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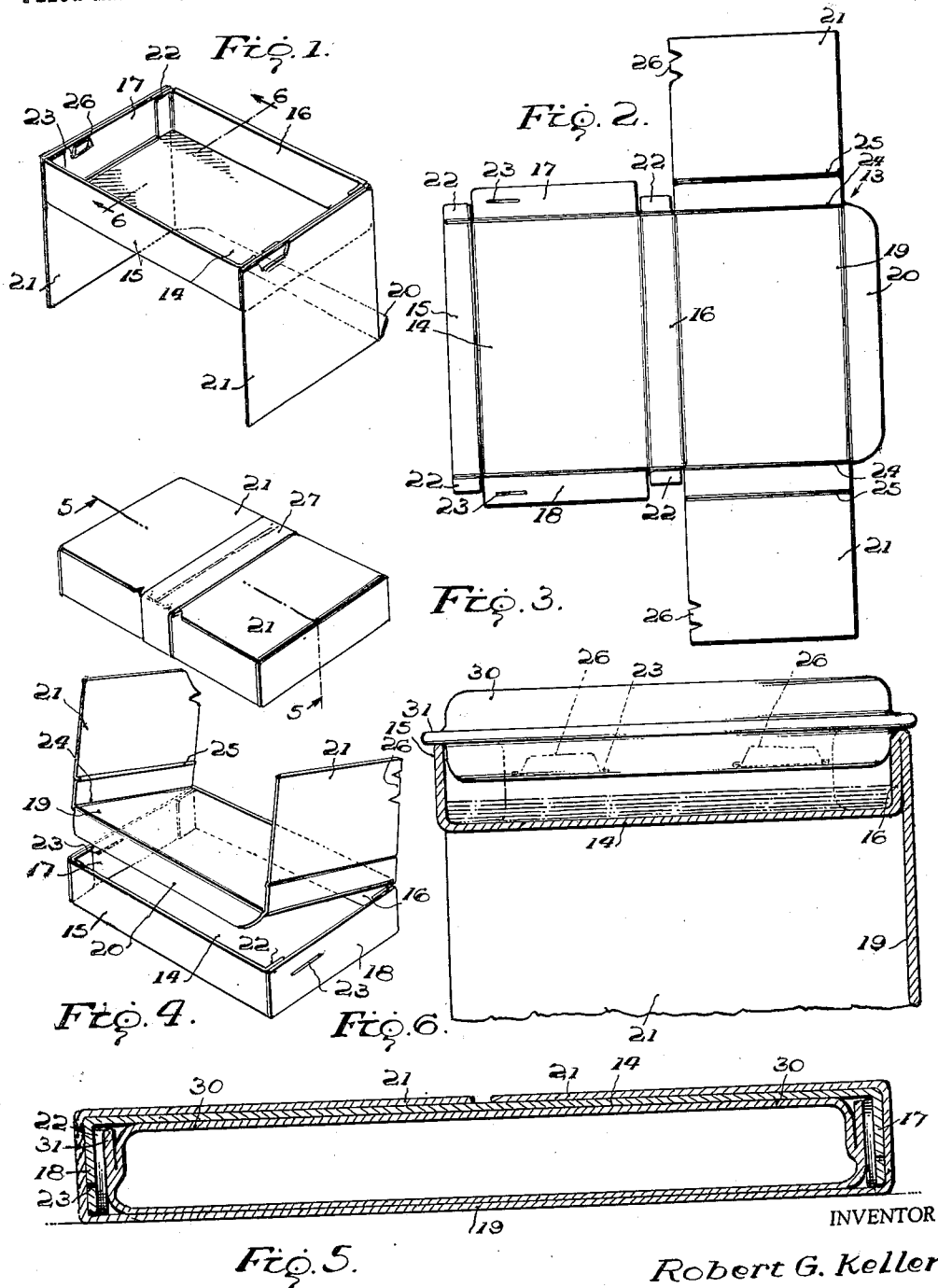
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3,071,307

CARTON FOR PACKAGING AND HEATING SUBSISTENCE ITEMS

Filed March 8, 1961

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

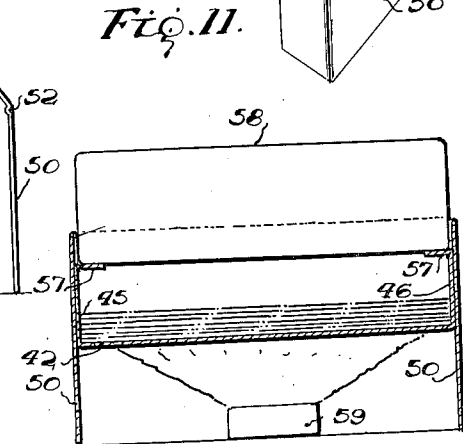
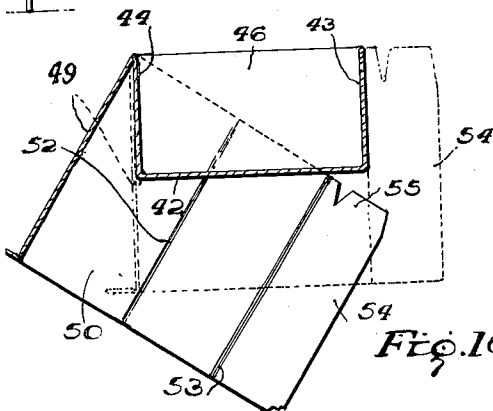
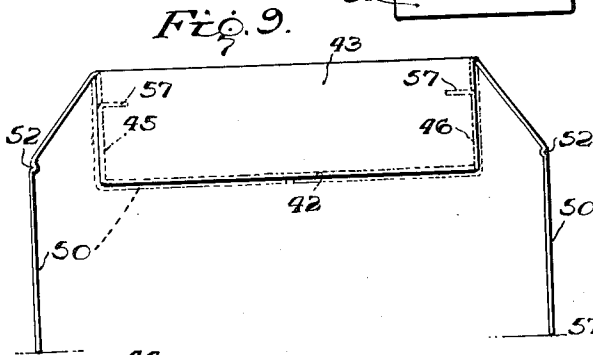
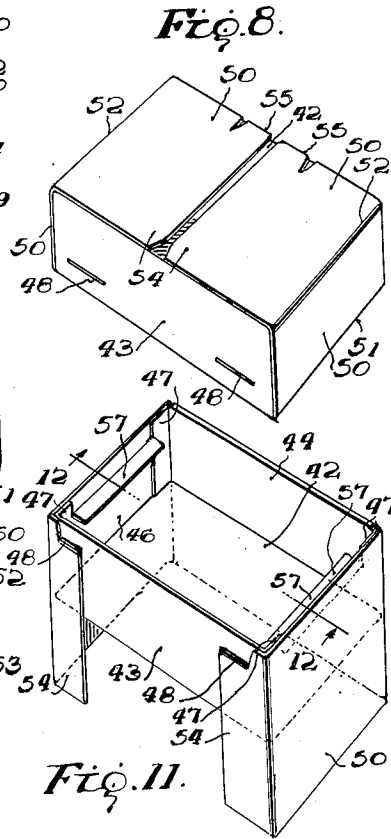
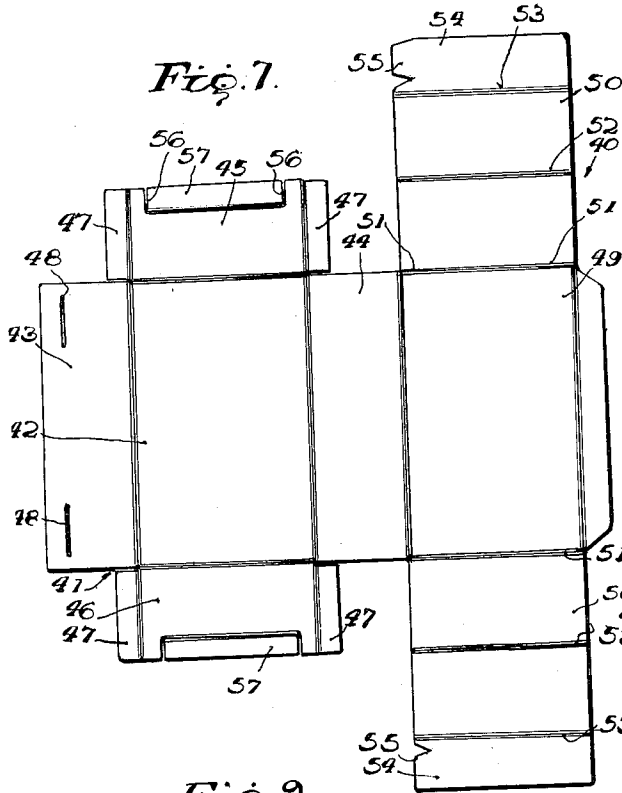


Fig. 12

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CARTON FOR PACKAGING AND HEATING SUBSISTENCE ITEMS

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1 Claim. (Cl. 229-33)

(Granted under Title 35, U.S. Code (1952), sec. 266)

The invention described herein, if patented, may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

The invention relates to a carton for a subsistence item which performs a dual function of providing means for packaging the item as well as the means for providing a double boiler for heating the same prior to consumption.

Members of the armed services either in the field or out of communication with their kitchens must subsist on field rations which are difficult to warm up or heat. With the foregoing in view, it is an object of the invention to provide an improved combined carton and subsistence packet of the class described.

A further object is to provide a combined carton and packet wherein the packet has a close fit in the carton and wherein means are provided for supporting the packet partially within the open carton so as to provide a double boiler for heating the subsistence item within the packet.

Other objects and advantages reside in the particular structure of the several species of the invention, the structure of the several elements forming each species, combinations and sub-combinations of such elements with each other and/or a subsistence packet, all of which will be readily apparent to those skilled in the art upon reference to the attached drawing which discloses two species of the invention and to the following specification wherein the invention is described and claimed.

In the drawings:

FIGURE 1 is a perspective view of one form of the invention showing the same in the packet supporting position;

FIGURE 2 is a plan view of a blank for forming the carton;

FIGURE 3 is a bottom perspective view showing the sealed carton;

FIGURE 4 is a perspective view of the carton in the transition stage between the sealed carton of FIGURE 3 and the water boiler of FIGURE 1;

FIGURE 5 is a longitudinal sectional view taken substantially on the plane of line 5-5 of FIGURE 3;

FIGURE 6 is a like view taken substantially on the plane of the line 6-6 of FIGURE 1, and showing the food packet in the double boiler providing position;

FIGURE 7 is a plan view of a blank for a modified form of the invention;

FIGURE 8 is a bottom perspective view of the modification showing the carton in the sealed position;

FIGURE 9 is a front elevational view showing a first stage of the transition of the carton to a water boiler;

FIGURE 10 is a longitudinal vertical sectional view showing a further stage of the transition of the carton to a water boiler;

FIGURE 11 is a perspective view of the modification showing the same as a water boiler; and

FIGURE 12 is a vertical sectional view taken substantially on the line 12-12 of FIGURE 11 and showing the food packet in a double boiler-providing position partially within the tray.

Referring specifically to the drawing wherein like reference characters have been used throughout to designate like parts and referring at first to the species of FIGURES 1 to 6 inclusive, 13 designates generally a blank comprising a floor panel 14, front and rear wall panels

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15 and 16, opposed end panels 17 and 18, and a lid panel 19. Lid 19 may have the usual tuck-in flap 20 and includes end flaps 21.

The front and rear panels 15 and 16 are formed with end tabs 22, which are adapted to be folded along appropriate fold lines and to overlap end portions of the end walls 17 and 18 and to be sealed thereto to provide a substantially fluid tight tray by any suitable adhesive. The end walls 17 and 18 in the region of the front wall 15 are formed with horizontal slits 23 for a purpose to be apparent hereinafter.

The lid 19 is connected to the end flaps 21 by suitable parallel fold lines 24 and such flaps 21 are provided with additional fold lines 25 in parallel relation to the fold lines 24 and spaced therefrom a distance corresponding to the height of the walls 15-18 inclusive of the tray. Likewise, like side edges of the flaps 21 are notched to provide tabs 26.

Referring now to FIGURES 3 and 4, it will be seen that when the lid 19 is in the closed position the flaps 21 fold around the ends and bottom of the tray and may be sealed thereto by any suitable means such as the tape seal 27. Referring again to FIGURES 3 and 4, it is apparent that when the tape seal 27 is removed the flaps 21 are unfolded to vertical positions, FIGURE 4, and the lid 19 is then swung through 270° until it is vertically disposed along the rear wall 16 of the tray. The flaps 21 are then swung through 180° so as to lie alongside the end walls 17 and 18. The tabs 26 of the flaps are now in registry with and insertable in the slits 23 in the end walls 17 and 18 whereby to secure the assembly in the boiler-providing position of FIGURE 1.

With the parts in this position the tray may be partly filled with water and a heating tab ignited below the same to heat the water which may be utilized to warm up or heat a subsistence item.

Referring now to FIGURES 5 and 6 the subsistence packet 30 is formed with a deformable circumferential fin seal 31 which is normally disposed in parallel relation to the walls 15-18 inclusive of the tray. However, when the carton is opened the packet 30 may be removed and the fins spread laterally 90° as illustrated in FIGURE 6. In this position the fin 30 rests atop the free upper edges of the walls of the tray so that a lower portion of the packet 30 is inclosed within the tray walls but in upwardly spaced relation to the floor 14 thereof. Thus, the packet and tray now comprise a simple double boiler which when the water is heated will serve to confine a large portion of the resultant steam below the packet 30 so that the subsistence item therein is heated in a manner readily understood.

It is understood, of course, that the carton is made of fluid-tight and fire-resistant material such as a laminated paperboard-metal foil material wherein the paperboard has been subjected to a fire-resistant treatment. Obviously, other materials will occur to those skilled in the art.

Referring now to the species of FIGURES 7 to 12 inclusive, the blank 40 comprises a tray 41 comprising a floor 42, front and rear panels 43 and 44 and end panels 45 and 46, all connected to the floor panel by suitable fold lines. End panels 45 and 46 are formed with sealing flaps 47 which are adapted to overlap the end edges of the front and rear flaps 43 and 44 and to be sealed thereto in any suitable manner so as to provide a fluid-tight tray as in the first described form of the invention. The front wall 43 is formed with two laterally spaced slits 48 adjacent the free upper edge thereof and to the adjacent opposite ends. The purpose of the slits 48 will be apparent hereinafter.

A lid 49 is hinged to the rear wall 44 by a suitable fold line and has end flaps 50 hinged to the end edges thereof by suitable fold lines 51. End flaps 50 include interme-

diate fold lines 52 and terminal fold lines 53 which are in outwardly spaced parallel relation to the fold lines 51. The fold lines 52 are spaced from the fold lines 51 a distance corresponding to the height of the end walls 45 and 46 of the tray. The fold lines 53 are spaced from the fold lines 51 a distance corresponding to the width of the tray. The sub-flaps 54 formed on the free ends of the flaps 50 by the fold lines 53 include inner edges formed to provide tabs 55 for a purpose to be disclosed later.

When the parts are in the carton providing position of FIGURE 8 the flaps 50 lie along the outside of the end walls 45 and 46 of the tray, and then extend inwardly toward each other along the outside of the bottom 42 so that the free end edges of the sub-flaps 54 are adjacent each other. The flaps 50 may be sealed in this position in any suitable manner as by a tape (not shown) such as that disclosed in the species of FIGURES 1 to 6 inclusive.

To form the carton into the water boiler illustrated in FIGURE 11, reference is had to FIGURES 9 and 10. As shown in FIGURE 9, when the flaps 50 are released from the floor 42 of the tray they are swung outwardly to substantially vertical positions whereby to release the lid 49 for movement in a direction to open the carton. As best seen in FIGURE 10 the lid assembly is now swung 270° so as to lie along the rear wall 44 outwardly thereof. Flaps 50 are now swung forwardly 180° to lie alongside the end walls 45 and 46. The sub-flaps 54 are now swung a further 90° forwardly and the tabs 55 thereof are inserted through the slits 48 in the front wall 43 to secure the assembly in the boiler providing position.

The assembled boiler may now be utilized with a food packet to provide a double boiler as in the first described form of the invention or an alternative structure now to be described may be utilized.

As best seen in FIGURES 11 and 12 the free edges of the end walls 45 and 46 are formed with laterally spaced parallel slits 56 which define therebetween opposed flaps 57. Such flaps 57 may be inwardly laterally deformed as in FIGURES 11 and 12 to provide opposed ledges which operate to support a food packet therein by its fins as in the species of FIGURES 1-6. Alternatively, ledges 57 may support an ordinary rectangular food packet 58. Such packet 58 as in the first species of the invention has a close fit in the tray 41 so that it forms at least a partial seal with walls 43-46 inclusive of the tray when supported on the ledges 57. Thus when the heat tab 59 is ignited, the water below the packet 48 will heat the double boiler formed by the tray and packet as in the first described species of the invention.

While there has been shown and described what are now considered to be two preferred species of the invention, it is understood that the same is susceptible of other forms and expressions.

Consequently, I do not limit myself to the precise structure shown and described above except as herein-after claimed.

I claim:

In a carton including a tray having a floor, opposed front and rear walls, opposed end walls, and a one-piece lid hingedly connected to said rear wall; the improvement comprising a pair of end flaps hingedly connected to said lid at opposite sides thereof, each end flap having a length corresponding to the width of an associated end wall, a sub-flap hingedly connected to each end flap to lengthen the latter, said lid and flaps having equal widths substantially greater than the height of said end walls, said lid being rearwardly swingable from a lid-providing position to a vertical position wherein an upper portion lies alongside said rear wall and a lower portion projects below the same to provide a rear support for said tray, said end flaps being forwardly swingable to vertical positions wherein upper portions thereof lie alongside said end walls and lower portions thereof project below the same to provide end supports for said tray, said sub-flaps being forwardly swingable to vertical positions wherein upper portions thereof lie alongside opposite end portions of said front wall and lower portions thereof project below the latter to provide front supports for said tray, and means for readily detachably securing said upper portions of said sub-flaps to said front wall whereby to secure said lid and flaps in said vertical positions.

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