July 7, 1942. J. HENCHERT 2,289,193

FROZEN VEGETABLE BOX

Filed Sept. 7, 1939 2 Sheets-Sheet 1

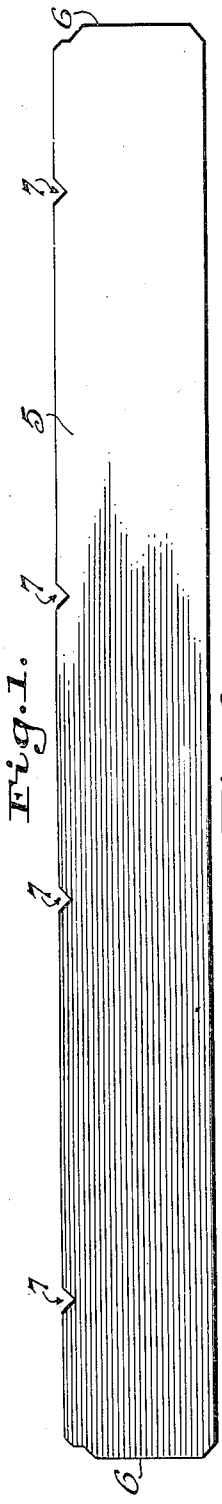


Fig. 1.



Fig. 2.

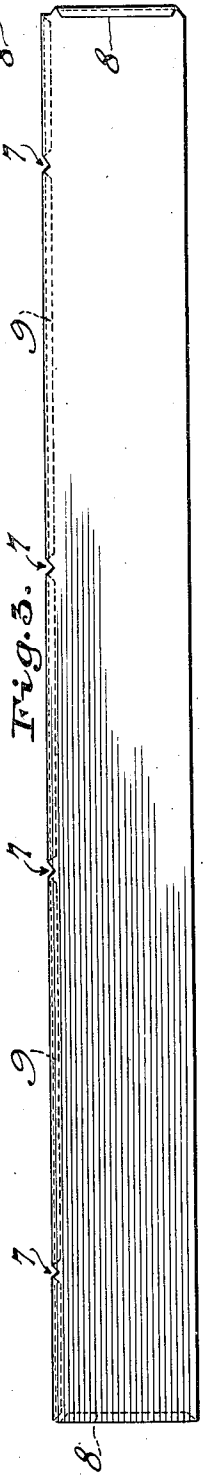


Fig. 3.

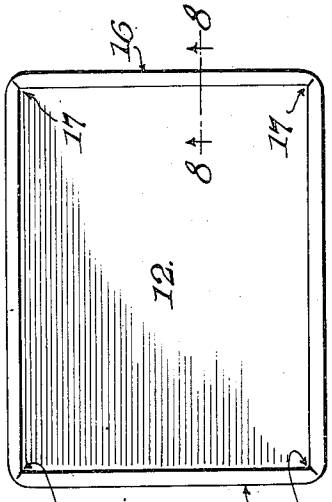


Fig. 6.

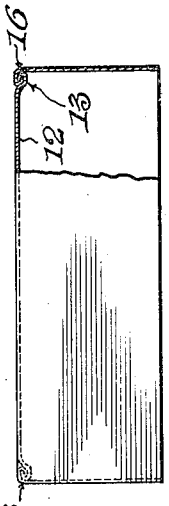


Fig. 7.

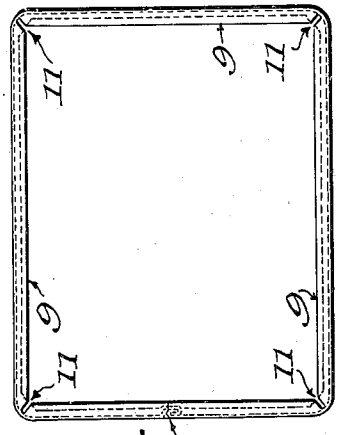


Fig. 4.

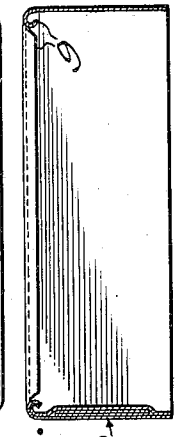


Fig. 5.

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Fig. 15.

Fig. 16.

Fig. 17.

Fig. 18.

Fig. 13.

Fig. 14.

Fig. 10.

29

Fig. 9.

Fig. 8.

Fig. 11.

Fig. 12.

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UNITED STATES PATENT OFFICE

2,289,193

FROZEN VEGETABLE BOX

John Henchert, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N. Y., a corporation of New York

Application September 7, 1939, Serial No. 293,823

2 Claims. (Cl. 220—67)

The invention relates generally to food product containers and primarily seeks to provide a novel form of container which, while adaptable to more general uses, is particularly suited for use in the packaging of food products which are frozen in the containers and marketed in the frozen state.

In the marketing of frozen food products, it is desirable that the products be packaged in containers which can be opened with facility and which are devoid of outwardly projecting seam or cover structures which would mutually contact and hold the containers in exaggerated spaced relation during the freezing process. It is a purpose of the present invention to provide a novel container of this character.

In its more detailed nature the invention resides in the provision of a novel container structure comprising a square body shell formed of sheet metal, a metallic end closure at one end, and a paper end closure at the other end, each said end closure being secured to the body shell by a novel seam structure so formed that no part thereof protrudes beyond the lateral confines of the body shell, whereby a plurality of such containers can lie in wall to wall contact in a quick freezing or other processing chamber with a minimum of air space intervening adjacent containers.

Another object of the invention is to provide a container of the character described in which is included a body shell having an inwardly offset end portion and an end closure double seam secured to said end portion so that the outer face of the seam structure lies flush with or inwardly of the outer face of the shell proper.

Another object of the invention is to provide a container of the character described in which a paper end closure is secured to the metal body shell by a novel seam structure so formed as to lie wholly within the outer face contour of the shell.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more fully understood by following the detailed description, the appended claims and the several views illustrated in the accompanying drawings.

In the drawings:

Figure 1 is a face view illustrating a blank from which the container body shell can be formed.

Figures 2 and 3 respectively illustrate the blank of Figure 1 in top edge and face views with the top edge of the blank turned inwardly and downwardly and the respective ends of the blank bent to form hooks.

Figure 4 is a top plan view illustrating the blank of Figure 3 bent to form a rectangular body shell, the hooked ends being connected in a lock and lap seam.

Figure 5 is a vertical cross section of the shell illustrated in Figure 4.

Figure 6 is a plan view illustrating the shell of Figure 4 with a paper end closure secured therein.

Figure 7 is a side elevation and part vertical cross section of the assembly shown in Figure 6.

Figure 8 is an enlarged fragmentary section taken on the line 8—8 on the Figure 6.

Figures 9 and 10 are fragmentary sectional views similar to Figure 8 and illustrating modified forms of paper end closure attaching seam structures.

Figure 11 is a plan view of the assembly of Figure 6 with the lower portion of the body shell recessed and flanged.

Figure 12 is a side elevation and part vertical cross section of the assembly shown in Figure 11.

Figure 13 is an enlarged fragmentary sectional view illustrating the form of the flange provided at the bottom of the shell illustrating the recessed and flanged lower end of the body shell.

Figure 14 is a fragmentary sectional view illustrating the shell portion of Figure 13 with an end closure fitted therein.

Figure 15 is a view similar to Figure 14 with the flange structures rolled into a double roll seam within the recess formed at the bottom of the body shell.

Figure 16 is a side elevation of several container structures in face abutting relation.

Figure 17 is an inverted plan view of a paper end closure.

Figure 18 is an enlarged fragmentary sectional view taken on the line 18—18 on Figure 17.

In Figure 1 of the drawings I have illustrated a blank from which the body shell of the improved container can be formed. This blank comprises an elongated rectangle of sheet metal 5 having its end extremities 6 shaped to facilitate the formation of seam forming hooks, and its upper edge notched as at 7 at points at which the blank is to be bent in the formation of a rectangular body shell structure such as is illustrated in Figure 4 of the drawings.

Following the shaping of the flat blank as illustrated in Figure 1 of the drawings, the end extremities of the blank are bent to form hooks 8, and the upper or notched edge portion of the blank is bent inwardly and downwardly as at 9

to form a paper closure edge receiving grooveway such as is best illustrated in Figure 5 of the drawings. It will be observed by reference to Figure 3 of the drawings that in the bending of the edge portions 9 the notches 7 are not entirely taken up.

After the bending of the hooks 8 and the edge portions 9, the blank is bent at the positions of the notches 7 to form an open rectangle such as is shown in Figure 4 and the hooks 8 are brought together in the formation of a lock and lap form as indicated at 10. The formation of the notches 7 facilitates the bending of the blank into the rectangular form shown in Figure 4 and avoids crimping of the bent edge portions 9 and closing of the paper closure edge receiving grooveway which would result from such crimping. It will be observed by reference to Figure 4 of the drawings that in the initial formation of the shell the notches 7 are not completely closed but remain slightly open as indicated at 11.

Following the formation of the rectangular shell as shown in Figures 4 and 5 of the drawings, the paper end closure illustrated in detail in Figures 17 and 18 of the drawings is applied and secured to the shell. The paper closure includes a body portion 12, a depressed annulus 13, and an upstanding securing flange 14, the latter being receivable in the grooveway formed by the turning over of the edge portions 9 of the blank. See Figures 5, 7 and 8. Following insertion of the paper closure flange 14 in the grooveway under the inwardly and downwardly turned edges 9 of the shell, said edges are tightly crimped so as to compress and securely grip the flange 14 as at 15, and the upper portion of the shell metal is bent inwardly in the final crimping process as at 16 so as to slightly round the shell structure adjacent the paper closure and dispose the clamped flange 14 in the plane of the body portion 12 of the paper end in the manner clearly illustrated in Figure 8. This inward bending of the shell portion serves to completely close the notches 7 in the manner illustrated at 17 in Figure 6.

Following the assembly of the paper end closure and shell structure in the manner hereinbefore described, the other end of the shell is bent inwardly as at 18 to provide a peripheral recess at the lower end of the shell as illustrated in Figures 12 and 13 of the drawings and an outwardly directed flange portion 19.

A second end closure 20, preferably of sheet metal, is applied after the container is filled by the manufacturer for closing the recessed and flanged open end of the container.

The end closure 20 includes a depressed annulus 21 which provides a peripheral flange 22 shaped to snugly fit within the recessed lower end of the shell and which terminates in an outwardly directed seam flange 23 as is best illustrated in Figure 14 of the drawings. After the end closure 20 has been applied to a filled container in the manner illustrated in Figure 14, the abutting seam flanges 19, 23 are rolled into a double seam as indicated at 24, and it will be observed by reference to Figure 15 of the drawings that this seam structure lies wholly within the recess at the bottom of the shell and no portion of it projects beyond the main body of the shell so that adjacent faces of containers thus formed can lie in face to face contact as indicated in Figure 16 of the drawings and thereby provide an absolute minimum of air spacing between containers. The parts are preferably dimensioned so that the external face presented by the seam structures 24 will lie flush with the external face of the respective shell portions as illustrated in Figure 15.

Containers such as are herein disclosed will be found very desirable for packaging food products which are to be marketed in a frozen state since the paper end closures can be removed with facility and a plurality of containers can be positioned in face to face contact with an absolute minimum of intervening air spacing during the quick freezing of the products.

In Figures 9 and 10 of the drawings there are illustrated two modified forms of seam structures by which the paper end closures can be secured to the metallic body shells. In Figure 9 the paper end closure includes a body portion 25, a downwardly and outwardly turned edge portion 26 and an upwardly turned flange 27, and in this seam structure the upper edge of the shell is bent inwardly and downwardly over the flange 27 and firmly embedded in and clamped thereagainst as indicated at 28.

In the form of seam structure illustrated in Figure 10 the paper end closure includes a body portion 29, a downwardly and outwardly turned edge portion 30 and an inverted U-shaped securing edge portion, the legs 31 of which straddle the inwardly offset upper edge 32 of the shell. The upper edge of the body shell is inwardly offset as at 33 to form a peripheral recess within which the U-shaped end closure flange 31 and the securing ring 34 which secures it over the shell edge portion 32 are confined. It will be observed that in this form of the invention, and also in the form of seam illustrated in Figure 9, no portion of the seam structures project laterally beyond the external face portions of the body shell.

While the container structures herein described in detail constitute preferred forms of the invention, it is to be understood that various modifications of the container structures can be provided without departing from the spirit and scope of the invention as defined in the appended claims.

I claim:

1. A container comprising a rectangular body shell and end closures, each said end closure being attached at an end of the shell by a seam structure offset inwardly from the external face of the shell a distance sufficient to render the container devoid of outward projections capable of contacting with and effecting a spaced relation of juxtaposed containers of similar construction, and each said end closure presenting substantially its whole area for flat surface contact with an end closure of a juxtaposed container of like construction, one said end closure being formed of paper and including a main body portion and a surrounding depressed annulus terminating in a securing flange, said shell including an end portion turned over into a common plane with the main body of said one end closure and clamped in seam formation with the securing flange in the depressed portion surrounding said main body portion.

2. A container comprising a rectangular body shell and end closures, each said end closure being attached at an end of the shell by a seam structure offset inwardly from the external face of the shell a distance sufficient to render the container devoid of outward projections capable of contacting with and effecting a spaced rela-

tion of juxtaposed containers of similar construction and each said end closure presenting substantially its whole area for flat surface contact with an end closure of a juxtaposed container of like construction, one said end closure including a main body portion, a surrounding depressed annulus terminating in an outwardly directed securing flange and providing a sleeve flange snugly receivable in the respective end of the shell, said respective shell end being offset inwardly to form an annular recess surrounding said sleeve flange and terminating in a securing flange, said closure and shell securing flanges being rolled into a securing seam disposed wholly within the limits of said annular recess, and the other of said end closures being formed of paper and including a main body portion and a surrounding depressed annulus terminating in a securing flange, said shell at the position of said other end closure including an end portion turned over and clamped into and against the last mentioned securing flange so that the resulting end closure seam lies in the same general plane occupied by said main body portion.

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