

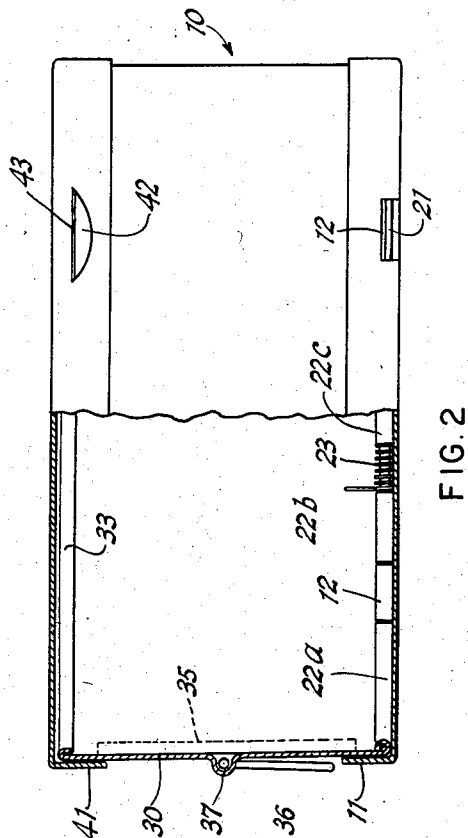
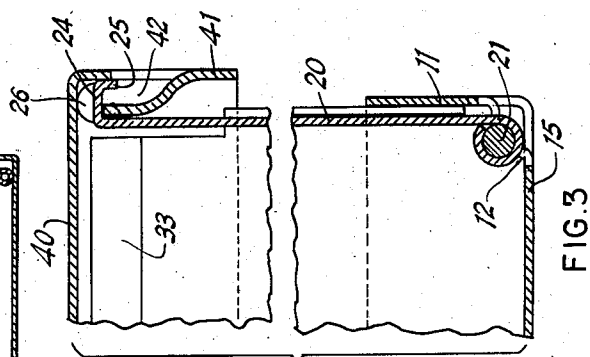
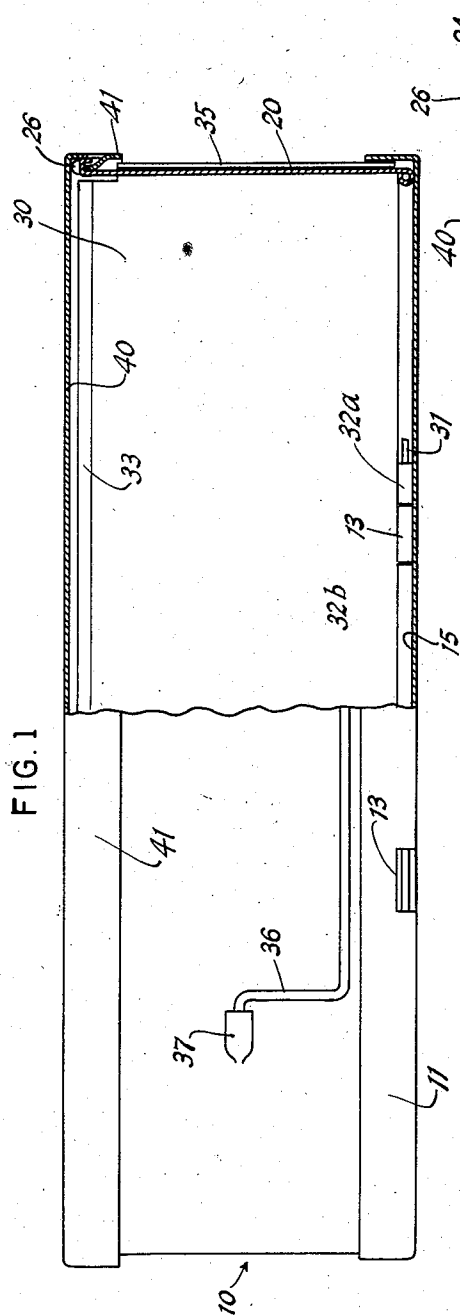
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R. MAYER ET AL
COLLAPSIBLE LUNCH BOX

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2 Sheets-Sheet 1



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FIG. 4

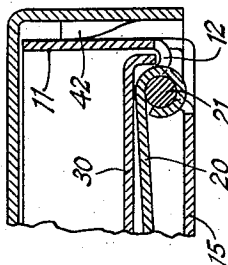
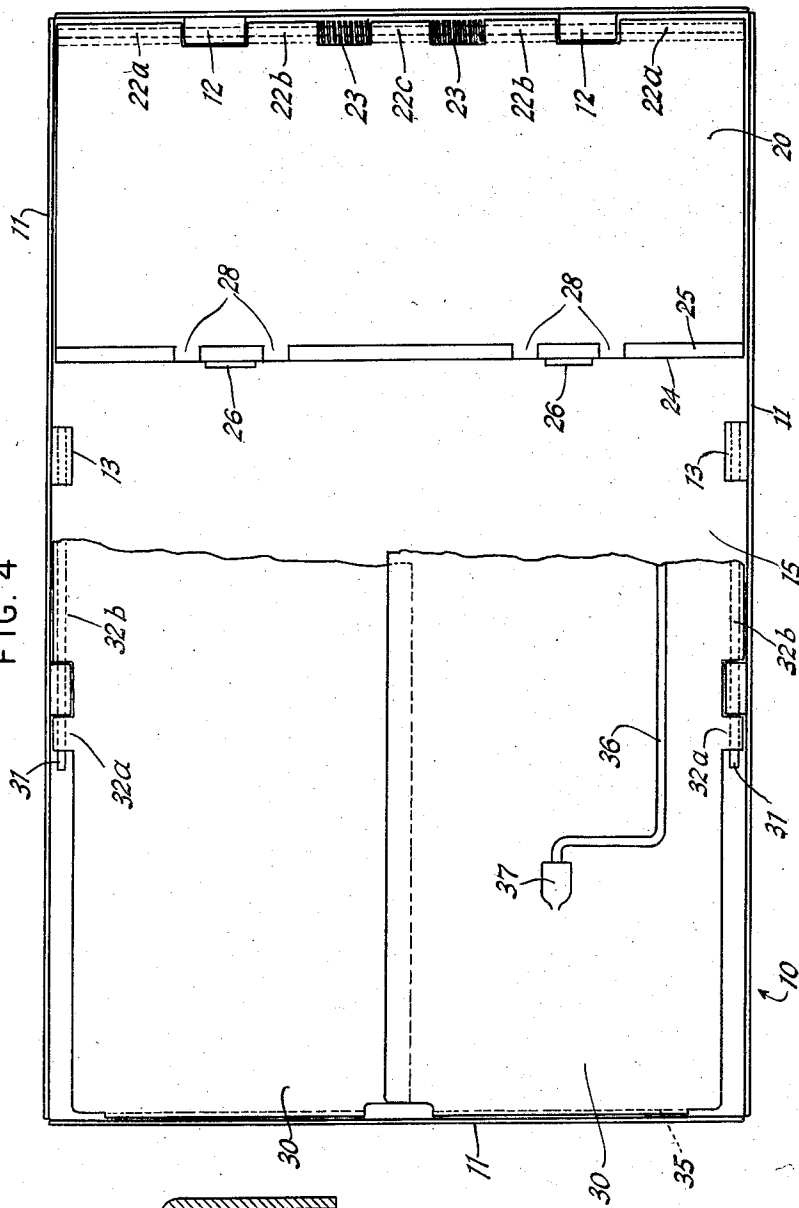
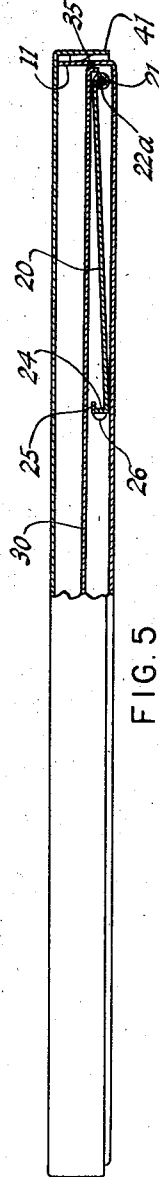


FIG. 6

FIG. 5



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COLLAPSIBLE LUNCH BOX

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5 Claims. (Cl. 220—6)

This invention relates to lunch boxes and, more particularly, to a collapsible, self-erecting lunch box which, when collapsed, forms a small flat package easily carried in a pocket.

Lunch boxes commonly in use at present are rather bulky, generally being designed not only to accommodate solid foods but also to serve as a carrier for a "Thermos" bottle or similar liquid container. As such lunch boxes serve to enclose the liquid container both when packed with lunch and when they are empty, the lunch box when empty is just as bulky as when it is packed, although its empty weight is less than its packed weight.

With the advent of automatic "drink" vending machines at factories and offices, and the serving of fresh milk and similar drinks at schools, there is no longer the need for carrying a "Thermos" bottle in a lunch box. Hence, many people who carry their lunches, such as factory and office employees and school children, no longer use lunch boxes of the usual type, preferring to carry lunch in a more compact package. Such packages, being usually improvised, are frequently unhandy and anything but neat. Thus, there is a need for a neat appearing lunch box of small bulk which can be easily collapsed and stored when empty.

To this end, the present invention is directed to an easily collapsed and self-erecting lunch box of small bulk which, when empty, can be collapsed into a flat package small enough to be slipped into a coat pocket, for example. More specifically, the invention lunch box comprises a substantially rectangular base bounded by a shallow peripheral flange. This base has walls hinged to it adjacent each edge and inside the flange, with one pair of opposite walls being spring biased to the erect position. The other pair of opposite walls overlaps the hinges of the first pair, at each end, and have means on their corner forming edges, such as inwardly directed flanges, limiting movement of the spring biased walls to the erected position. This second pair of walls is limited against outward movement by the base flange, and held in the erected position by the spring biased walls.

To collapse the lunch box, the spring biased walls are folded against the base and then the other two walls are folded over the previously collapsed walls. In the folded position, the four walls are "recessed" within the base peripheral flange. A rectangular cover is provided having a peripheral flange which frictionally embraces the base flange, thus forming a closed flat package of small dimensions.

To erect the lunch box, a handle secured to one of the overlying walls is pulled, which swings this wall outwardly. This releases the spring biased walls to swing to the erect position, in turn forcing both the other walls to the erect position.

One pair of opposite walls, preferably the spring biased walls, have outwardly directed perpendicular flanges on their free edges terminating in downwardly extending lips perpendicular to the flanges. The cover, whose flange has a frictional embracing fit with the free edges

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of the erected walls, is provided with latching means releasably engageable with such flanges or lips, which latter constitute abutments on the free edges of the wall. The wall also carries resilient means compressed against such flanges when the cover is so latched providing a tight, non-rattling fit of the cover on the erected lunch box.

For an understanding of the invention principles, reference is made to the following description of a typical embodiment thereof as illustrated in the accompanying drawings.

In the drawings:

Figs. 1 and 2 are, respectively, side and end elevations, partly in section, of the erected lunch box with its cover thereon;

Fig. 3 is an enlarged sectional view of the right hand end of Fig. 1, illustrating certain details of construction;

Fig. 4 is a plan view, partly broken away, of the collapsed lunch box with the cover removed;

Fig. 5 is a side elevation view, partly in section, of the collapsed lunch box with the cover applied; and

Fig. 6 is an enlarged sectional view of the left hand end of Fig. 5, illustrating certain details of construction.

Referring to the drawings, the lunch box 10 of the invention includes a substantially flat rectangular base 15 having a shallow, perpendicular peripheral flange 11. At longitudinally spaced points along each edge of base 15, portions of the base and its flange, at their junction, are deformed inwardly to form hinge loops 12 and 13. The hinge loops 12 on each end of the base are offset inwardly to a somewhat greater extent than the hinge loops 13 on each side of the base, for a purpose which will appear hereinafter.

Each pair of spaced hinge loops 12 at an end of base 15 receives a hinge pin or pintle 21 on which is pivotally mounted an end wall 20. End walls 20 have their inner ends curved to form spaced hinge loops 22a, 22b and 22c. Each loop 12 on the base engages pin 21 between loops 22a and 22b. Between loop 22c and loops 22b, each pin 21 is embraced by a coil spring 23, the springs 23 being so disposed as to bias wall 20 to swing upwardly away from base 15.

The free end of each wall 20 is formed with an outwardly extending flange 24 substantially perpendicular to the wall and terminating in a lip 25 extending inwardly substantially parallel to wall 20. The width of each flange 24 is substantially equal to the spacing of a wall 20 from base flange 11. For a purpose to be described, resilient elements 26 are adhesively or otherwise secured to the outer surface of flange 24.

Each pair of spaced hinge loops 13 on a side edge of base 15 receives a hinge pin or pintle 31 on which is pivotally mounted a side wall 30. Walls 30 have the intermediate portions of their inner ends curved to form spaced hinge loops 32a and 32b, the hinge loops 13 on base 15 each being interposed between one outer hinge loop 32a and intermediate hinge loop 32b. Pin 31 may project somewhat beyond loops 32b and be bent or otherwise deformed to anchor it in place. The outer edge of each wall 30 is reversely bent to form a reinforcement 33.

It will be noted that the hinge connection of each side wall 30 to base 15 is immediately adjacent flange 11, so that each wall 30 lies against flange 11 in the erected position. Flange 11 thus limits swinging movement of walls 30, away from base 11, to the erect position. In turn, walls 30 are formed to limit outward movement of walls 20 to the erect position.

For this purpose, each wall 30 has a length such that, at each end, it extends beyond or overlaps the hinge connections of walls 20 to base 15. In addition, each side, or corner-forming, edge of each wall 30 is formed with suitable limiting means, such as a shallow inwardly

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directed perpendicular lip or flange 35, extending along the major portion of such edge. These lips engage the walls 20, when the latter spring away from base 15, to limit movement of walls 20 to the erect position.

The lunch box is provided with a cover 40 substantially rectangular in form and slightly longer than base 15. Cover 40 has a peripheral flange 41 arranged to frictionally fit over the reinforcements 33 on walls 30 in the erected position of the walls. Each end section of flange 41 is formed with a pair of inwardly struck loops 42 located along the edge at points corresponding to the locations of the resilient abutments 26 on flanges 24. On each side of each such abutment 26, the lip 25 of each flange 24 is cut away as at 28 (Fig. 4).

When the lunch box is erected, cover 40 is placed over the upper edges of the walls and pressed inwardly. This compresses abutments 26 so that the upper straight edges 43 of loops 42 will snap under lips 25 and the loops will move into cutouts 28. Expansion of abutments 26 moves the cover 40 outwardly so that loop edges 43 engage firmly beneath flanges 24, anchoring cover 40 in place and preventing any rattling.

To collapse the lunch box, cover 40 is removed by pressing it inwardly and pushing walls 20 toward each other to release loops 42 from cutouts 28. The walls 20 are then folded against base 15, and walls 30 are folded over the collapsed walls 20. Cover 40 is then frictionally engaged with base 40 to enclose the collapsed walls, flange 41 frictionally embracing the side sections of flange 11 and loops 42 frictionally engaging the end sections of flange 11.

To erect the lunch box, cover 41 is first disengaged from base 15. One wall 30 is provided with a handle 36 pivoted in pockets 37 struck out from the wall. Handle 36 is grasped to pull the associated wall 30 outwardly. With the weight of this wall released from the underlying walls, springs 23 snap walls 20 to the erect position, also forcing both walls 30 outwardly against flange 11. The flanges 35 on walls 30 limit the outward movement of walls 20, and walls 20 hold walls 30 in the erect position.

The described arrangement thus provides a simple, compact and rugged lunch box which is self-erecting. When the box is collapsed, it forms a compact flat package easily slipped into a coat pocket.

While a specific embodiment of the invention has been shown and described in detail to illustrate the application of the invention principles, it will be understood that the invention may be embodied otherwise without departing from such principles.

What is claimed is:

1. A collapsible lunch box comprising, in combination, a substantially rectangular base including a substantially flat bottom wall having a substantially perpendicular and relatively narrow peripheral flange; a pair of first walls hingedly connected to said base adjacent one pair of opposite edges of the latter inwardly of the peripheral flange by a hinge pin extending along in direct engagement with the base; a pair of second walls hingedly connected to said base adjacent the other pair of opposite edges of the latter inwardly of the peripheral flange by a hinge pin extending along in direct engagement with the base and each overlapping the hinge connections of the first walls; each wall having an outwardly projecting flange along its upper edge perpendicular to the wall and terminating in a downwardly directed lip parallel to the wall; spring means biasing each first wall to swing away from said base to an erected position; means on each second wall, engageable with a first wall, limiting movement of said first walls to an erected position substantially normal to said base; said first walls, in the erected position, holding said second walls in the erected position; the peripheral flange on said base limiting movement of said second walls to an erected position substantially normal to said base; and a substantially rectangular cover arranged to overlie said walls when the latter are collapsed

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against said base, and having a peripheral flange arranged to frictionally embrace the peripheral flange on said base; the flange on said cover being arranged to frictionally engage the downwardly directed lips of said walls in the erected position of the latter.

2. A collapsible lunch box comprising, in combination, a substantially rectangular base; a pair of first walls hingedly connected to said base adjacent one pair of opposite edges by a hinge pin extending along in direct engagement with the base; a pair of second walls hingedly connected to said base adjacent the other pair of opposite edges by a hinge pin extending along in direct engagement with the base and each overlapping the hinge connections of the first wall; spring means biasing each first wall to swing away from said base to an erected position; means on each second wall, engageable with a first wall, limiting movement of said first walls to an erected position substantially normal to said base; said first walls, in the erected position, holding said second walls in the erected position; a substantially rectangular cover having a peripheral flange arranged to frictionally engage the upper edges of said walls in the erected position; an opposed pair of said walls having outwardly projecting flanges substantially perpendicular to their free edges; latch means on said cover releasably engageable beneath said outwardly projecting flanges; and resiliently compressible abutments on the upper surfaces of said outwardly projecting flanges engageable with said cover and compressed when said cover is latched.

3. A collapsible lunch box comprising, in combination, a substantially rectangular base; a pair of first walls hingedly connected to said base adjacent one pair of opposite edges by a hinge pin extending along in direct engagement with the base; a pair of second walls hingedly connected to said base adjacent the other pair of opposite edges by a hinge pin extending along in direct engagement with the base and each overlapping the hinge connections of the first wall; spring means biasing each first wall to swing away from said base to an erected position; means on each second wall, engageable with a first wall, limiting movement of said first walls to an erected position substantially normal to said base; said first walls, in the erected position, holding said second walls in the erected position; a substantially rectangular cover having a peripheral flange arranged to frictionally engage the upper edges of said walls in the erected position; an opposed pair of said walls having outwardly projecting flanges substantially perpendicular to their free edges; latch means on the flange of said cover releasably engageable beneath said outwardly projecting flanges; and resiliently compressible abutments on the upper surfaces of said outwardly projecting flanges engageable with said cover and compressed when said cover is latched.

4. A collapsible lunch box comprising, in combination, a substantially rectangular base; a pair of first walls hingedly connected to said base adjacent one pair of opposite edges by a hinge pin extending along in direct engagement with the base; a pair of second walls hingedly connected to said base adjacent the other pair of opposite edges by a hinge pin extending along in direct engagement with the base and each overlapping the hinge connections of the first wall; spring means biasing each first wall to swing away from said base to an erected position; means on each second wall, engageable with a first wall, limiting movement of said first walls to an erected position substantially normal to said base; said first walls, in the erected position, holding said second walls in the erected position; a substantially rectangular cover having a peripheral flange arranged to frictionally engage the upper edges of said walls in the erected position; an opposed pair of said walls having outwardly projecting flanges substantially perpendicular to their free edges; downwardly extending lips normal to the free edges of said outwardly projecting flanges; latch means on said cover releasably engageable beneath said lips; and re-

siliently compressible abutments on the upper surfaces of said outwardly projecting flanges engageable with said cover and compressed when said cover is latched.

5. A collapsible lunch box comprising, in combination, a substantially rectangular base; a pair of first walls hingedly connected to said base adjacent one pair of opposite edges by a hinge pin extending along in direct engagement with the base; a pair of second walls hingedly connected to said base adjacent the other pair of opposite edges by a hinge pin extending along in direct engagement with the base and each overlapping the hinge connections of the first wall; spring means biasing each first wall to swing away from said base to an erected position; means on each second wall, engageable with a first wall, limiting movement of said first walls to an erected position substantially normal to said base; said first walls, in the erected position, holding said second walls in the erected position; a substantially rectangular cover having a peripheral flange arranged to frictionally engage the upper edges of said walls in the erected position; an opposed pair of said walls having outwardly projecting

flanges substantially perpendicular to their free edges; offsets on the flange of said cover releasably engageable beneath said outwardly projecting flanges; and resiliently compressible abutments on the upper surfaces of said outwardly projecting flanges engageable with said cover and compressed when said cover is latched.

References Cited in the file of this patent

UNITED STATES PATENTS

1,003,107	Heyman	Sept. 12, 1911
1,206,090	Carper et al.	Nov. 28, 1916
1,239,223	Ross	Sept. 4, 1917
1,626,369	Williamson	Apr. 26, 1927
1,793,362	Graves	Feb. 17, 1931
1,809,523	McLean	June 9, 1931
1,967,506	Harrison	July 24, 1934

FOREIGN PATENTS

8,220	Great Britain	1898
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