

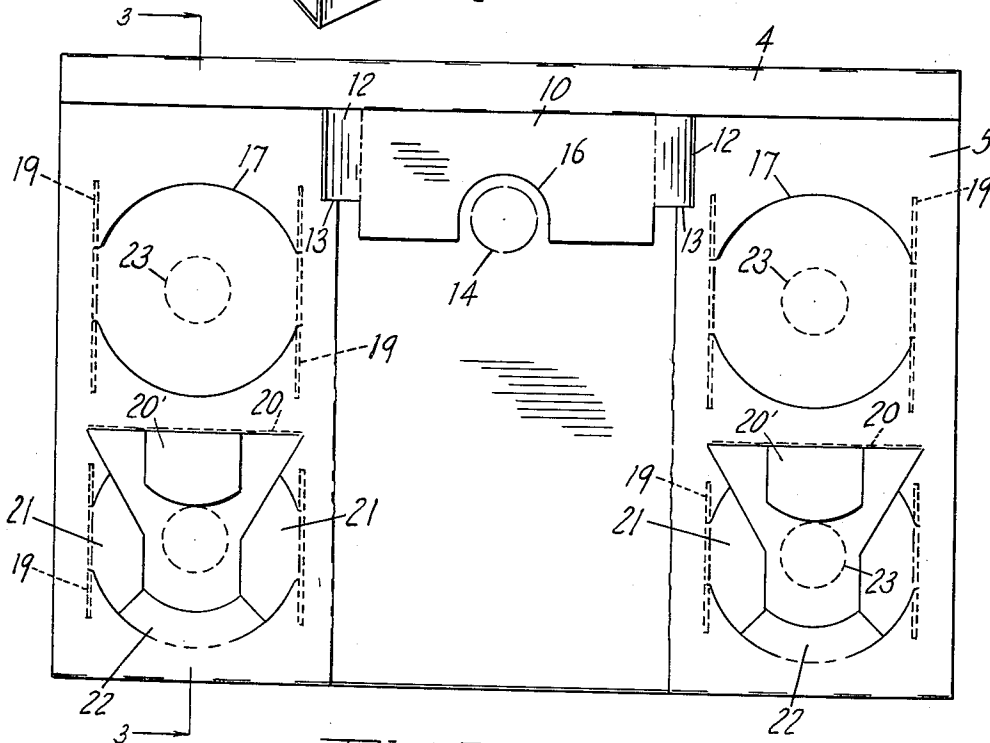
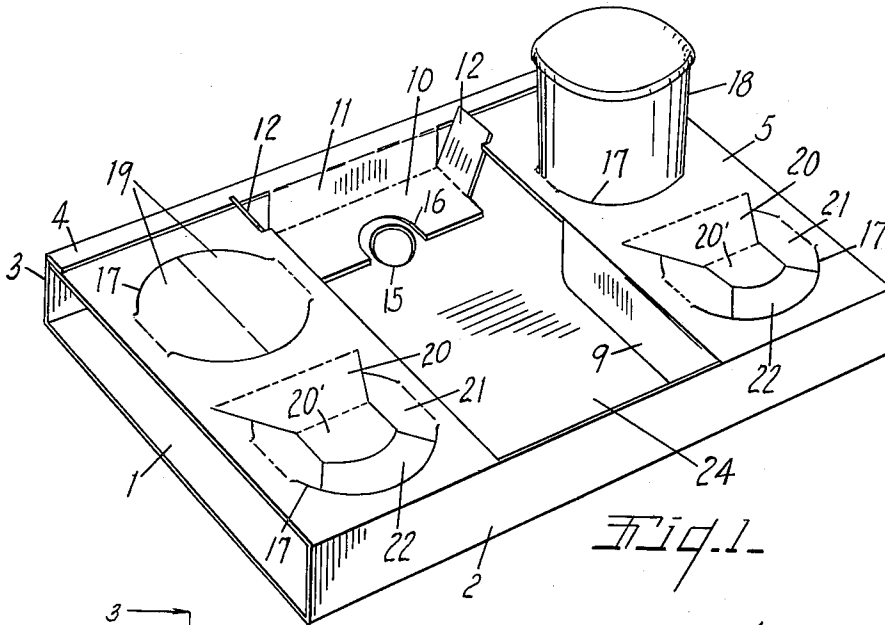
Oct. 24, 1961

M. J. COE
CARRYING TRAY

3,005,584

Filed Feb. 13, 1961

4 Sheets-Sheet 1



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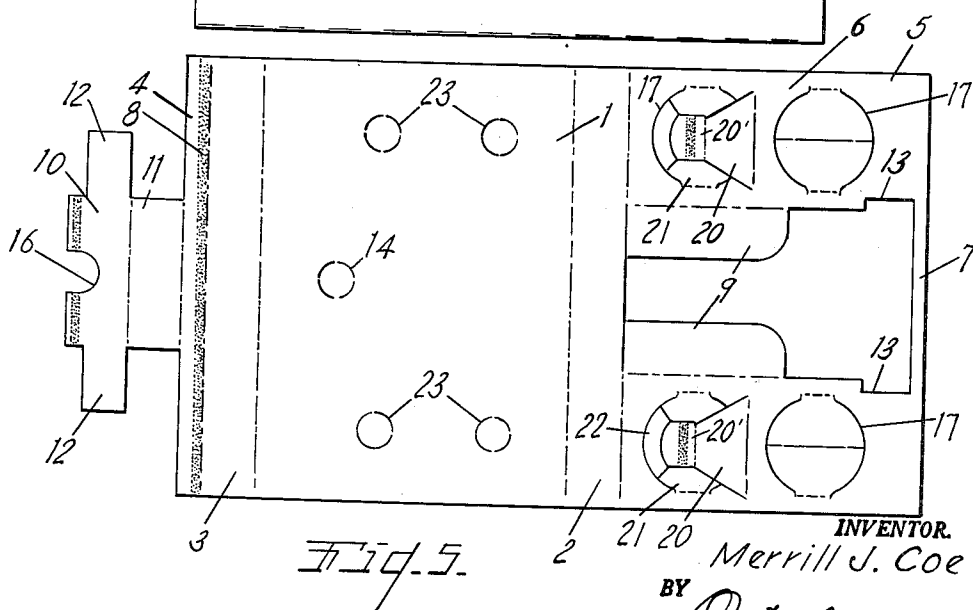
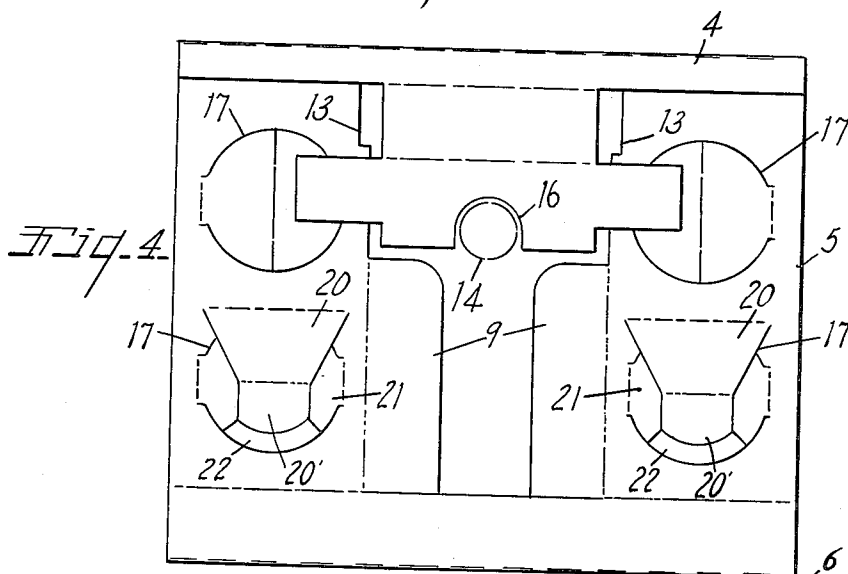
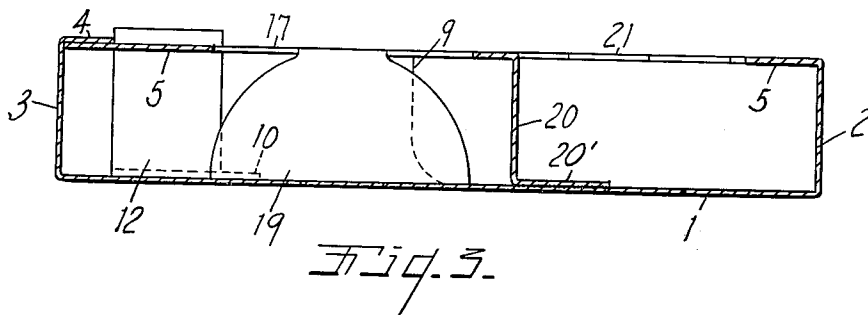
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M. J. COE
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4 Sheets-Sheet 2



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4 Sheets-Sheet 3

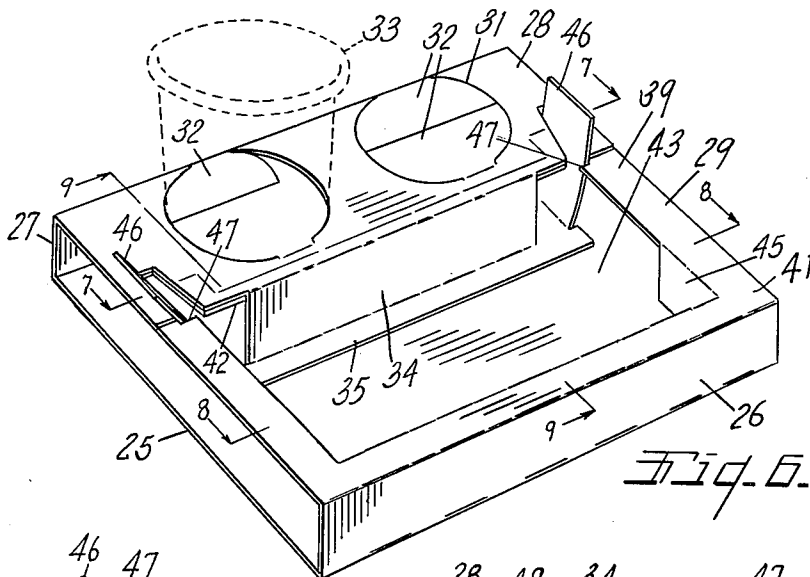


Fig. 6.

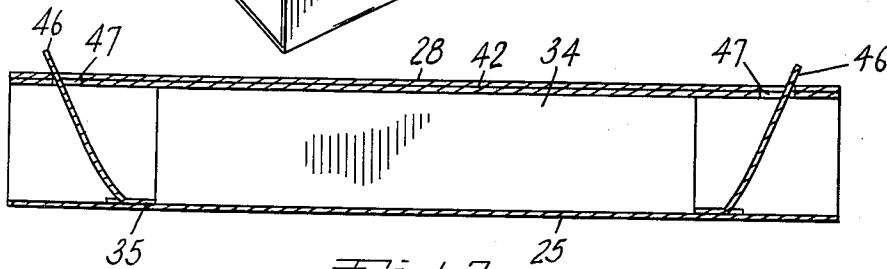


Fig. 7.

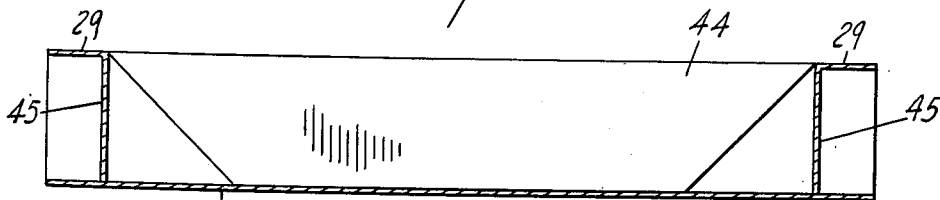


Fig. 8.

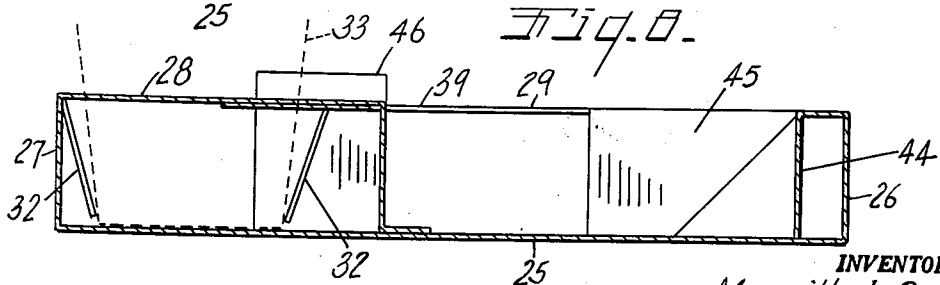


Fig. 9.

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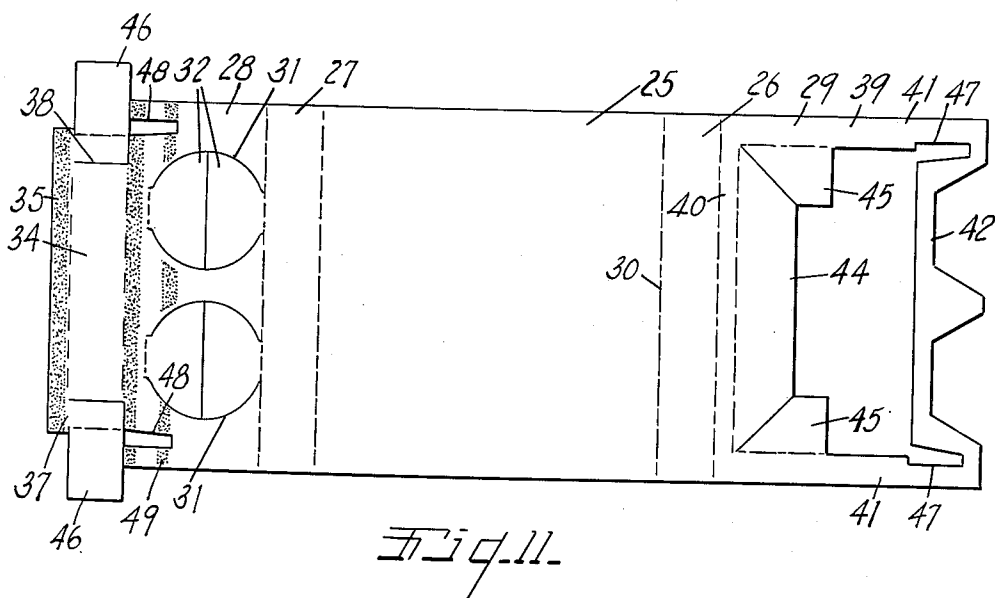
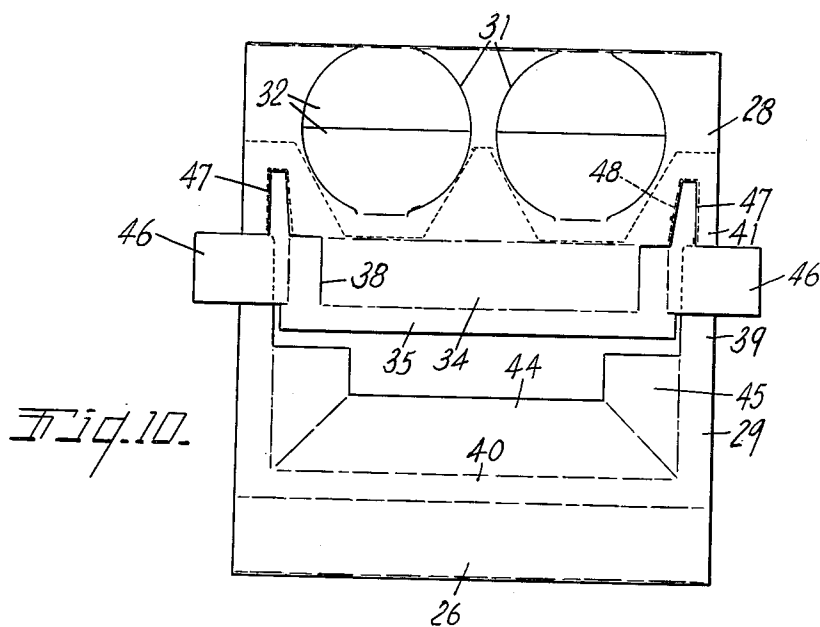
Oct. 24, 1961

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3,005,584

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4 Sheets-Sheet 4



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3,005,584

CARRYING TRAY

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19 Claims. (Cl. 229-28)

This invention relates to a collapsible serving tray. The main objects of this invention are,

First, to provide a collapsible serving tray formed of an integral blank which can be readily erected from the knock down and one which when erected is securely retained in erected position, and one which is capable of carrying relatively heavy loads in proportion to the gauge of fiberboard stock from which it is formed.

Second, to provide a collapsible serving tray embodying the foregoing advantages, which is automatically locked in erected position from the swinging of the collapsed tray to its erected position.

Third, to provide a serving tray having these several advantages which is formed of a unitary blank and one in which the parts are not likely to be fractured or torn as a result of stress placed thereon in erection and in use.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

FIG. 1 is a perspective view of a preferred embodiment of my invention in erected position, one receptacle being illustrated to show the relationship of the receptacles in use.

FIG. 2 is a plan view, the receptacle being omitted.

FIG. 3 is a cross sectional view on a line corresponding to line 3-3 of FIG. 2.

FIG. 4 is a plan view of the tray when collapsed.

FIG. 5 is a plan view of the blank of the embodiment of my invention of FIGS. 1 to 4 inclusive.

FIG. 6 is a perspective view of a modified form or embodiment of my invention.

FIG. 7 is a cross sectional view on a line corresponding to line 7-7 of FIG. 6.

FIG. 8 is a cross sectional view on a line corresponding to line 8-8 of FIG. 6.

FIG. 9 is a sectional view on a line corresponding to broken line 9-9 of FIG. 6.

FIG. 10 is a plan view of the tray of the embodiment of FIGS. 6 to 9 inclusive in collapsed form.

FIG. 11 is a plan view of the blank of the embodiment of my invention illustrated in FIGS. 6 to 10 inclusive.

The embodiment of my invention illustrated in FIGS. 1 to 5 inclusive is formed of an integral blank illustrated in FIG. 5 and comprising a bottom 1, side walls 2 and 3, the side wall 3 having a sealing flap 4 on its outer edge. The top member, designated generally by the numeral 5, comprises the spaced top members 6 which are hingedly connected to and extend from the top of the side walls 2. These top members 6 are connected by the strip 7. The sealing flap 4 overlaps the top unit 5 and is secured thereto as by adhesive indicated at 8. The top members 6 have integral struts 9 on their inner edges which are folded down into supporting engagement with the bottom when the tray is erected, see FIG. 1.

The tray is held in its erected position by a latch which automatically engages coacting keepers when the tray is adjusted to erected position, see FIGS. 1 and 2. This latch comprises the base member 10 which is connected to the inner edge of the sealing flap 4 by the strut 11, the latch base member being adhesively secured to the bottom 1. The latch members 12 extend from the ends of the base member and are springable in relation

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thereto. The top members 5 have recess-like keepers 13 on their inner edges with which the springable tongue-like latch members 12 automatically engage when the tray is adjusted from its collapsed position to its erected position and this may be accomplished merely by lateral pressure on the opposed side wall edges of the tray, the latches 12 being in overlapping relation to the top walls when the tray is collapsed. However, to facilitate erecting the tray, the bottom is provided with circular break-out perforations 14, see FIGS. 4 and 5, to provide a finger opening 15, see FIGS. 1 and 2. In the embodiment illustrated, the latch base member 10 is of such width that it is notched at 16 in alignment with this finger opening. Thus arranged, the tray may be erected from collapsed position merely by grasping the side thereof adjacent the latch member and with a finger engaging the opening applying pulling stress to the bottom. The latches automatically engage the keepers, as is illustrated in FIGS. 1, 2 and 3.

The top members 6 are provided with receptacle openings 17, these being dimensioned to receive receptacles conventionally indicated at 18. The stock forming these openings 17 is not removed but is cut to provide flaps 19 or the flaps 20, 21 and 22. These flaps are bent downwardly and the flaps 19 and 20 serve as top supporting struts.

In the embodiment illustrated, the bottom has circular perforations 23 or the like to enable the breaking out of portions of the bottom to receive the ends of tapered receptacles or the like, to keep them in upright position in the event the openings 17 are not dimensioned to support the particular receptacles. With this arrangement of parts, the tray when erected is very rigid and as stated it is merely necessary in erecting to insert the finger through the hole 14 in the bottom with the hand grasping the adjacent edge of the collapsed tray, and with a very little compression stress the collapsed tray is swung to erected position and the latches automatically engage the keepers.

When the tray is erected, the space between the end members provides an upwardly facing receptacle 24 adapted to receive food items such, for example, as sandwiches, cake and the like, or a dish-like container for food.

In the embodiment of my invention shown in FIG. 6, a single top member is provided instead of spaced top members, and this design or adaptation is somewhat more economical in the amount of material used and is more compact than the embodiment shown in FIGS. 1 to 5 inclusive. While the various parts of the embodiments correspond, the applicant is using separate numerals in designating the parts of the modified form or embodiment of the invention in order to avoid confusion.

The embodiment of my invention illustrated in FIGS. 6 to 11 inclusive comprises a bottom 25, side walls 26 and 27, top members 28 and 29, these bottom, side and top members being connected by hinges, score-lines forming the hinges being conventionally illustrated at 30, see FIG. 11. The top member 28 is provided with openings 31 adapted to receive receptacles, these openings being formed by flaps 32 which may be swung downwardly to receive a receptacle such as is indicated by dotted lines 33, see FIGS. 6 and 9. The top 28 is provided with a strut 34 on its inner edge terminating in a flap 35 which is lapped upon and adhesively secured to the bottom. The latches 36 are integrally connected at 37 to this sealing strip or flap 35, the latches being separated from the strut 34 by the slits 38.

The top member 39 extending from the opposite ends of the blank comprises the side portion 40, end portion 41 and the cross tie portion 42, the cross tie portion being disposed below and adhesively secured to the top

wall 28. The portion is designed to be removed to provide an upwardly facing receptacle designated generally by the numeral 43, see FIG. 6. This top unit is provided with downturned strut portions 44 and 45, see FIGS. 8 and 9.

The second top member is provided with keepers 47 for the latches 46. The top member 28 is provided with slots 48 which register with these keepers 47 when the tray is erected. The tray is illustrated in its collapsed form in FIG. 10, and it will be noted that the latches 46 overlap the top and with this arrangement it is only necessary to apply a lateral thrust to the tray and the latches automatically engage the keepers and the keepers maintain the tray in erected position, as is illustrated in FIG. 6.

The portion 42 of the second top member is notched, see FIG. 11, so as not to obstruct the receptacle receiving openings 30 of the top member 28. The adhesive for securing the underlying portions of the top member 39 to the underside of the top member 28 is indicated at 49.

The flap portions 20' of the flaps 20 are glued to the bottom of the tray so that these flaps 20 serve as supporting struts for the top.

In both embodiments of my invention, the latches automatically engage the coacting keepers when the tray is adjusted to erected position, and that as stated is accomplished merely by a lateral thrust or pull on the collapsed tray.

I have not illustrated other embodiments or adaptations of my invention, as it is believed that this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

Having thus described the invention, what is claimed as new and desired to secure by Letters Patent is:

1. A collapsible serving tray formed of an integral blank comprising a bottom, side walls hingedly connected to the bottom, and spaced top members hingedly connected to and extending from one side wall, the other side wall having a sealing flap hingedly connected thereto and secured to top members, a latch comprising a base member secured to said bottom and provided with springable latches at the ends thereof which overlap said top members when the tray is collapsed, said top members having notch-like keepers on their inner edges with which said latches automatically engage when the tray is adjusted to erected position, there being a strut hingedly connected to the outer edge of said latch base member and the inner edge of said wall flap, said top members having integral strut members hingedly connected to their inner edges and foldable downwardly into supported engagement with the bottom when the tray is erected, said top members being slit and scored to define receptacle receiving openings therein and to provide downwardly deflectable segments, at least one of said segments for each opening constituting a bottom engaging top member supporting strut.

2. A collapsible serving tray formed of an integral blank comprising a bottom, side walls hingedly connected to the bottom, and spaced top members hingedly connected to and extending from one side wall, the other side wall having a sealing flap hingedly connected thereto and secured to top members, a latch comprising a base member secured to said bottom and provided with springable latches at the ends thereof which overlap said top members when the tray is collapsed, said top members having keepers on their inner edges with which said latches automatically engage when the tray is adjusted to erected position, said top members having integral strut members hingedly connected to their inner edges and foldable downwardly into supported engagement with the bottom when the tray is erected, said top members being slit and scored to define receptacle receiving openings therein and to provide downwardly deflectable segments, at least one of said segments for each opening

constituting a bottom engaging top member supporting strut.

3. A collapsible serving tray formed of an integral blank comprising a bottom, side walls hingedly connected to the bottom, and spaced top members hingedly connected to and extending from one side wall, the other side wall having a sealing flap hingedly connected thereto and secured to top members, a latch comprising a base member secured to said bottom and provided with springable latches at the ends thereof which overlap said top members when the tray is collapsed, said top members having notch-like keepers on their inner edges with which said latches automatically engage when the tray is adjusted to erected position, there being a strut hingedly connected to the outer edge of said latch base member and the inner edge of said wall flap, aid top members having receptacle receiving openings therein.

4. A collapsible serving tray formed of an integral blank comprising a bottom, side walls hingedly connected to the bottom, and spaced top members hingedly connected to and extending from one side wall, the other side wall having a sealing flap hingedly connected thereto and secured to top members, a latch comprising a base member secured to said bottom and provided with springable latches at the ends thereof which overlap said top members when the tray is collapsed, said top members having keepers on their inner edges with which said latches automatically engage when the tray is adjusted to erected position, said top members having receptacle receiving openings therein.

5. A collapsible serving tray formed of an integral blank comprising a bottom, side walls hingedly connected to the bottom, and spaced top members hingedly connected to and extending from one side wall, the other side wall having a sealing flap hingedly connected thereto and secured to top members, a latch comprising a base member secured to said bottom and provided with springable latches at the ends thereof which overlap said top members when the tray is collapsed, said top members having keepers on their inner edges with which said latches automatically engage when the tray is adjusted to erected position, said top members having receptacle receiving openings therein, said bottom having a finger opening therein adjacent said latch, said base member having a notch in its inner edge concentric with said opening, said base member constituting a stiffening member for said bottom adjacent said opening.

6. A collapsible serving tray formed of an integral blank comprising a bottom, side walls hingedly connected to the bottom, and spaced top members hingedly connected to and extending from one side wall, the other side wall having a sealing flap hingedly connected thereto and secured to top members, a latch comprising a base member secured to said bottom and provided with springable latches at the ends thereof which overlap said top members when the tray is collapsed, said top members having keepers on their inner edges with which said latches automatically engage when the tray is adjusted to erected position, said top members having receptacle receiving openings therein, said top members being spaced to provide a receptacle.

7. A collapsible serving tray comprising a bottom, side walls hingedly connected to the bottom, and spaced top members hingedly connected to said side walls, a latch comprising a base member secured to said bottom and provided with springable latches at the ends thereof which overlap said top members when the tray is collapsed, said top members having keepers with which said latches automatically engage when the tray is adjusted to erected position, said top members being spaced to provide a receptacle between them and having integral elongated strut members hingedly connected thereto and disposed transversely of the tray and of the folding thereof and foldable downwardly into engagement with the bottom

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when the tray is erected, said top members being slit and scored to define receptacle receiving openings therein and to provide downwardly deflectable bottom engaging struts, said bottom having a finger opening therein adjacent said latch.

8. A collapsible serving tray comprising a bottom, side walls hingedly connected to the bottom, and spaced top members hingedly connected to said side walls, a latch comprising a base member secured to said bottom and provided with springable latches at the ends thereof which overlap said top members when the tray is collapsed, said top members having keepers with which said latches automatically engage when the tray is adjusted to erected position, said top members being spaced to provide a receptacle between them and having integral elongated strut members hingedly connected thereto and disposed transversely of the tray and of the folding thereof and foldable downwardly into engagement with the bottom when the tray is erected, said bottom having a finger opening therein adjacent said latch.

9. A collapsible serving tray comprising a bottom, side walls hingedly connected to the bottom, and spaced top members hingedly connected to said side walls, a latch comprising a base member secured to said bottom and provided with springable latches at the ends thereof which overlap said top members when the tray is collapsed, said top members having keepers with which said latches automatically engage when the tray is adjusted to erected position, said top members being slit and scored to define receptacle receiving openings therein and to provide downwardly deflectable bottom engaging struts, said bottom having a finger opening therein adjacent said latch.

10. A collapsible serving tray comprising a bottom, side walls hingedly connected to the bottom, and spaced top members hingedly connected to said side walls, a latch comprising a base member secured to said bottom and provided with springable latches at the ends thereof which overlap said top members when the tray is collapsed, said top members having keepers with which said latches automatically engage when the tray is adjusted to erected position, said bottom having a finger opening therein adjacent said latch.

11. A collapsible serving tray comprising a bottom, opposed side walls hingedly connected to the bottom, a top comprising first top member of a width less than the length of the bottom hingedly connected to the upper edge of one of said side walls and having a downwardly projecting strut on its inner edge provided with a base member fixedly secured to the bottom, said base member having springable latches projecting from the ends thereof, the other side wall having a frame-like second top member on its upper edge, the inner end of which is disposed under and fixedly secured to the underside of said first top member, the overlapping portions of said top members having latch receiving recesses therein and keepers at outer ends of said recesses, said first and second top members coacting to form side members of an open receptacle, said second top member having integral strut portions on the inner edges of its side and end portions which are supportingly engageable with the bottom when the tray is in erected position, said first top member having receptacle receiving openings therein, said latches being in overlapping relation to the end top portions of said tray when the tray is in collapsed position.

12. A collapsible serving tray comprising a bottom, opposed side walls hingedly connected to the bottom, a top comprising first top member of a width less than the length of the bottom hingedly connected to the upper edge of one of said side walls and having a downwardly projecting strut on its inner edge provided with a base member fixedly secured to the bottom, said base member having springable latches projecting from the ends thereof, the other side wall having a frame-like second top member on its upper edge, the inner end of which is disposed under and fixedly secured to the underside of said first top mem-

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ber, the overlapping portions of said top members having latch receiving recesses therein and keepers at outer ends of said recesses, said first and second top members coacting to form side members of an open receptacle, said first top member having receptacle receiving openings therein, said latches being in overlapping relation to the end top portions of said tray when the tray is in collapsed position.

13. A collapsible serving tray comprising a bottom, opposed side walls hingedly connected to the bottom, a top comprising first top member of a width less than the length of the bottom hingedly connected to the upper edge of one of said side walls and having a downwardly projecting strut on its inner edge provided with a base member fixedly secured to the bottom, said base member having springable latches projecting from the ends thereof, the other side wall having a frame-like second top member on its upper edge, the inner end of which is disposed under and fixedly secured to the underside of said first top member, the overlapping portions of said top members having latch receiving recesses therein and keepers at outer ends of said recesses, said first and second top members coacting to form side members of an open receptacle, said second top member having integral strut portions on the inner edges of its side and end portions which are supportingly engageable with the bottom when the tray is in erected position, said first top member having receptacle receiving openings therein.

14. A collapsible serving tray comprising a bottom, opposed side walls hingedly connected to the bottom, a top comprising first top member of a width less than the length of the bottom hingedly connected to the upper edge of one of said side walls and having a downwardly projecting strut on its inner edge provided with a base member fixedly secured to the bottom, said base member having springable latches projecting from the ends thereof, the other side wall having a frame-like second top member on its upper edge, the inner end of which is disposed under and fixedly secured to the underside of said first top member, the overlapping portions of said top members having latch receiving recesses therein and keepers at outer ends of said recesses, said first and second top members coacting to form side members of an open receptacle, said first top member having receptacle receiving openings therein.

15. A collapsible tray comprising a bottom, opposed side walls hingedly connected to the bottom, a top comprising a first top member of less width than the length of the bottom hingedly connected to the upper edge of one side wall and having a downwardly projecting strut on its inner edge provided with a base member fixedly secured to the bottom, said base member having springable latches projecting therefrom, a frame-like second top member hingedly connected to the upper edge of the other side wall, the inner ends of said second top member end members being fixedly connected to said first top member at the outer sides of said strut, the overlapping portions of said top members having openings therein adapted to receive said latches when the tray is in erected position, the outer edges of said openings being provided with inwardly facing keepers with which said latches automatically engage when the tray is erected, said first and second top members coacting to form the sides of an open receptacle, said second top member having an integral strut supportingly engageable with the bottom when the tray is in erected position, said first top member having an opening therein adapted to receive a receptacle.

16. A collapsible tray comprising a bottom, opposed side walls hingedly connected to the bottom, a top comprising a first top member of less width than the length of the bottom hingedly connected to the upper edge of one side wall and having a downwardly projecting strut on its inner edge provided with a base member fixedly secured to the bottom, said base member having springable latches projecting therefrom, a frame-like second top member hingedly connected to the upper edge of the other side wall, the inner ends of said second top mem-

ber end members being fixedly connected to said first top member at the outer sides of said strut, the overlapping portions of said top members having openings therein adapted to receive said latches when the tray is in erected position, the outer edges of said openings being provided with inwardly facing keepers with which said latches automatically engage when the tray is erected, said first and second top members coacting to form the sides of an open receptacle, said first top member having an opening therein adapted to receive a receptacle.

17. A collapsible tray comprising a bottom, opposed side walls hingedly connected to the bottom, a top comprising a first top member of less width than the length of the bottom hingedly connected to the upper edge of one side wall and having a downwardly projecting strut on its inner edge provided with a base member fixedly secured to the bottom, said base member having a springable latches projecting therefrom, a frame-like second top member hingedly connected to the upper edge of the other side wall, the end portions of said second top member being fixedly connected to said first top member, said top member having keepers coacting with said latches when the tray is in erected position, said first and second top members coacting to form the sides of an open receptacle, said first top member having an opening therein adapted to receive a receptacle.

18. A collapsible serving tray comprising a bottom, opposed side walls hingedly connected to the bottom, a

top member having a receptacle receiving opening therein hingedly connected to the side walls and having a bottom engaging strut on its inner edge, said top member having a recess in its inner edge constituting a keeper, and a latch comprising a base portion fixedly mounted on said bottom and having a unitary springably resilient tongue-like keeper engaging member projecting therefrom and which is disposed in overlapping relation to said top member when the tray is collapsed and which automatically engages said keeper when the tray is erected, said latch being disposed edgewise relative to the erecting and collapsing movement of said walls and top member.

19. A collapsible serving tray comprising a bottom, opposed side walls hingedly connected to the bottom, a top member having a receptacle receiving opening therein hingedly connected to the side walls, said top member having a recess therein constituting a keeper, and a latch comprising a base portion fixedly mounted on said bottom and having a unitary springably resilient tongue-like keeper engaging member projecting therefrom and which is disposed in overlapping relation to said top member when the tray is collapsed and which automatically engages said keeper when the tray is erected, said latch being disposed edgewise relative to the erecting and collapsing movement of said walls and top member.

No references cited.