

Oct. 18, 1932.

C. S. ANDREWS

1,883,450

REFRIGERATING CONTAINER

Filed June 13, 1930

2 Sheets-Sheet 1

FIG. 1.

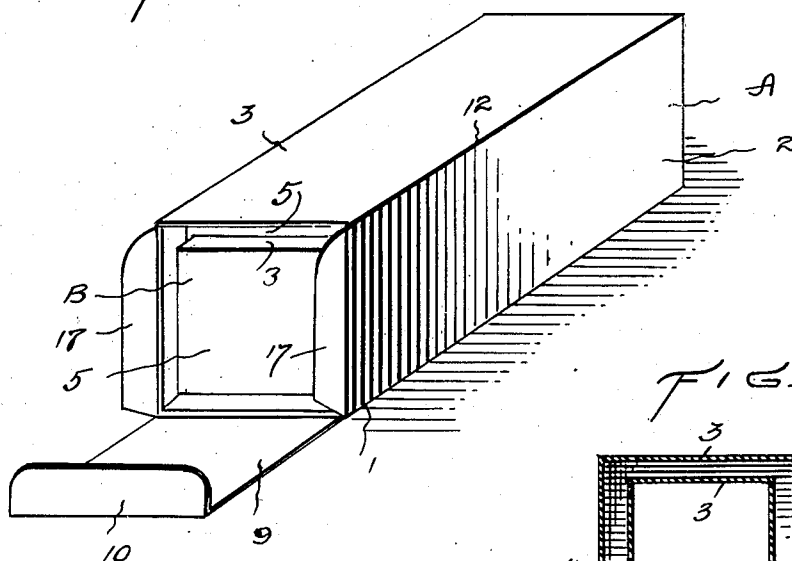


FIG. 2.

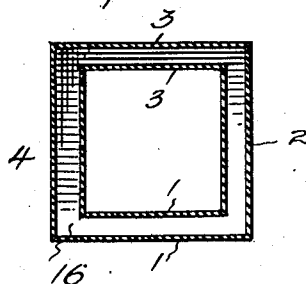
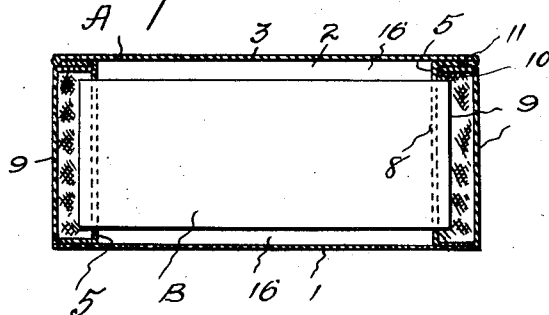


FIG. 3.



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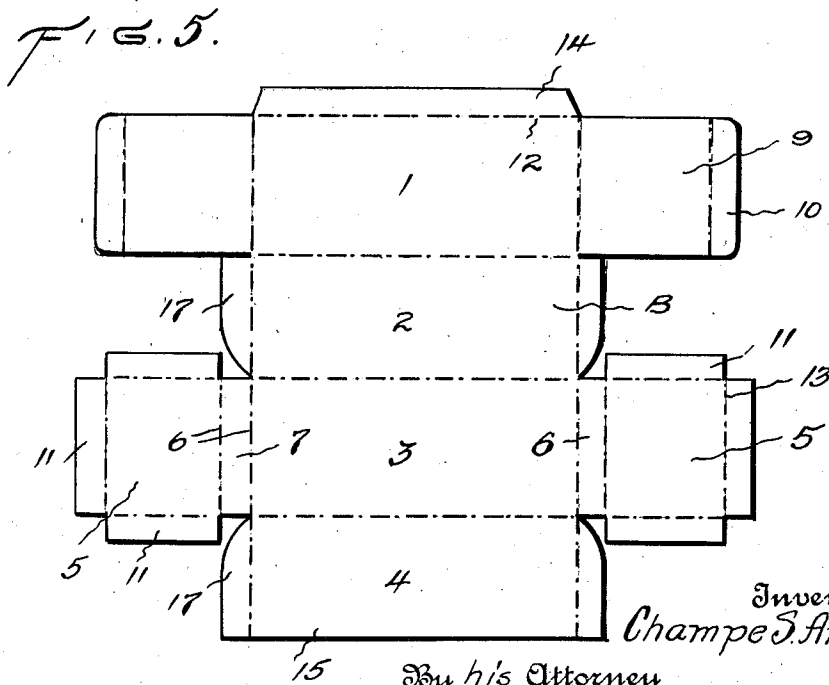
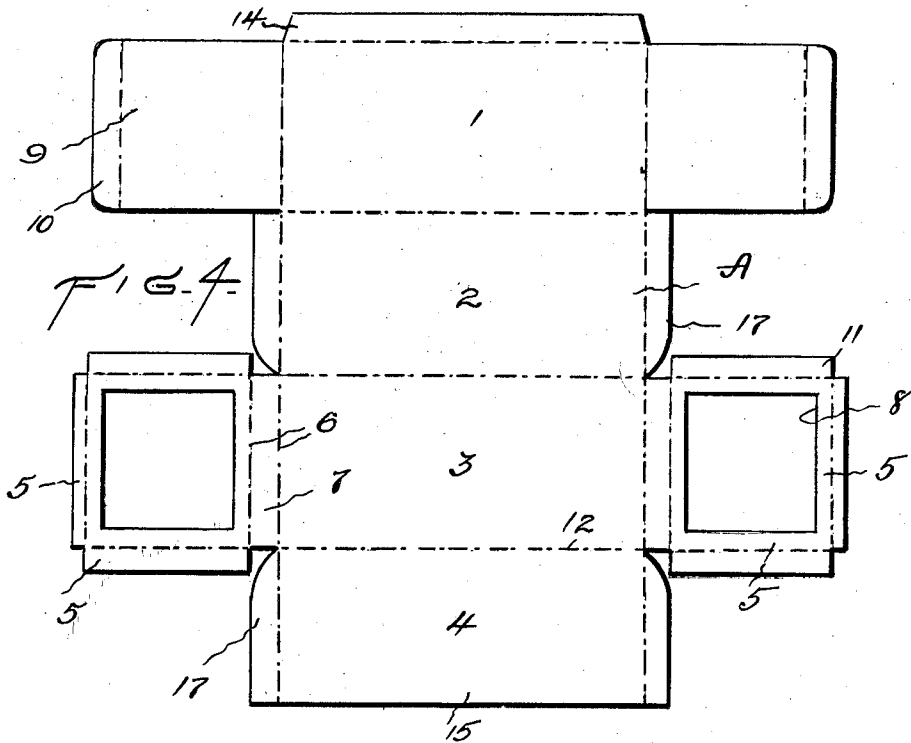
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2 Sheets-Sheet 2



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REFRIGERATING CONTAINER

Application filed June 13, 1930. Serial No. 460,864.

The present invention has relation to containers of a kind employed especially for packing, storing and shipping perishable goods and other merchandise which is required to be kept under constant refrigeration.

One object of the invention, amongst others, is to produce a container which is suitable and economical to produce for volume use and production. Another object is to provide a container which may be readily assembled or set up so as to facilitate the packing operation. Another object is to provide a design of container in such a form that even when composed of comparatively light weight paper-board, the material preferably employed, the container when set up will be rigid so as to provide a useful container for refrigeration and shipping purposes.

The improved container is especially applicable for use when carbon dioxide or dry-ice is employed as the refrigerating medium but it will be understood that the improved container may also be used when common ice is employed as the refrigerating medium. In the latter case the material of which the container is composed would naturally be waterproof. In designing the container means are provided to tightly close the ends thereof to prevent, as much as possible, leakage of vapor or water depending on the nature of the refrigerating medium employed.

In carrying out the invention the container comprises two separate members one of which is the outer member and the other is the inner member, the latter being suspended within the outer member in such a manner that a space is left between the inner and the outer member to provide a non-conductor of heat between the said members of which the inner member contains the merchandise which is kept in a constant state of refrigeration or frozen by means of the refrigerating medium, for example, dry-ice. Pockets or receptacles are provided at each end of the container for holding the dry-ice and said pockets or receptacles are tightly closed at the outer ends so as to confine the vapors passing off from the ice within the outer container and which vapors will pass from said

receptacles into the space or jacket which surrounds the inner member.

An embodiment of the invention will be hereinafter more fully described with reference to the accompanying drawings, wherein—

Figure 1 is a perspective view showing the complete container with one end in the open position;

Figure 2 is a transverse section of said container;

Figure 3 is a longitudinal section of the container with both ends in the closed position;

Figure 4 is a plan view of the blank of which the outer containing member is composed; and

Figure 5 is a plan view of the blank of which the inner member of the container is composed.

In the embodiment of the invention illustrated by the drawings referred to, the improved container is composed of two separate members one of which is the outer member and the other is the inner member. The latter member is adapted to contain the goods or merchandise and when the container is packed ready for shipment this container is suspended within the outer member. The said members 1 and 2 are each composed of a separate blank as illustrated in Figures 4 and 5. In these figures the blank A forms the outer container and blank B forms the inner container. These blanks are substantially the same with the exception that blank A is provided with means for holding the inner member in its suspended position. The said blanks are both divided into a plurality of parallel sections designated by the numerals 1, 2, 3 and 4. In each instance the sections 3 have extending therefrom end sections 5 which are connected to the section 3 by double folding lines 6 with an integral strip 7 between said lines. In blank A the section 5 has an opening 8 to receive the ends of the inner member B when the container is packed for shipping or storage. The corresponding sections 5 in blank B do not have the opening-8 for in practice it is required that this inner container should be tightly

closed. In both blanks flaps 9 extend laterally from the sections 1 and these flaps have tuck-in ends 10 whereby the two containers may be effectually closed and further to ensure tight closure of the ends of the containers, the sections 5 are provided with folding strips 11.

In the manufacture of the improved containers the blanks are first cut out and creased on the horizontal lines 12 and vertical lines 6 and 13 so as to define the sections or portions which are to be folded. The blanks so formed are then partly assembled and glued in an automatic machine and in which operation the blank is folded so that the glue lap 14 connected to section 1 will come under the edge 15 of the section 4. The blanks are then ready to be set up for use and in which operation the extension sections 5 are folded into the receptacle formed by the sections 1, 2, 3 and 4 which constitute the sides of the different containers. In the blank for the outer member, the sections 5 will lie within the container so that the ends of the inner container when located slightly protrude and leave a space forming a pocket or receptacle between said ends and the folded-in flaps 9. This pocket is utilized as a receptacle for the refrigerating medium, preferably dry-ice, as previously stated.

It will be noted that the side walls of the inner member do not come in contact with the side walls of the outer member. A space 16 is thereby left and this space will be filled with the vapors passing off from the refrigerating medium and this space filled with the low temperature vapors provides a refrigerating jacket around the inner member which contains the frozen merchandise such, for example, as frozen fruit, ice-cream and the like.

It is desirable that the ends of the inner member or carton should not fit the receiving opening 8 too tightly for the vapors from the dry-ice must be allowed to enter the space 16 through the slight opening which is left at the point of support of the inner carton within the outer carton or container. It is further desirable to tightly close the said containers against admission of air from the exterior and the escape of the low temperature vapors from the container. So as to ensure further tight closing, the flaps 17 are provided which fold inwardly to additionally close said ends. Furthermore by means of said closing devices the outer container may be hermetically sealed by any ordinary means.

Various modifications may obviously be made in the construction of the carton or containing members and it is to be understood that any modification coming fairly within the terms of the appended claims shall be covered thereby.

I claim:

1. A refrigerating container of the class described composed of inner and outer receptacles, fold in flaps at each end of said outer receptacle, said inner receptacle extending through an opening in each of said fold in flaps whereby the outer walls of said inner receptacle are maintained out of contact with the inner walls of said outer receptacle.

2. A refrigerating container of the class described comprising an outer receptacle, an inner receptacle, fold in flaps at each end of said outer receptacle, said inner receptacle extending through an opening in said fold in flaps whereby the walls of said inner receptacle are held out of contact at all points thereof with the walls of said outer member.

3. A refrigerating container of the class described composed of inner and outer receptacles, said inner receptacle being suspended within said outer receptacle, means for effecting such suspension comprising supports at each end of the outer receptacle whereby the outer walls of said inner receptacle are maintained out of contact with the inner walls of said outer receptacle and said suspending means comprising folding-in flaps with an opening therein to receive the ends of said inner receptacle.

4. In a container of the class described comprising an outer receptacle and an inner receptacle, said inner receptacle being suspended within said outer receptacle, means for suspending said inner receptacle, said means comprising fold in flaps on said outer receptacle through which the ends of said inner receptacle project, and a cover for said outer receptacle providing also a cover for said container.

5. A container of the class described comprising an outer receptacle, an inner receptacle suspended within said outer receptacle, a pocket at each end of said outer member adapted to contain a refrigerating medium, a cover for closing the end of said outer receptacle, fold in flaps at each end of said outer receptacle having openings therein, said inner receptacle extending through the openings in said fold in flaps, and an opening in said inner receptacle accessible through said outer receptacle.

6. A container of the class described comprising an outer receptacle, an inner material containing receptacle member, a receptacle or pocket at each end of said outer receptacle adapted to contain a refrigerating medium, and flaps extending from said outer receptacle, said inner receptacle being held suspended by said flaps out of contact with the side walls of said outer receptacle so as to leave a clear space therebetween for free circulation of said refrigerating medium.

In testimony whereof I have hereunto set my hand.

CHAMPE S. ANDREWS. 130