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W. W. HOLES

2,483,583

MULTIPLE COMPARTMENT BOX

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FIG. 1

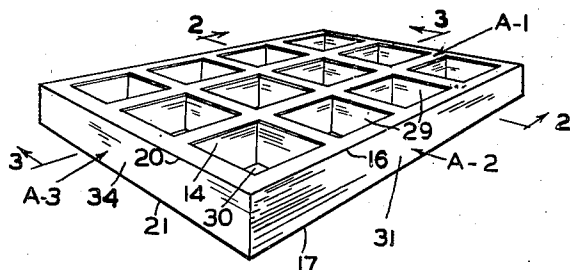


FIG. 5

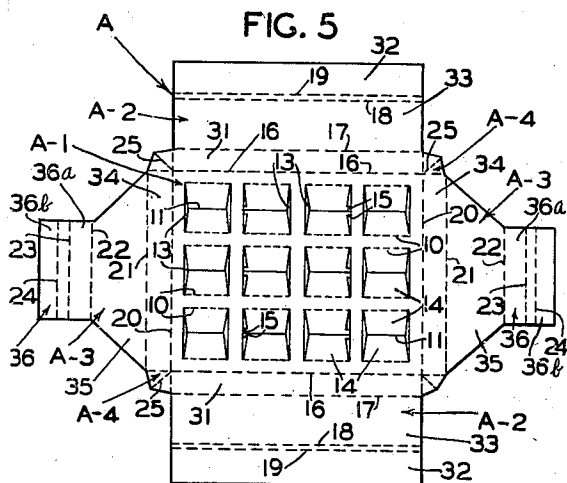


FIG. 6

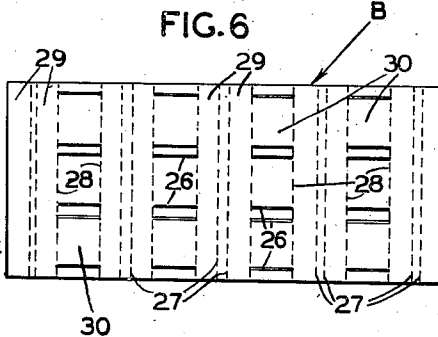


FIG. 2

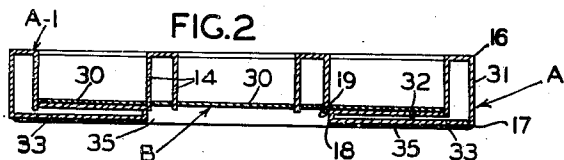


FIG. 3

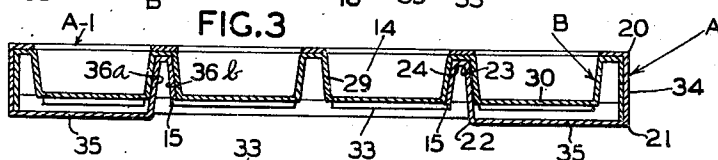
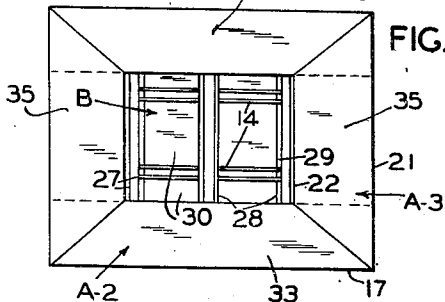


FIG. 4



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MULTIPLE COMPARTMENT BOX

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12 Claims. (Cl. 229-28)

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My invention relates to a multiple compartment box adapted to be shipped knocked down and readily assembled.

There are many instances where a multiple compartment box of inexpensive construction is required. In any place where removable numbers, letters, price cards, and the like are used, a multiple compartment container for storing the unused inserts is highly desirable.

It is an object of my invention to provide a novel, strong, inexpensive box made of sheet material having multiple compartments.

It is a further object to provide a multiple compartment box composed entirely of two pieces of sheet material.

More specifically it is an object to provide a multiple compartment box adapted to be made from any inexpensive, rigidly pliant sheet material, such as cardboard, and adapted to be shipped knocked down and also adapted to be readily assembled.

These and other objects and advantages of my invention will more fully appear from the following description made in connection with the accompanying drawings wherein like reference characters refer to the same or similar parts throughout the various views and in which:

Fig. 1 is a top perspective view of the assembled box;

Fig. 2 is a transverse sectional view taken substantially on the line 2-2 of Fig. 1;

Fig. 3 is a longitudinal sectional view taken substantially on the line 3-3 of Fig. 1;

Fig. 4 is a bottom view of the assembled box;

Fig. 5 is a plan view of the main blank before being folded, in which score lines are shown as dotted and cuts are shown as full; and

Fig. 6 is a plan view of the filler blank before being folded in which score lines are shown dotted and cuts are shown full.

Generally speaking, my multiple compartment box is made of two pieces of sheet material, such as cardboard, to form a main blank, designated as an entirety by the letter A, and a filler blank designated as an entirety by the letter B.

As shown in Fig. 5, main blank A has a rectangular central section designated in its entirety as A-1, a pair of side flaps designated as A-2, a pair of end flaps designated as A-3, and four corner flaps designated as A-4.

The central section A-1 has a series of relatively short longitudinal score lines made in the top surface thereof to form fold lines 10. Said fold lines are longitudinally spaced to form transverse rows and pairs of longitudinal rows as shown in Fig. 5. Longitudinal cuts 11 are made along lines which are medially disposed between adjacent fold lines 10 of the various pairs and these cuts 11 are co-extensive and parallel with said fold lines 11. Transverse cuts 13 are made

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between the extremities of each pair of longitudinal fold lines 10 forming longitudinal wings 14 in opposed pairs. These wings 14 in the transverse row second from each end of section A-1 have small tab members 15 for interlocking with diminished end portions 36 of end flaps A-3 as will appear later. Except for these tabs the ends of wing members 14 are cut angularly inward toward the free edges thereof, leaving small triangular cut-outs adjacent the end portions of the pairs of flaps as shown in Fig. 5.

The side flaps A-2 extend outward from the sides of said central section A-1 and are connected integrally therewith. Longitudinal scores forming fold lines 16, 17, 18, and 19 are made in the top surfaces of side flaps A-2.

The end flaps A-3 extend outwardly from the ends of said central section A-1 and have gradually diminishing sections 35 and diminished end portions 36. These diminished end portions 36 are adapted to interlock with tabs 15 as will appear later. Transverse scores forming fold lines 20 and 21 are made on the top surfaces of end flaps A-3, and scores forming fold lines 22, 23, and 24 are made in the bottom surfaces of end flaps A-3. Angular score lines 25 are made in the bottom surfaces of corner flaps A-4.

Filler blank B is rectangular in shape and has longitudinal cuts therein to form slits 26 slightly shorter than the fold lines 10 and adapted to receive the ends of wings 14 when the box is assembled, as will appear later. Pairs of longitudinally spaced transverse scores forming fold lines 27 are made in the top surface of blank B. Intermediate adjacent pairs of fold lines 27 more widely spaced pairs of scores are made in the bottom surface of blank B to form fold lines 28.

In the assembly of the multiple compartment box filler blank B is folded up on score lines 28 and down on score lines 27 to form a corrugated filler sheet with upstanding webs 29 and lower webs 30. Wing members 14 of main blank A are folded down along fold lines 10 to form rectangular apertures or windows in the central section A-1. Main blank A is placed over filler blank B, and wings 14 are fitted into corresponding slits 26 forming rigid compartment sides and bottoms, the upstanding webs 29 adjacent the lower webs 30 forming compartment ends. The side flaps A-2 are folded down on fold lines 16 to form box sides 31. Then flaps A-2 are folded in on fold lines 18 and 19 forming an underlying supporting flap 32, and then flaps A-2 are folded in on fold lines 17 to form box bottom portions 33. Supporting flaps 32 engage the bottom surfaces of lower webs 30 between the downwardly protruding ends of wings 14 in the row of compartments adjacent the sides of the box, as shown in Fig. 2, and interlock between said wings 14.

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Corner flaps A—4 are folded in on fold lines 25 and end flaps A—3 are folded down on fold lines 29 and in on fold lines 21 to form box ends 34 and overlapping bottom sections 35 of the box as shown in Figs. 4 and 5. The diminished end portions 36 of flaps A—3 are folded on fold lines 23 and 24 to form upstanding webs 36a and 36b, said webs being fitted into the corrugations second from the ends of filler blank B, as shown in Fig. 3. The lower edge of web 36b abuts the top surface of tabs 15 on wings 14 forming an interlocking connection for holding filler blank B in position and for keeping the box rigid. It will be noted that no glue whatever is used in making this multiple compartment box.

It will be seen that there has been provided a multiple compartment box made entirely from two pieces of inexpensive sheet material, such as cardboard or sheet metal. After these sheets have been cut and scored to form blanks A and B, they may be shipped in the flat knocked-down form to conserve shipping space. These boxes may be easily assembled, as previously described. The corrugated filler sheet B interlocked between the box top and box bottom segments gives the box great strength and rigidity; the box ends and box sides add substantially to the strength and rigidity and aid in making a box having a pleasing and neat appearance. No glue or other adhesive material is required to hold the box together because of the interlocking construction. This construction is adapted for sheet metal material as well as for cardboard or other material which can be bent and will rigidly retain a desired form. There is no limitation on the number of compartments that can be formed nor in the size of the box, as my invention is adapted to be used on any size sheets.

It will of course be understood that various changes may be made in the form, details, arrangement, and proportions of the various parts without departing from the scope of my invention.

I claim:

1. A multiple compartment box including a sheet cut and bent to form a multiplicity of windows and downwardly projecting opposed wings forming side compartment walls below said windows and a corrugated sheet having portions located below said first mentioned sheet and forming compartment bottoms and compartment end walls below said windows, said corrugated sheet having slits therein receiving portions of said wings.

2. A multiple compartment box including a sheet having a top central section cut and bent to form a multiplicity of windows and downwardly projecting opposed wings forming side compartment walls below said windows, said sheet also having side and end flaps bent downwardly to form box sides and ends, and a corrugated sheet having portions located below said first mentioned sheet and forming compartment bottoms and compartment end walls below said windows, said corrugated sheet having slits therein receiving portions of said wings.

3. A multiple compartment box including a sheet having a top central section, side and end flaps bent downwardly to form box sides and ends, said flaps having underlying projections which extend below said top central section to form box bottom sections, said top central section being cut

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and bent to form a multiplicity of windows and downwardly projecting opposed wings forming side compartment walls below said windows, and a corrugated sheet having portions thereof interposed between said top and said bottom sections of said first mentioned sheet and forming compartment end walls and compartment bottoms below said windows, said corrugated sheet having slits therein receiving portions of said wings, said end flaps being adapted to interlock with said corrugated sheet.

4. A multiple compartment box comprising a main sheet forming a box top, box sides, box ends, and a box bottom, said top being cut and bent to form a multiplicity of windows and opposed wings projecting below said windows and forming compartment sides, and a corrugated sheet interposed between said box top and said box bottom and forming below said windows compartment bottoms and compartment ends, said compartment bottoms being slit to take such compartment sides.

5. A multiple compartment box comprising a transversely corrugated sheet, the lower web of the corrugations forming compartment bottoms and the upstanding webs of said corrugations forming compartment end walls, and a second sheet having a central fenestrated top section, sides and end flaps integrally formed therewith and bent downwardly respectively from the sides and ends thereof forming box sides and box ends, said top section overlying said corrugated sheet and having a plurality of opposing wings cut therein and bent downwardly therefrom forming compartment sides, the lower web of said corrugations having longitudinal slits receiving the lower portions of said wings, said side and end flaps being bent inwardly at the lower extremities of said box sides and ends to form box bottom segments and interlocking with said corrugated sheet to give the box stability and rigidity.

6. A multiple compartment box having in combination a transversely corrugated filler sheet and an interlocking cooperating main sheet, said main sheet comprising a fenestrated top central section, end flaps, and side flaps, said top section being cut to form compartment windows and longitudinal wings, said wings being bent downwardly to form compartment sides, said side flaps being folded along the longitudinal sides of the top section to form box sides and being folded at the lower extremities of said sides to form box bottom segments, the free ends of said side flaps being folded back upon themselves to form supporting members, the end flaps being folded to form box ends and at the lower extremities of said box ends being folded to form interlocking box bottom segments disposed in spaced relation to said top section and underlying said first mentioned box bottom segments, said transversely corrugated filler sheets being interposed between said top section and said bottom segments of the main sheet, the lower webs of the said corrugations forming compartment bottoms and the upstanding webs of said corrugations forming compartment end walls, said bottom webs being longitudinally slotted to receive said downwardly disposed wings, and means for interlocking the second mentioned bottom segments.

7. A multiple compartment box having in combination a transversely corrugated filler sheet and an interlocking cooperating main sheet, said main sheet comprising a fenestrated top central section, end flaps, and side flaps, said side flaps being folded along the sides of the top section

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to form box sides and being folded at the lower extremities of said sides to form box bottom segments spaced from said top section, the end flaps being folded to form box ends, and at the lower extremities of the box ends, being folded to form interlocking box bottom segments spaced from said top section and underlying said first mentioned box bottom segments, said top section being cut and bent to form compartment windows and a multiplicity of opposed pairs of longitudinal wings, said wings forming compartment sides and certain of said wings having projecting interlocking tabs integrally formed thereon, said filler sheet being interposed between said top section and said bottom segments of the main sheet, the lower web of said corrugation forming compartment bottoms and the upstanding webs forming compartment end walls, said bottom webs being longitudinally slotted to take said downwardly disposed wings and said tabs cooperating with said second mentioned bottom segments and with said corrugated sheet to form an interlocked rigid structure.

8. A multiple compartment box having in combination a transversely corrugated filler sheet and an interlocking, cooperating main sheet, said main sheet comprising a fenestrated top central section, end flaps, and side flaps, said top section being cut and bent to form compartment windows and opposed longitudinal wings, said wings forming compartment sides, the end flaps being folded to form box ends and at the lower extremities of said box ends being folded to form box bottom segments disposed in spaced relation to said top, said transversely corrugated filler sheet being interposed between said top section and said bottom segments of the main sheet, the lower webs of said corrugated sheet forming compartment bottoms and the upstanding webs of said corrugated sheet forming compartment end walls, said bottom webs having longitudinal slits receiving said downwardly disposed wings, the said side flaps being folded along the longitudinal sides of said top section to form box sides and being folded at the lower extremities of said sides to form other box bottom segments, the free ends of said flaps being folded back upon themselves to form longitudinal supporting members embracing the lower surfaces of the particular compartment bottoms adjacent the sides of the box, the lower portions of certain of said wings interlocking with said longitudinal supporting members.

9. The structure defined in claim 8 and means for interlocking said first mentioned box bottom segments to form a rigid structure.

10. A multiple compartment box knocked down for shipment and storage, comprising a main blank and a filler blank, said main blank having a central section, side flaps, and end flaps, said central section having a plurality of longitudinally opposed wing members cut therein adapted to be bent downward to leave a plurality of compartment windows and to form compartment sides, the said side flaps being adapted to fold downwardly along the sides of the said central section and being adapted to be folded again to form bottom segments in spaced relation to said central top section, the said end flaps being adapted to be bent down to form box ends and further adapted to be bent to form additional bottom segments for said box, the said filler blank being adapted to be bent to form a transversely corrugated member adapted to be placed between

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said bottom segments and said top section to form ends and bottoms for said compartments and having longitudinal slits in the portion thereof adapted to form compartment bottoms, said slits being adapted to receive said opposed wing members.

11. A box knocked down for shipment comprising two pieces of sheet material, a main sheet and a filler sheet, said main sheet having a central section, side flaps, and end flaps, said central section having a plurality of longitudinally opposed wing members cut therein, adapted to be bent downwardly to leave a plurality of compartment windows and to form compartment sides, the wing members in the transverse rows second from the ends having interlocking tabs integrally formed therewith on the lower corners nearest the box ends, said side flaps being adapted to fold downwardly along the sides of said central section and being adapted to be folded again to form bottom segments in spaced relation to said central top section, the said end flaps being adapted to be bent down to form box ends and further adapted to be bent to form additional bottom segments which are adapted to interlock with the interlocking tabs on said wings, the said filler sheet being adapted to form a transversely corrugated member adapted to be interposed between said bottom segments and said top section to form compartment ends and compartment bottoms and having longitudinal slits in said bottom portions thereof, said slits being adapted to receive said opposed wing members.

12. A box knocked down for shipment comprising two pieces of sheet material, a main sheet and a filler sheet, said main sheet having a central section, side flaps, and end flaps, said central section having cuts therein to form longitudinally opposed wing members and a plurality of score lines to form fold lines at the connected portion of said wing members, adapting said wing members to be bent downwardly to leave a plurality of compartment windows and to form compartment sides, said side flaps being scored longitudinally to form a plurality of fold lines adapting said side flaps to form box sides and box bottom segments in spaced relation to said central top section, the said end flaps having a plurality of score lines to form transverse fold lines and being diminished gradually toward the ends thereof to form a diminished, interlocking portion, said end flaps being adapted to be bent along said transverse fold lines to form box ends and underlying interlocking box bottom segments, the said filler sheet having a plurality of spaced, transverse score lines along which the said filler sheet may be bent to form corrugations, said corrugations being adapted to be interposed between said bottom segments and said top section to form compartment ends and compartment bottoms and having longitudinal slots cut in the compartment bottom portions adapted to receive said opposing wing members.

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REFERENCES CITED

The following references are of record in the file of this patent:

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