Jan. 21, 1964 F. W. NOBLE 3,118,588

CONTAINERS MADE OF COATED SHEET MATERIAL

Filed Nov. 21, 1961 2 Sheets-Sheet 1

Fig. 1

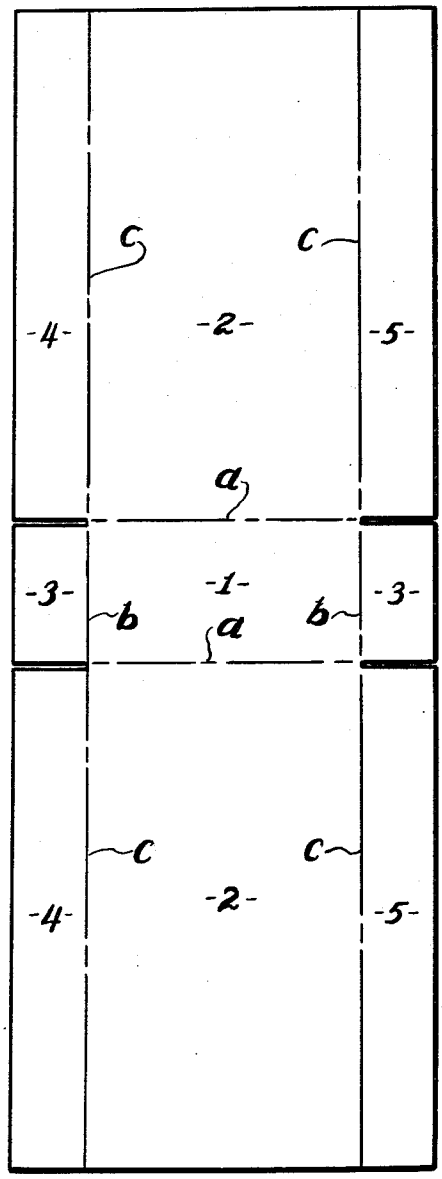


Fig. 2

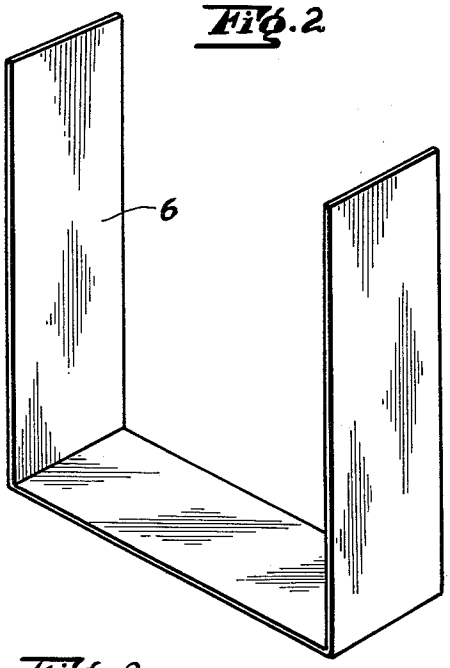
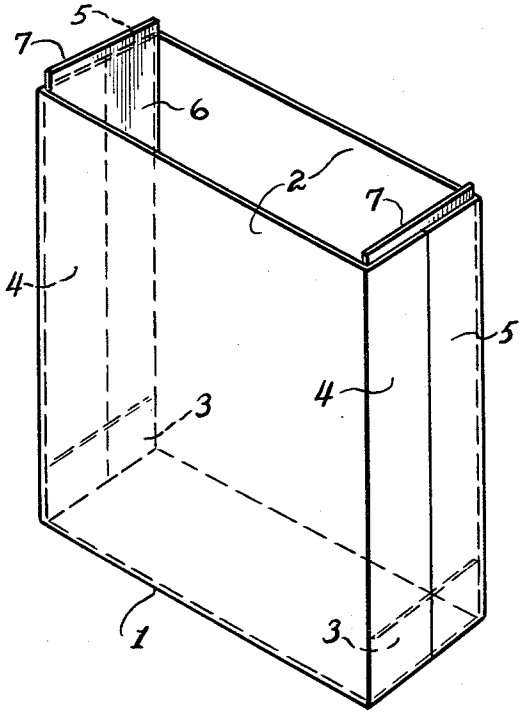


Fig. 3



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Filed Nov. 21, 1961 2 Sheets-Sheet 2

FIG. 6

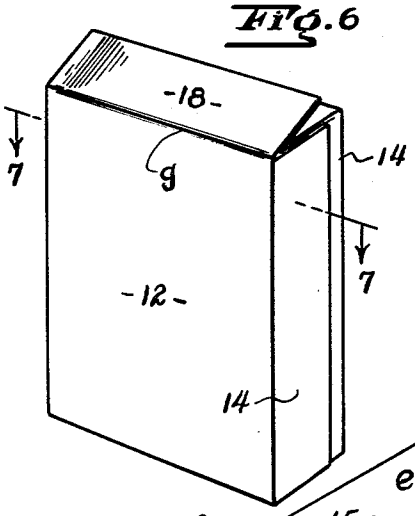


FIG. 4

FIG. 7

FIG. 8

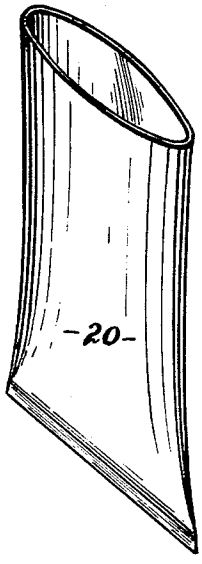
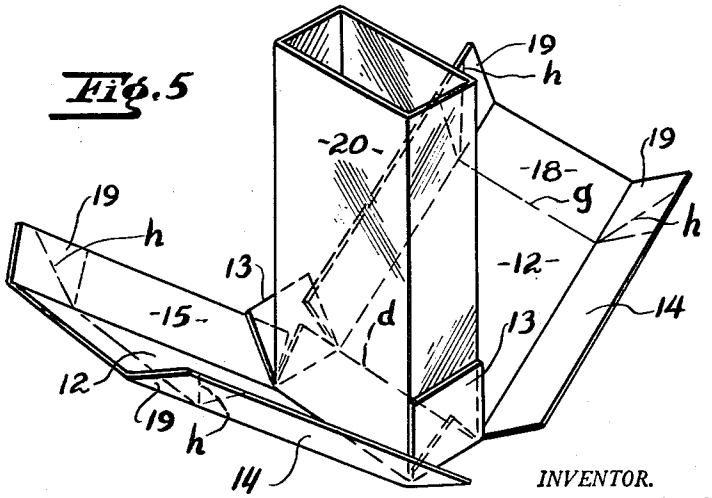


FIG. 5



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3,118,588
CONTAINERS MADE OF COATED SHEET MATERIAL

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5 Claims. (Cl. 229—23)

This invention relates to containers made of coated sheet material such as cardboard, paper, film, metal foil or like material, either singly or in combination.

According to this invention we provide a container comprising an outer portion formed from a blank of coated sheet material and an inner portion, the blank of said outer portion having a bottom panel with two opposite side wall panels extending therefrom, each said side wall panel having a lateral panel at each side, said lateral panels together forming two other opposite side walls of the outer portion, the said inner portion lining at least the said bottom panel and the said two other opposite side walls. The inner portion may be in the form of a strip or can take the form of a complete lining.

Two forms of the invention are illustrated in the drawing filed herewith, wherein:

FIGURE 1 is a blank from which the outer portion of one form of carton is formed,

FIGURE 2 is a perspective view of the inner portion of the carton, and

FIGURE 3 is a perspective view of the erected carton.

A second form of carton made according to the invention is illustrated in FIGURES 4 to 8.

FIGURE 4 is a perspective view of the blank of the outer portion and the inner portion applied thereto,

FIGURE 5 shows the outer cover being folded about the inner portion,

FIGURE 6 is a perspective view of the completed carton,

FIGURE 7 is a section on line 7—7 of FIGURE 6, and

FIGURE 8 is a perspective view of the inner portion before the outer portion is applied to it.

Referring to FIGURES 1 to 3 of the drawings, the blank of the outer portion of the carton comprises a bottom panel **1** and two opposite wall panels **2** articulated thereto by crease lines *a*. The bottom panel **1** has a flap **3** at each side articulated thereto by the crease lines *b* and each panel **2** has a panel **4** on one side and a panel **5** on the other side articulated thereto by the crease lines *c*. The panels **4** and **5** together form two opposite side walls of the outer portion of the carton.

FIGURE 2 shows the inner layer or portion for joining the panels **4** and **5** and takes the form of a strip **6** of heat sealable and water resistant material extending down the two walls **4** and **5** and across the bottom **1**. The outer portion is set up by folding about a former to which the inner portion has previously been applied. The two portions are united by heat and pressure. The inner strip **6** may extend above the top of the walls of the outer portion as indicated at **7** or may be flush with the top of the walls. The strip **6** serves to hold the panels **4** and **5** in abutting relationship but if desired the crease lines *c* may converge slightly towards their free ends so that when assembled the panels **4** overlap the panels **5** slightly at the top to provide a better joint. Alternatively the crease lines *c* may diverge permitting nesting of the made up cartons. The strip **6** may be made of coated sheet material, the coating of course being on the inside.

The top of the carton may be closed in any convenient manner, for example, the upper end portion of the walls

4 and **5** may be provided with lines of weakening so as to provide a gusset whereby the upper ends of the walls **2** can be brought together and sealed after the carton has been filled. Alternatively, instead of providing lines of weakening the upper end portions of the panels **4** may be cut away so as to leave triangular areas of the lining exposed.

In order to obtain a good adhesion between the outer and inner layers, high pressure air may be blown into the carton to apply the necessary pressure during manufacture.

Referring to FIGURES 4 to 8 of the drawings and first to FIGURE 4, the blank of the outer portion of the container is made of cardboard or a laminate of cardboard and metal foil or film coated on the inside with heat sealable material and comprises a bottom panel **11**, two opposite wall panels **12** hinged thereto by fold lines *d*. The bottom panel **11** has a flap **13** at each side hinged thereto by fold lines *e* and each panel **12** has a lateral panel **14** on one side and a lateral panel **15** on the other side, said panels **14** and **15** being hinged to the panels **12** by fold lines *f*. The panels **14** and **15** together form two opposite side walls of the carton when the carton is set up. Fold lines *g* extend across the blank parallel with the fold lines *d* and define top forming panels **18** and **19**. Diagonal fold lines *h* are provided to facilitate forming the top.

The inner portion which forms the lining of the carton is shown in FIGURE 8. This is a bag **20** formed from a length of tubular web of polythene or other heat sealable material which has been transversely heat sealed at **21** to form the bottom of the bag **20**. In order to set up the carton, the bag **20** is placed on an expansible former, the cross section of which in the expanded condition is just less than the area of the bottom **1**. In FIGURE 4, the bag **20** is shown conforming to the shape of the expanded former which has been removed from the drawing so as to show the construction of the carton. The outer portion is folded about the former to form the carton, the first stage of this being shown in FIGURE 5. The flaps **13** are first brought into a vertical position and then the side walls **14** and **15** made to overlap and heat sealed together to form side walls. At the same time the inner portion is heat sealed substantially all over to the outer portion which increases the strength particularly to impact of the finished container. The former is then removed and the carton is filled and closed as shown in FIGURE 6. The filling end of the carton can be closed in a number of ways, for example, the upper edges of both lining and cover portions may be brought together and heat sealed as shown in FIGURE 6 or turned over and furnished with a metal strip closure. Alternatively the lining **20** may be separately sealed across the top parallel to the bottom closure **21** and the top of the carton closed independently in any convenient manner, for example by overlapping end flaps which are heat sealed together.

The term "coated sheet material" is intended to cover the case where the sheet material has applied to it a layer by spraying, rolling or other means and where such layers apply there is a lamination of the sheet material.

Instead of using a heat sealable coating and making the lining of a heat sealable material the cover and lining may be coated with a material which is pressure sensitive, for example, latex or the outer portion can be coated with adhesive prior to forming. Instead of being only moisture-resistant, the coating can be moisture and/or grease resistant and/or gas resistant depending upon the particular protection required. This protection can be afforded by the outer or the inner portion or by both.

What I claim and desire to secure by Letters Patent is:

1. Container comprising an outer portion formed from a blank of coated sheet material and an inner portion, heat sealed thereto, said outer portion having a bottom panel with two opposite side wall panels extending therefrom, each said side wall panel having a lateral panel at each side, said lateral panels together forming the two other opposite side walls of the outer portion with a joint on each of said opposite side walls between and adjacent the lateral panels forming said opposite side walls, said inner portion lining at least the said bottom panel and the said two other opposite side walls and sealing said joint on each said side wall; and said adjacent lateral panels abut to form the said two other opposite side walls.

2. Container according to claim 1 wherein the inner portion is a bag of heat sealable material.

3. Container comprising an outer portion formed from a blank of coated sheet material and an inner portion heat sealed thereto, said outer portion having a bottom panel with two opposite side wall panels extending therefrom, each said side wall panel having a lateral panel at each side, said lateral panels together forming the two other opposite side walls of the outer portion with a joint on each of said opposite side walls between and adjacent the lateral panels forming said opposite side walls, said inner portion lining at least the said bottom panel and the said two other opposite side walls and being heat sealed over substantially the entire area of each of said two other opposite side walls thereby sealing said joint on each said side wall; and said adjacent lateral panels abut to form the said two other opposite side walls.

4. Container according to claim 3 wherein the inner portion is a bag of heat sealable material.

5. Container according to claim 3 wherein the outer portion is formed from a pre-cut sheet having a thermoplastic surface coating.

References Cited in the file of this patent

UNITED STATES PATENTS

2,138,700	Hoff	Nov. 29, 1938
2,292,573	Kondolf	Aug. 11, 1942
2,342,439	Waters	Feb. 22, 1944
2,416,725	Williamson	Mar. 4, 1947