and tabs to the exterior of a box with the first-named tabs overlying bottom edges of the box and with the bridging portions of the second-named tabs overlying trihedral corners of the box.

17. The method of applying a tabbed wrapper to a box which comprises, adhesively securing to the box-engaging face of the wrapper in lapping relation, tabs extending across the corner notches thereof and tabs extending along lines between the corner notches, and before setting of the adhesive, applying the wrapper and tabs to the exterior of a box with the first-named tabs overlying bottom edges of the box and with the bridging portions of the second-named tabs overlying trihedral corners of the box.

18. The method of applying a tabbed wrapper to a box which comprises, adhesively securing to the box-engaging face of the wrapper in lapping relation, tabs extending across the corner notches thereof and tabs extending along lines between the corner notches, in any sequence, or simultaneously, applying adhesive to the box-engaging faces of said tabs and wrapper, and before setting

of any of the adhesive, applying the wrapper and tabs to a box.

19. A tabbed wrapper comprising a wrapper having tabs thereon at least one of which is disposed along a line extending between corner notches at opposite ends of a wrapper panel having turn-in flaps.

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