

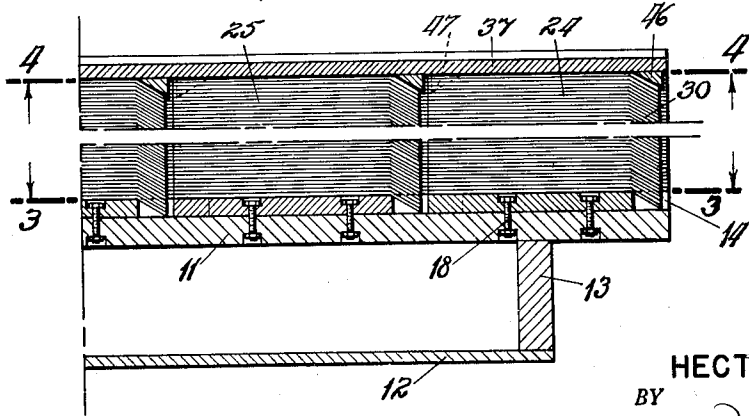
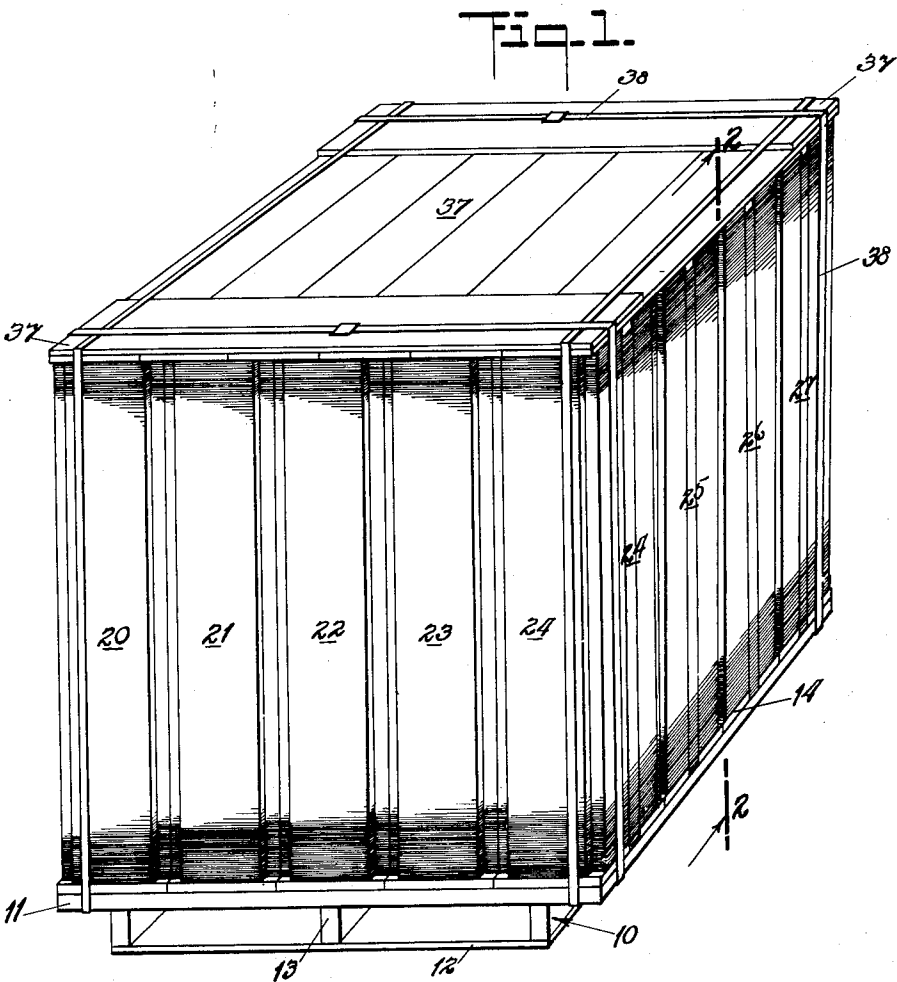
Oct. 23, 1951

H. AUDINO
PACKAGE OF BOX BLANKS

2,572,584

Filed Sept. 17, 1948

2 SHEETS—SHEET 1



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2 SHEETS—SHEET 2

Fig. 3.

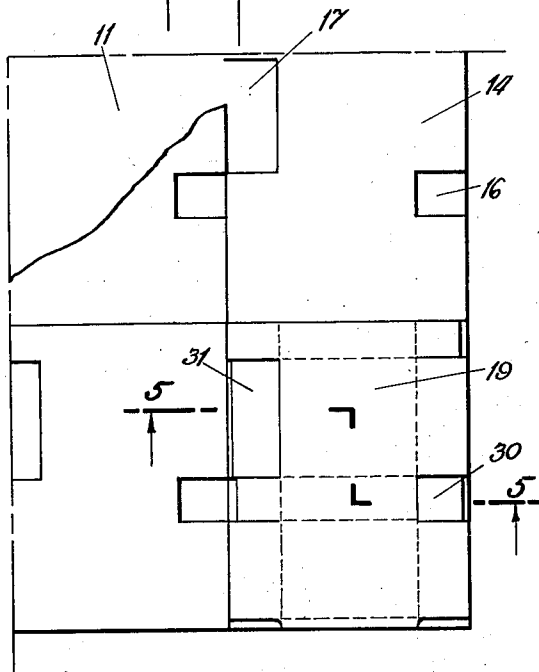


Fig. 4.

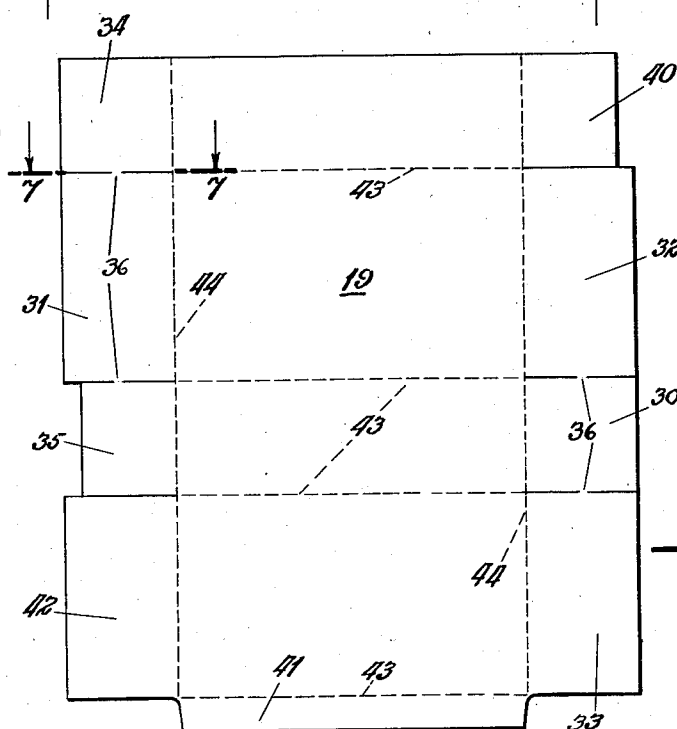
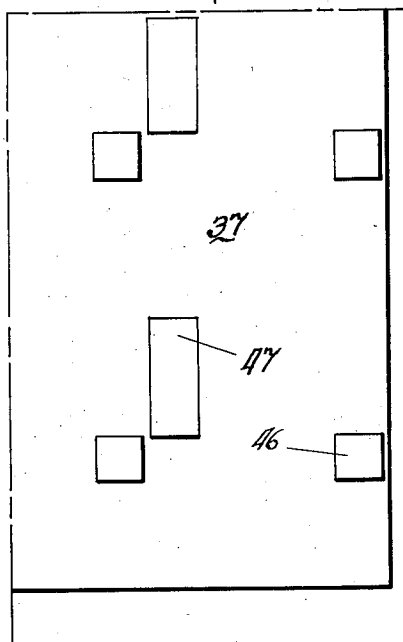


Fig. 5.

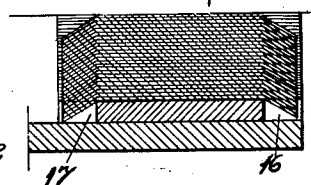


Fig. 7.

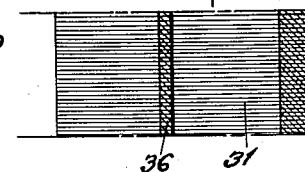


Fig. 6.

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PACKAGE OF BOX BLANKS

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8 Claims. (Cl. 206—60)

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The present invention relates to a method and apparatus for the shipment of box blanks and the like. In the past it has been the custom to ship box blanks in a folded form, that is, one edge of the blank was glued to the opposite edge and the blanks shipped in this folded form. This resulted in there being three thicknesses of the material at the point where the flap of one side was glued to the opposite side. Further, the blanks thus folded are customarily packed in cartons and handled as individual packages when loading either a truck or a railroad freight car. By my present invention the box blanks are left unfolded, the gluing of the side edges being done at the point of utilization, and the blanks are piled upon a skid or pallet and handled without any need for or use of the cartons previously employed. Thus the wastage involved in the use of such cartons is avoided, the density of the resulting bulk package is greatly increased over that of the customary carton, and mechanized means of handling can be employed to advantage.

It is an object of my invention to provide a package of box blanks which consists of the blanks flat and unfolded or mounted on a skid or pallet for easy handling thereof.

It is another object of my invention to provide a method of handling box blanks which requires no packing of blanks in containers, such as corrugated cartons, and which, therefore, eliminates the cost of such containers.

It is a further object of my invention to provide a package of box blanks assembled in piles on a skid or pallet in a dense compact unit, and retained in their position by utilization of the sealing flaps of the box blanks.

It is a still further object of my invention to provide a method of handling box blanks which is readily performed with simple apparatus and which materially reduces the cost of shipping, handling and storing while at the same time assuring that the blanks will remain in proper condition for utilization.

Other objects and features of my invention will be apparent from the following description when taken in connection with the attached drawings in which—

Figure 1 is a perspective view of a pallet showing a plurality of box blanks piled thereon in a number of individual piles in accordance with the method of my invention;

Figure 2 is a fragmentary broken sectional view of the assemblage of Figure 1 illustrating the utilizing the box blank flaps to hold the piles of box blanks in place on the pallet;

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Figure 3 is a top plan view of a portion of a pallet such as that of Figure 1, illustrating a number of auxiliary platforms provided in accordance with my invention and showing the mode of interlocking box blanks upon one of these auxiliary platforms;

Figure 4 is a bottom plan view of a cover member which may be utilized for holding the stacked box blanks in position on a skid or pallet;

Figure 5 is a vertical elevation along the plane of the line 5—5 of Figure 3 showing the mode of bending the flaps of the box blank downwardly into recesses in the auxiliary platform on the overlying blanks to thereby lock the pile of blanks together and prevent shifting of the box blanks in handling and shipping;

Figure 6 is a top plan view of the particular box blank which has been used to illustrate the invention; in this view there is also shown a mode of cutting the sealing flaps which serves to supplement the interlocking action of the flaps; and

Figure 7 is a fragmentary vertical cross-section along the plane of the line 7—7 of Figure 6, showing the alignment of the projections left by this method of cutting when the box blanks are stacked upon the skid or pallet, and interlocked.

Referring now to the drawings, there is shown in Figure 1 a pallet 10 comprising the platform 11, the base 12, and the supports 13. The platform 11 is here shown as a solid member. It may, however, be and frequently is, a slat platform and though shown as relatively thick, may be made of corrugated steel and relatively thin. It should be noted at this point that the trade commonly makes a distinction between a skid and a pallet in that the pallet is provided with the base member 12 while the skid is not. The pallet is preferred because due to the utilization of the base 12 loaded pallets may be stacked one upon the other while skids cannot ordinarily be so stacked. Skids additionally are normally not provided with the central supporting member 13 and may, therefore, be utilized in connection with a platform lift truck, whereas pallets are normally provided with this central support and are used with the forked type of lift truck.

In accordance with my invention there are provided on the platform 11 of the skid or pallet, a plurality of small auxiliary platforms 14 (see Figure 3) or in some instances a single auxiliary platform. The platforms 14 are provided with cutouts or notches 16 and 17 at their edges, these cutouts corresponding in size and shape to selected ones of the flaps of the particular box blank which is to be handled. It will, of course,

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be understood that the blank illustrated in the drawings, and particularly in Figure 6, is one of a wide variety both as respects the arrangement of the score lines for folding and the cuts to form the sealing flaps and as respects the size and shape of the box blanks. It will also be understood that in some instances only a single notch will be formed in the auxiliary platform for each pile of box blanks rather than the two which have been illustrated herein, and that in general the number of cutouts will depend upon the type of box blank and its arrangement of sealing flaps.

In the particular instance shown, particularly in Figure 1, the skid or pallet has 20 piles of box blanks 19 (Figure 6) arranged thereon of which, of course, only eight piles appear in Figure 1, these eight being designated respectively, 20, 21, 22, 23, 24, 25, 26, and 27. The number of piles or stacks of blanks which may be placed upon the skid is, of course, dependent upon the size of the box blanks and is limited by the conventional considerations applicable to both skids and pallets not provided with interlocking forms but handling the same type of product.

The auxiliary platforms may be fastened to the platform 11 in any suitable manner. In Figure 2 a wooden pallet platform is utilized and the auxiliary platforms 14 also made of wood are fastened to the pallet platform by means of bolts 18. However, as has been indicated above, the pallet platform may be made of steel, either corrugated or otherwise, and in this event the auxiliary platforms 14 may be fastened to the pallet platform 11 by machine screws which fit into drilled and tapped holes in the pallet platform.

A typical box blank has been illustrated in Figure 6, and this form of box blank has been shown in the other figures of the drawing. It is to be understood, however, that this box blank is merely one example of the utilization of my invention and that many other forms may be handled and transported by the methods hereinabove and hereinafter disclosed. The box blank 19 of Figure 6 comprises a main body portion provided with the usual glue flap 41 and with the sealing flaps 30, 31, 32, 33, 34, 35, 40 and 42. The body of the blank 19 is divided in various sections by the score lines 43 and the flaps are joined to the body portion and at the point of juncture of the sealing flaps with the body portions score lines 44 are provided. As has been indicated, in the particular instance, the flaps 30 and 31 have been selected to be forced downwardly into the notches 16 and 17 of the auxiliary platforms, thereby interlocking the blanks with the platforms and likewise interlocking the upper blanks with those lying below them. It is preferable that the auxiliary platforms 14 and the stacks of blanks 19 be located on the skid or pallet with the juncture line 44 between the body of the blank and the flaps 30 and 31 parallel to the direction of movement which is normally given to the skid or pallet during transportation. This is so because the chief interlocking action between the flaps 30 and 31 and the notches 16 and 17 is provided in the construction mentioned, that is parallel to the score line 44.

The blanks may be assembled on the pallet by simply stacking them in the manner indicated above and then tapping the flaps 30 and 31, for example with a hammer to cause these flaps to fall downwardly, as indicated particularly in Figure 2.

In some instances it is desirable to slightly

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modify the mode of cutting the box blank in order to provide a greater resistance to shifting of the box blanks in a direction parallel to the edges of the foldable flaps which are to be interlocked and locked to the auxiliary platform. As is illustrated in Figures 6 and 7, the flaps 30 and 31 may be cut from the adjacent flaps 32, 33, 34 and 35 respectively, by utilizing a knife having a small nick in the blade thereby leaving the portions adjacent the center of the flap joined to the adjacent flap. These juncture points indicated particularly at 36 (Figures 6 and 7) will be broken when the flaps are forced out of the plane of the box blank and will thus form relatively rough edges which will prevent movement of the box blank on the underlying blank or blanks.

After the piles of blanks have been assembled, as is hereinbefore described, a cover 37 (Figure 4) may be placed thereon, as is illustrated particularly in Figure 1, the cover 37 being held in position in any suitable manner, such, for example, as by the metal strapping 38. In order to further assure that there will be no slippage of the blanks upon the skid or pallet, the cover 37 may be provided with wedge-shaped pieces 46 and 47 corresponding, respectively, in area and position to those flaps 30 and 31 which are bent out of the planes of the box blanks. Thus it will be impossible, even if the loaded pallet or skid be inverted, for the individual flaps to be moved back into the plane of their box blanks and permit slippage of the box blanks one upon the other. It has, however, been found that in practice the use of these wedges on the cover is in general unnecessary.

It will, of course, be understood that the flaps 30 and 31 are given no permanent set and may readily and easily be restored to their original position in the plane of the box blank prior to the folding and gluing of the blank into a completed box.

While I have described a preferred embodiment of my invention, it will be understood that modification thereof may be utilized within the scope and spirit of my invention. Consequently, I wish to be limited not by the foregoing description but, on the contrary, solely by the claims granted to me.

What is claimed is:

1. A package of similar box blanks of the type having sealing flaps which comprises a platform having at least one cutout therein for each vertical stack of box blanks, a plurality of stacks of box blanks located upon said platform with the flaps in vertical registration and with at least one of the sealing flaps of the lowermost blank of each stack displaced out of the plane of its blank and into the plane of the platform cutout, the flaps vertically registered with said one flap being displaced out of the plane of their respective blanks and into the plane of lower blanks in the stack.

2. A package of similar box blanks of the type having sealing flaps which comprises a platform having at least one cutout therein for each vertical stack of box blanks, a plurality of stacks of box blanks located upon said platform with the flaps in vertical registration and with selected ones of the sealing flaps of the lowermost blank of each stack displaced out of the plane of their blanks and into the plane of the platform cutout, the remaining flaps vertically registered with said selected flaps being displaced out of the plane of

their respective blanks and into the plane of lower blanks in the stack.

3. A package of similar box blanks of the type having sealing flaps which comprises a platform having at least one cutout therein for each vertical stack of box blanks, a plurality of stacks of box blanks located upon said platform with the flaps in vertical registration and with at least one of the sealing flaps of the lowermost blank of each stack displaced out of the plane of its blank and into the plane of the platform cutout, the remaining flaps vertically registered with said one flap being displaced out of the plane of their respective blanks and into the plane of lower blanks in the stack, and a cover on said stacks of blanks, said cover being provided with wedge-shape members which enter into the spaces resulting from the displacement of the flaps of the uppermost blanks.

4. A package of similar box blanks of the type having sealing flaps which comprises a platform having at least one cutout therein for each vertical stack of box blanks, a plurality of stacks of box blanks located upon said platform with the blanks and flaps in vertical registration and with selected ones of the sealing flaps of the lowermost blank of each stack displaced out of the plane of their blanks and into the plane of the platform cutout, the remaining flaps vertically registered with said selected flaps being displaced out of the plane of their respective blanks and into the plane of lower blanks in the stack, and a cover on said stacks of blanks, said cover being provided with wedge-shape members which enter into the spaces resulting from the displacement of the flaps of the uppermost blanks.

5. A package of similar box blanks of the type having sealing flaps which comprises a skid or pallet having a platform, a plurality of auxiliary platforms fixed to said skid platform, each said auxiliary platform having at least one cutout at an edge thereof, a stack of registered box blanks extending vertically upward from each said auxiliary platform, said stack of blanks having sealing flaps in vertical registration at least one of which registers with said edge cutout of said underlying auxiliary platform, said sealing flaps being displaced out of the plane of their respective blanks so that the lowermost of the sealing flaps extend into said edge cutouts and the upper ones of said sealing flaps extend into the planes of blanks lower in the stack.

6. A package of similar box blanks which comprises a skid or pallet having a platform, a plurality of auxiliary platforms fixed to said skid platform, each platform having the same dimensions as box blanks to be stacked thereon, said platforms being arranged to occupy the entire area of the skid platform, each said auxiliary platform having at least one cutout at an edge thereof, a stack of registered box blanks extending vertically upward from each said auxiliary platform, said stack of blanks having sealing flaps in vertical registration with said edge cutout of said underlying auxiliary platform, said sealing flaps being displaced out of the plane of their respective blanks so that the lowermost of the

sealing flaps extend into said edge cutout and the upper ones of said sealing flaps extend into the planes of blanks lower in the stack.

7. A package of similar box blanks of the type having sealing flaps which comprises a skid or pallet having a platform, a plurality of auxiliary platforms fixed to said skid platform, each platform having the same dimensions as box blanks to be stacked thereon, said platforms being arranged to occupy the entire area of the skid platform, each said auxiliary platform having at least one cutout at an edge thereof, a stack of registered box blanks extending vertically upward from each said auxiliary platform, said stack of blanks having sealing flaps in vertical registration with said edge cutout of said underlying auxiliary platform, said sealing flaps being displaced out of the plane of their respective blanks so that the lowermost of the sealing flaps extend into said edge cutout and the upper ones of said sealing flaps extend into the planes of blanks lower in the stack, and a cover extending over said stacks of blanks, said cover being provided with wedge-shape members which enter into the spaces resulting from the displacement of the flaps of the uppermost blanks.

8. A package of similar box blanks which comprises a skid or pallet having a platform, a plurality of auxiliary platforms fixed to said skid platform, each platform having the same dimensions as box blanks to be stacked thereon, said platforms being arranged to occupy the entire area of the skid platform, each said auxiliary platform having at least one cutout at an edge thereof, a stack of box blanks extending vertically upward from each said auxiliary platform, said stack of blanks having sealing flaps in vertical registration with said edge cutout of said underlying auxiliary platform, said box blanks being so cut that small uncut areas join the sealing flaps overlying the platform cutouts to adjacent portions of the box blank, said registering sealing flaps being displaced out of the plane of their respective boxes so that said uncut portions are broken and the lowermost of the sealing flaps extend into said edge cutout and the upper ones of said sealing flaps extend into the planes of blanks lower in the stack, the rough edges resulting from breaking said uncut portions serving to increase the locking effect between said flaps and said platform cutouts and between said flaps and the lower box blanks in said stack.

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