

[54] **INSULATED COVERED SERVING TRAY**
 [75] Inventors: **William A. Madalin, Franklin, Mich.; Cecilia A. Follis, Deerfield, Ill.**

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 3,613,933 10/1971 Pilz et al..... 206/4 X

[73] Assignee: **American Hospital Supply Corporation, Evanston, Ill.**

Primary Examiner—William I. Price
Assistant Examiner—Stephen Marcus
Attorney, Agent, or Firm—Dawson, Tilton, Fallon & Lungmus

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[52] U.S. Cl..... **220/16, 206/4, 206/DIG. 29, 220/9 F, 220/23.8**

[51] Int. Cl..... **B65d 25/18**

[58] Field of Search 220/16, 17, 23.6, 23.8; 206/4, DIG. 29; 229/2, 5

[57] **ABSTRACT**

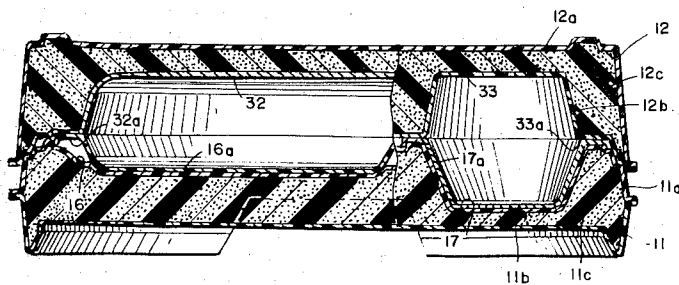
A tray assembly for the delivery and service of food, such assembly including a pair of insulated base and cover sections with a plurality of dishes retained therebetween. Handle recesses at opposite ends of the tray section facilitate the carrying and handling of the assembly and indicia means in the form of a folded card is clamped between the upper and lower sections with a portion of the card exposed externally to provide appropriate information concerning the menu, recipient, etc.

[56] **References Cited**

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15 Claims, 11 Drawing Figures



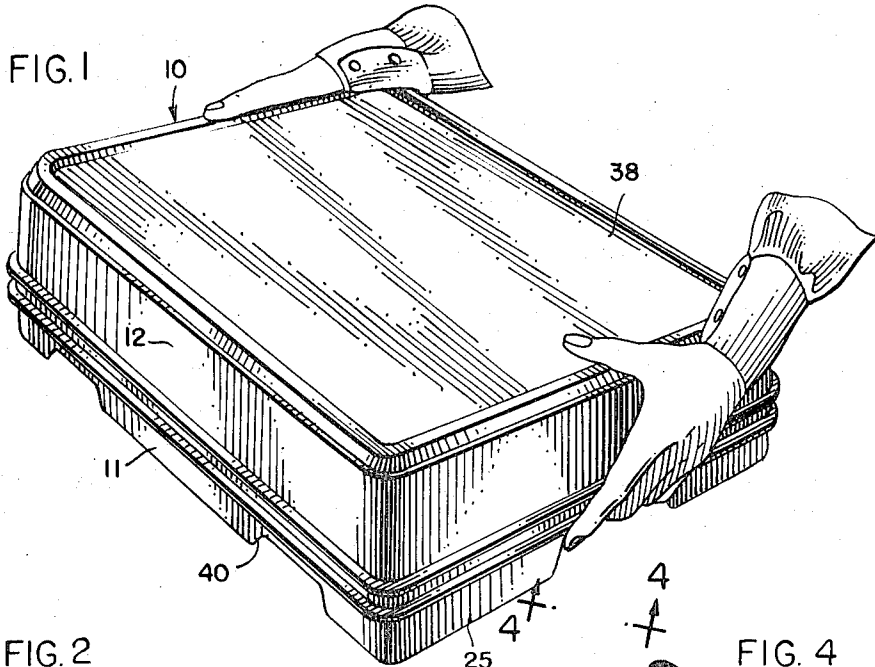


FIG. 2

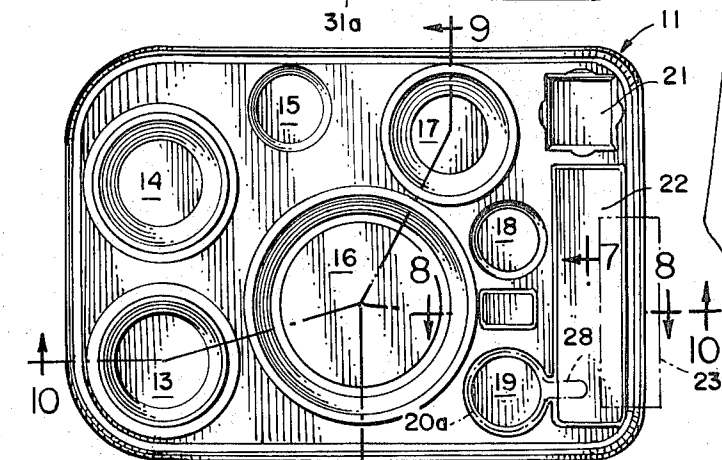
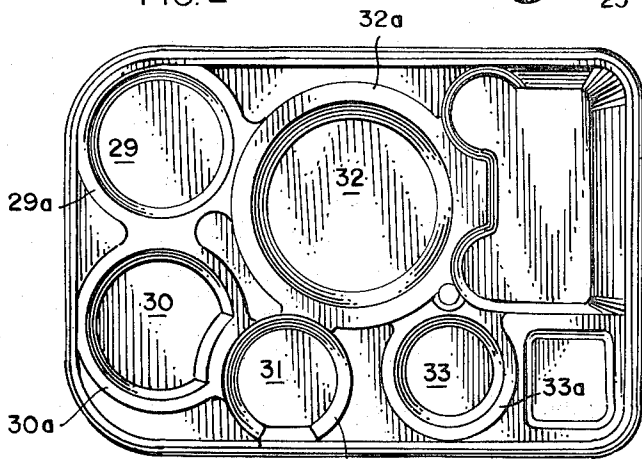
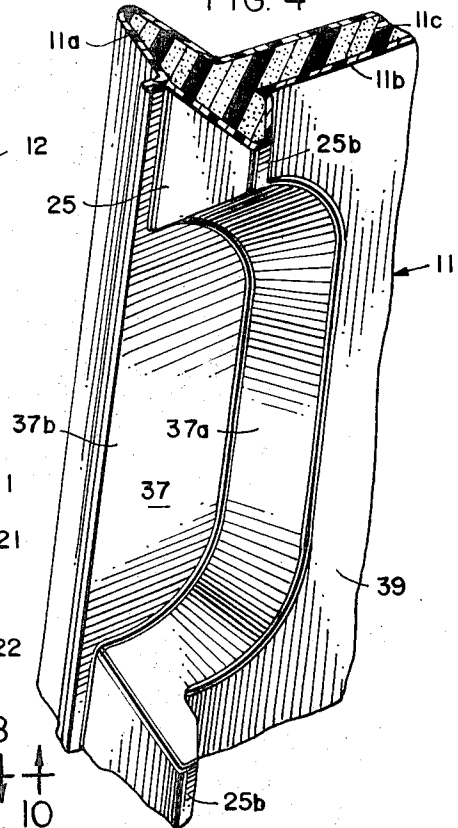


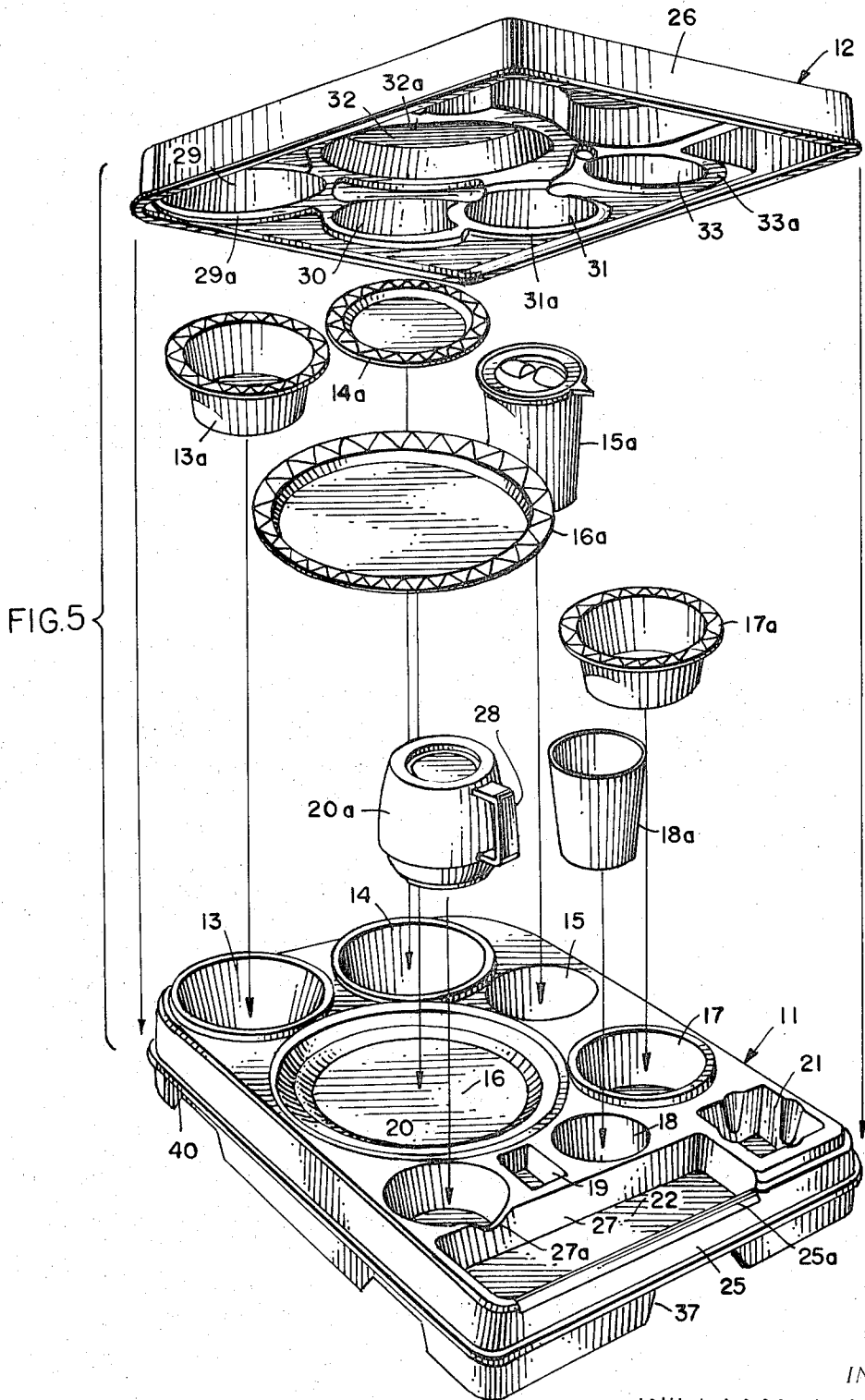
FIG. 3

FIG. 4



INVENTORS:
WILLIAM A. MADALIN
CECILIA A. FOLLIS

BY: *Dawson, Pittoy, Falloy & Lungenius*
ATT'YS



INVENTORS:

WILLIAM A. MADALIN
CECILIA A. FOLLIS

BY: *Dawson, Pittoy, Falloy & Lurginus*

ATT'YS

FIG. 6

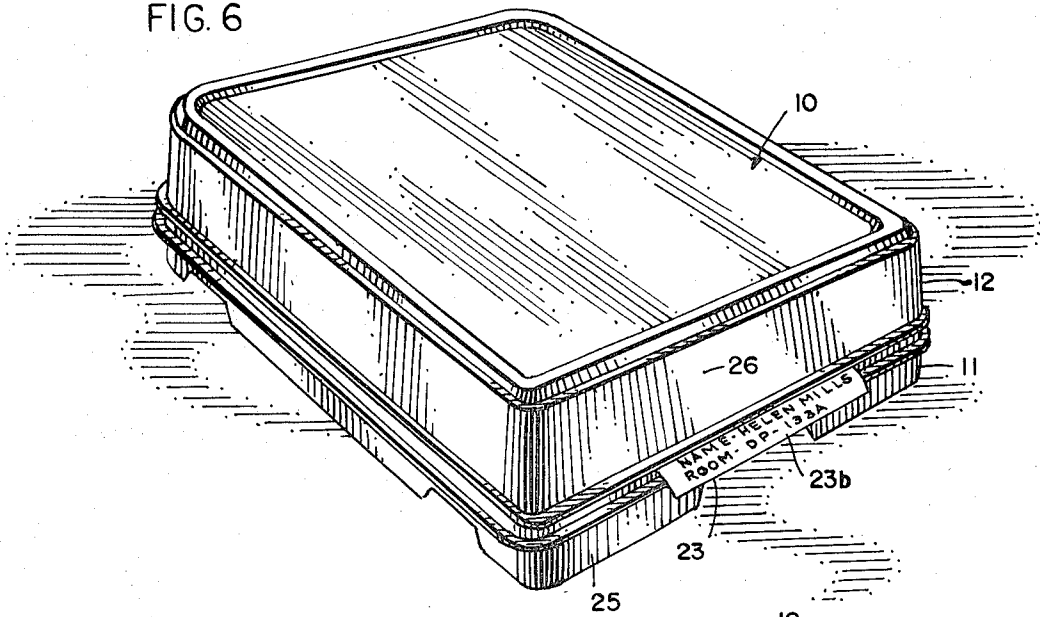


FIG. 7

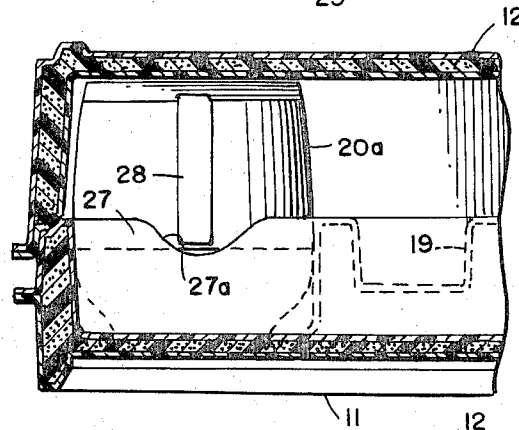
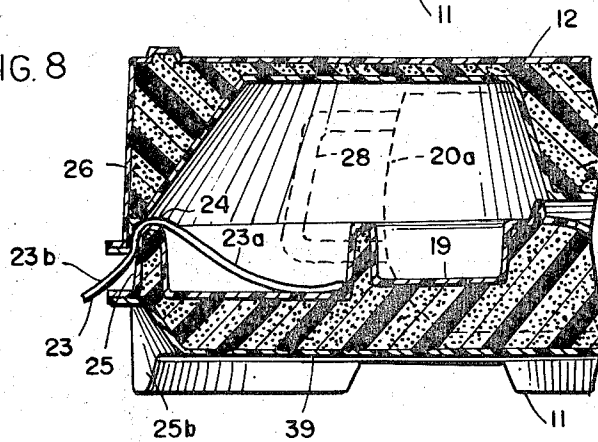


FIG. 8



INVENTORS:

WILLIAM A. MADALIN

CECILIA A. FOLLIS

BY: *Dawson, Dilroy, Galloys & Lungenus*

ATT'YS

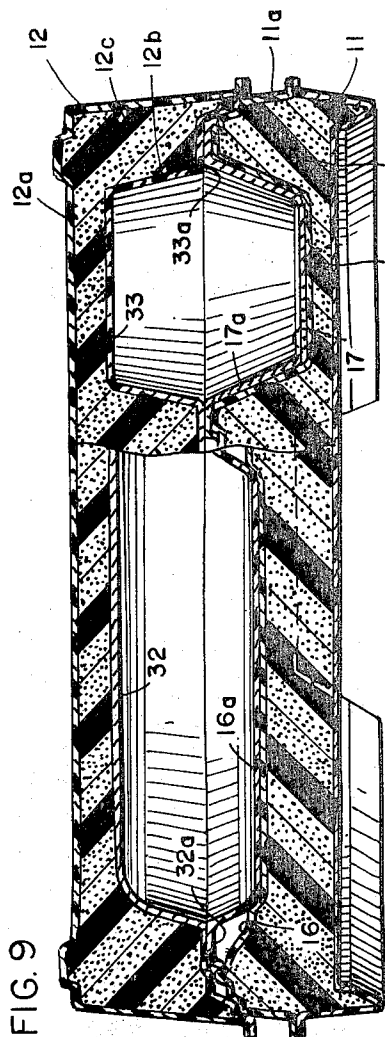


FIG. 9

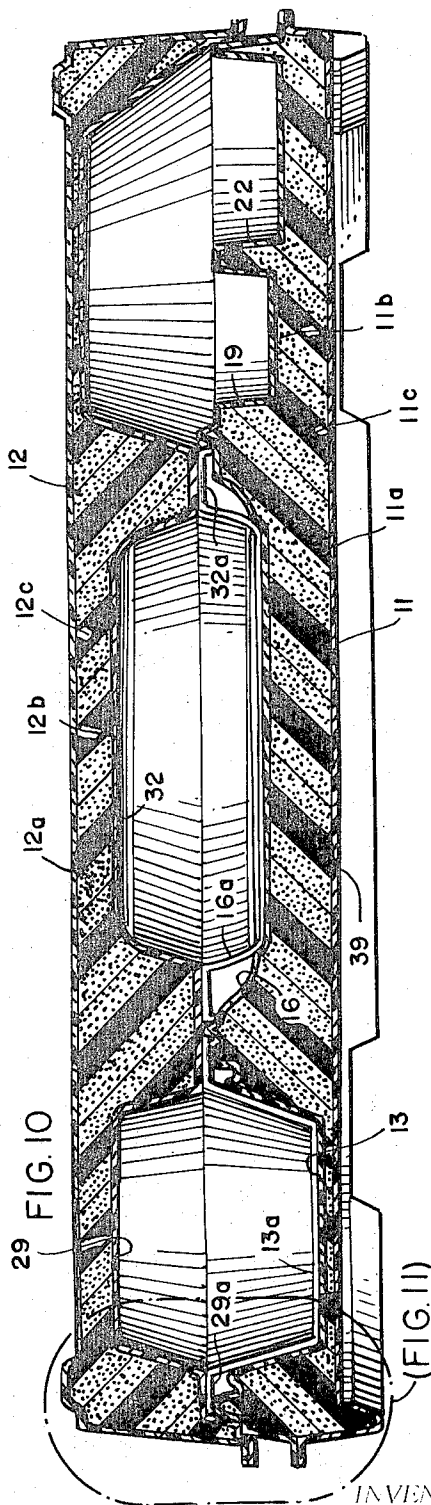
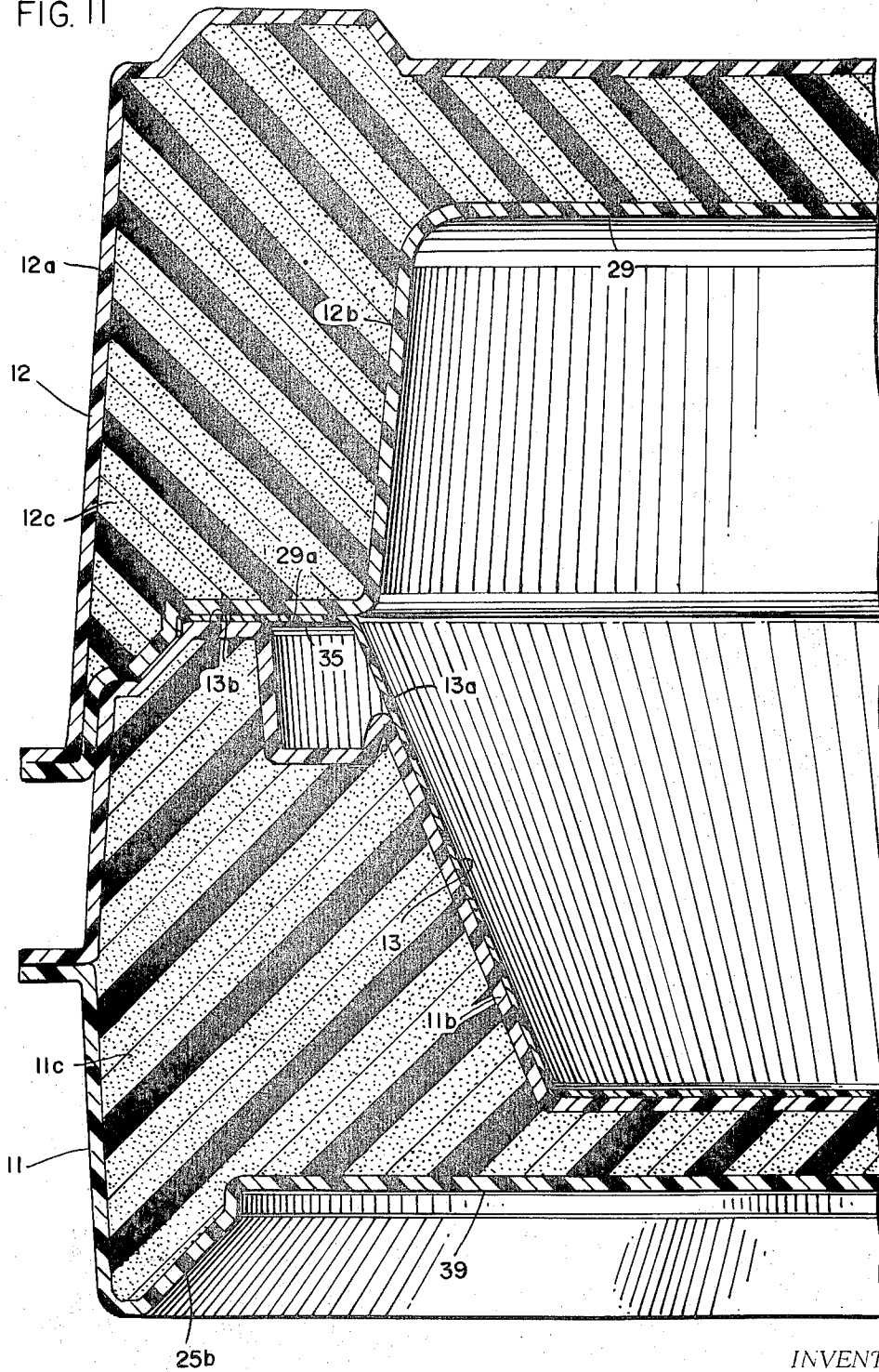


FIG. 10

INVENTORS:
 WILLIAM A. MADALIN
 CECILIA A. FOLLIS

BY: *Dawson, Tilley, Falloy & Lurgenus*
 ATT'YS

FIG. II



INVENTORS:

WILLIAM A. MADALIN
CECILIA A. FOLLIS

BY: *Dawson, Pittoy, Falloy & Lungenus*
ATT'YS

INSULATED COVERED SERVING TRAY

BACKGROUND

While insulated trays have been known in the past, such assemblies have for the most part consisted of insulated base and cover sections designed to hold a single plate or dish of food (Clarke U.S. Pat. Des. 158,050; Barron et al., U.S. Pat. Des. 191,124; Clarke U.S. Pat. No. 3,019,783). Insulated trays have also been developed to hold the dishes and utensils for a complete meal service, such trays being constructed so that the base section of one unit provides the insulated cover for another unit in the same stack (Innis U.S. Pat. No. 3,122,265; Bridges U.S. Pat. No. 3,532,247). Such latter arrangement is only partially effective since it lacks flexibility, requiring the trays to be dispensed in a pre-set sequence from the top of the stack and making last-minute adjustments in the order of service awkward and difficult.

SUMMARY

The present invention is concerned with an insulated tray assembly which overcomes the disadvantages of prior constructions and which, at the same time, is easy and convenient to handle in connection with the transporting of hot (and/or cold) foods from the site of preparation to the recipient. While the insulated serving tray is particularly suitable for use in hospitals, nursing homes, and other institutions, it will be apparent from the following that the tray assembly might also be used in other places where meals of hot and/or cold foods must be transported a substantial distance to the recipient, or where the interval of delivery is long enough to otherwise present a problem in maintaining the meals in serving condition.

The tray assembly includes an insulated base or tray section having a plurality of recesses for supporting a number of separate dishes. The dishes may be formed of plastic, ceramic, or paper materials and may be either reusable or disposable. Some or all of the dishes are provided with bordering rims having substantially flat upper surfaces which are covered and protected by flat undersurfaces of an insulated cover. The cover is provided with downwardly facing recesses which overlie the cavities of the dishes and which are preferably of a size slightly smaller than such cavities to deflect downwardly into the dishes food that might contact the cover during delivery and handling of the covered tray.

Each tray section is provided with handle recesses at its ends which not only facilitate loading, lifting and carrying of the assembly but which also allow for the circulation of drying air should the base or tray sections be stacked upon each other after washing. Indicia means in the form of a card is folded over a side flange of the base section and is clamped between the base and cover sections, a portion of the card being exposed externally of the assembly to indicate or identify the diet, the recipient, location, etc.

Other objects and advantages will appear as the specification proceeds.

DRAWINGS

FIG. 1 is a perspective view of a covered serving tray embodying the present invention, the assembly being illustrated in condition for handling and delivery;

FIG. 2 is a bottom view of the cover section illustrating the recesses or cavities thereof;

FIG. 3 is a top plan view of the base or tray section;

FIG. 4 is a fragmentary perspective view taken along line 4—4 and illustrating a handle recess of the base section;

FIG. 5 is an exploded perspective view illustrating the assembly;

FIG. 6 illustrates the assembly in condition for delivery, the indicia card being partially exposed to reveal the name and location of the recipient;

FIG. 7 is an enlarged fragmentary sectional view taken along line 7—7 of FIG. 3 but with the cover in place;

FIG. 8 is an enlarged fragmentary sectional view taken along line 8—8 of FIG. 3 but with the cover in place;

FIG. 9 is a transverse vertical sectional view taken along line 9—9 of FIG. 3 but showing the cover in place;

FIG. 10 is a generally longitudinal sectional view taken along line 10—10 of FIG. 3 but with the cover in place;

FIG. 11 is an enlarged sectional view illustrating the relationship of parts of the assembly, such sectional view being an enlargement of the portion circumscribed by the broken line in FIG. 10.

DESCRIPTION

Referring to the drawings, numeral 10 generally designates a covered tray assembly which includes a tray or base section 11 and a top or cover section 12. Each section is composed of a pair of plastic shells with a suitable insulating material, preferably a rigid plastic foam, disposed between the shells. Thus, cover section 12 has outer and inner shells 12a and 12b, respectively, with plastic foam 12c therebetween. Similarly, base section 11 has outer shell 11a, inner shell 11b, and insulating foam core 11c (FIGS. 9 and 10).

The insulating cores of the upper and lower sections may be foamed in place or may be introduced in some other manner into the space between the inner and outer shells. A rigid plastic foam, particularly one which bonds to the inner surfaces of the shells of the respective sections, is preferred. Rigid polyurethane or polystyrene foams may be used effectively. The shells of the respective sections may be formed of polystyrene, polycarbonate, or any other suitable plastic material capable of withstanding heat, cold, and the various chemical agents found in foods and in the cleaning of food-handling equipment.

Looking to FIGS. 5, 9, and 10, it will be observed that the inner (or upper) shell 11a of tray section 11 is provided with a plurality of recesses or depressions 13—22 for receiving articles of dishware and other items of the type illustrated. Thus, small plates and bowls 13a and 17a, and small plate 14a, may be received within recesses 13, 17 and 14, respectively. A larger plate 16a is adapted to be received within recess 16. Cups or vessels 15a, 18a, and 20a are intended to be received by recesses 15, 18 and 20, respectively. The other recesses 19, 21 and 22 may be used for condiments, beverage cartons and flatware (not shown), respectively, the flatware recess also being large enough to contain other items such as a napkin, menu card, and the like.

While a menu card or sheet may be disposed in its entirety within recess 22, one aspect of the invention lies in the cooperative relationship between such a card and the components of the tray assembly when the card is folded and supported as indicated in FIG. 8. There it will be observed that card 23 is folded along line or zone 24 and has one portion 23a disposed within recess 22 and a second portion 23b projecting outwardly from between the base and cover sections of the tray assembly. Enough of portion 23b is externally exposed to provide an indicia-bearing surface on which may be written the name and location of the patient, or any other appropriate information. In hospitals, where special diets are frequently required, such external indicia means is believed important in insuring that any given meal service will be delivered to the proper destination.

As shown in FIG. 8, the foldable menu card is supported with its folded portion 24 resting upon the upper surface of upstanding side wall 25 of the base section 11. If desired, such upper surface 25a may be rounded slightly, as illustrated in FIGS. 5 and 8. However, it is important that the rounded surface or wall of the base be high enough so that the card, when supported as shown in FIG. 8, will also be engaged by the undersurface of side wall 26 of cover section 12. The card is therefore clamped in position between the upper and lower sections and is held securely in place, in the manner illustrated in FIGS. 6 and 8, until the assembly reaches its destination and the cover section is removed.

Recess or compartment 22 is also defined in part by an inside wall 27 of tray section 11b (FIG. 5). Wall 27 extends between and separates recesses 22 and 20; however, it will be observed in FIGS. 5 and 7 that the upper edge of wall 27 is depressed or notched at 27a to accommodate the lower portion of the handle 28 of cup 20a when the cup is received within its cavity or compartment 20. The arcuate depression 27a insures that the cup will be oriented with its handle extending into the large flatware-receiving cavity 22. Consequently, the cup is oriented with its handle facing in a direction which will not interfere with closing of the upper and lower sections and, in particular, so that the handle 28 is exposed within large compartment 22 where it may be easily grasped by a user.

The underside of cover 12 is provided with a plurality of dome-shaped recesses 29-33 which are disposed above cavities 13-17, respectively, of the base section 11 (FIG. 5). The dome-shaped recesses are bordered by annular walls providing flat perimetric undersurfaces 29a-33a, such undersurfaces overlying and engaging the substantially flat rims of dishes 13a17a, respectively, when the parts are assembled. It is to be observed that the flat rims of the dishes are fully covered by the perimetric undersurfaces of the top section 12 and that the dome-shaped recesses of the top section are in most instances smaller in diameter than the cavities or central depressions of the dishes supported by the base section 11. Consequently, the rims of the dishes are protected against contact with food carried within the dishes should the tray be bumped or moved abruptly during delivery. The flat borders of the dishes tend to remain clean and neat in appearance and, at the same time, the dishes are locked against independent movement (relative to the upper and lower sections of the assembly) because their rims are retained between

the flat opposing annular surfaces bordering the recesses of the upper and lower tray sections.

FIG. 11 illustrates a typical relationship of the parts with the flat circular flange or rim 35 of dish 13a disposed between the flat opposing surfaces 29a and 13b of the upper and lower tray sections 12 and 11, respectively. It will be observed that the dome-shaped recess 29 of the upper section or cover has a maximum diameter no larger (in most instances slightly smaller) than the maximum inside diameter of dish 13a. Thus, should abrupt movement of the assembly tend to cause displacement of the food in the dish, the recessed undersurface 29 will tend to direct such back towards the central depression of dish 13a.

The tray assembly is generally rectangular in configuration and is adapted to be held and carried as illustrated in FIG. 1. To facilitate such operations, the walls 25 at opposite ends of the elongated base section 11, and along the longitudinal midline thereof, are cut away or interrupted to define finger openings or recesses 37 (FIG. 4). Each recess is defined by an inwardly and transversely extending upstanding wall 37a and a horizontal wall 37b, the latter being spaced well above the bottom edge 25a of the side wall of the base section. Recess 37 is therefore large enough to receive a user's fingers (as illustrated in FIG. 1) even when the bottom edge 25b of the base rests upon a flat supporting surface. Furthermore, the distance between undersurface 37b and the top surface 38 of cover section 12 when the parts are assembled is substantially less than the span between the thumb and middle finger of an average adult hand and, consequently, a user may easily hold the cover tightly in place with his thumbs as the entire assembly is carried, as shown in FIG. 1. Specifically, the distance between undersurface 37 and top surface 38 is substantially less than inches, and preferably under 5 inches.

It will be observed that the flat bottom wall 39 of the base section is spaced above the plane of lower edges 25b. One purpose of such a construction is to provide a space beneath the base section to accommodate irregularities in a supporting surface and thereby provide stability despite such irregularities. It is to be noted, however, that when base sections are stacked upon each other, as in a drying operation, air may circulate between such stacked sections to facilitate the drying action. In that connection, handle recesses 37 perform an important function in permitting the free flow of air between opposing surfaces of the stacked sections. If desired, notches or openings 40 may also be provided along the lower longitudinal edges of side walls 25 to further promote the free circulation of air between the stacked sections.

While in the foregoing we have disclosed an embodiment of the invention in considerable detail for purposes of illustration, it will be understood by those skilled in the art that many of these details may be varied without departing from the spirit and scope of the invention.

The claims:

1. In combination, an insulated tray section having a plurality of recesses for receiving dishes and the like, at least one of the dish-receiving recesses being bordered by a flat annular supporting surface, a dish disposed within said one recess, said dish having a central depression and having a generally flat rim resting upon said annular supporting surface of said tray section and

an insulated cover section extending over said tray section and having a dome-shaped recess above said dish, said dome-shaped recess having a diameter no greater than the diameter of the central depression of said dish, said cover also having an annular wall extending about said dome-shaped recess, said annular wall having a flat undersurface engaging the rim of said dish.

2. The combination of claim 1 in which said dome-shaped recess is of a diameter smaller than that of the central depression of said dish.

3. The combination of claim 1 in which said tray and cover sections are each generally rectangular in configuration.

4. The combination of claim 1 in which a plurality of dishes are disposed within the recesses of said tray section, said cover having a plurality of said dome-shaped recesses with the flat undersurfaces of the walls surrounding said dome-shaped recesses engaging the rims of said dishes.

5. The combination of claim 1 in which said tray section has a generally flat bottom surface, and a side wall extending about said tray section and projecting below the plane of said bottom surface to define a space therebeneath, said side wall having at least one pair of recesses along the bottom edge thereof and disposed at opposite sides of said tray section, said recesses being adapted to accommodate the fingers of a person carrying said tray section and communicating with said space to permit the circulation of air between adjacent tray sections when the same are stacked.

6. The combination of claim 5 in which said tray section has undersurface portions defining the upper limits of the finger recesses, the distance between said undersurface portions and the top of said cover being substantially less than 6 inches.

7. The combination of claim 6 in which said distance is less than 5 inches.

8. The combination of claim 1 in which said tray section is also provided with an open-topped compartment extending along a portion of a side wall of said tray section, said portion of said side wall being straight and having a round upper edge when viewed in cross section, and a card being folded over said rounded upper edge, said card having a first portion projecting downwardly into said compartment and a second portion extending downwardly alongside the outer surface of said side wall portion, said cover being provided with means for holding said card in place.

9. The combination of claim 8 in which said second portion of said card has an outer surface thereof bearing indicia concerning the destination of the tray assembly and the contents thereof.

10. The combination of claim 8 in which said means provided by said cover section for holding said card in

place comprises a side wall of said cover section having a lower edge extending along the side wall portion of said tray section and engaging said card.

11. The combination of claim 1 in which one of said recesses of said tray section is adapted to receive a handle-equipped drinking cup, said tray section also having an enlarged open-topped compartment adjacent said cup-receiving recess, and an upstanding wall between said compartment and said cup-receiving recess, said wall being provided with a notch for accommodating the handle of a cup adapted to be supported in said recess.

12. The combination of claim 11 in which a drinking cup is disposed within said cup-receiving recess, said cup having a handle projecting through said notch and into said compartment, said handle thereby being restrained within said notch and being accessible within said compartment for the grasping and removing of the cup from said tray section.

13. In combination, an insulated tray section having a plurality of recesses for receiving dishes and the like, an insulated cover section extending over said tray section and having dome-shaped recesses above said dish-receiving recesses, said tray section having a generally flat bottom surface and a side wall extending about and projecting below the plane of said bottom surface to define a space therebeneath, said side wall having at least one pair of recesses along the bottom edge at least and disposed at opposite sides of said tray section, said recesses being adapted to accommodate the fingers of the person carrying said tray section and communicating with said space to permit the circulation of air between adjacent tray sections when the same are stacked, said tray section being provided with an open-topped compartment extending along a portion of a side wall of said tray section, said portion of said side wall being straight and having a rounded upper edge when viewed in cross section, and a card being folded over said rounded upper edge, said card having a first portion projecting downwardly into said compartment and a second portion extending downwardly alongside the outer surface of said side wall of said tray section, said cover being provided with means for holding said card in place.

14. The combination of claim 13 in which said second portion of said card has an outer surface thereof bearing indicia concerning the destination of the tray assembly and the contents thereof.

15. The combination of claim 13 in which said means provided by said cover section for holding said card in place comprises a side wall of said cover section having a lower edge extending along the side wall portion of said tray section and engaging said card.

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