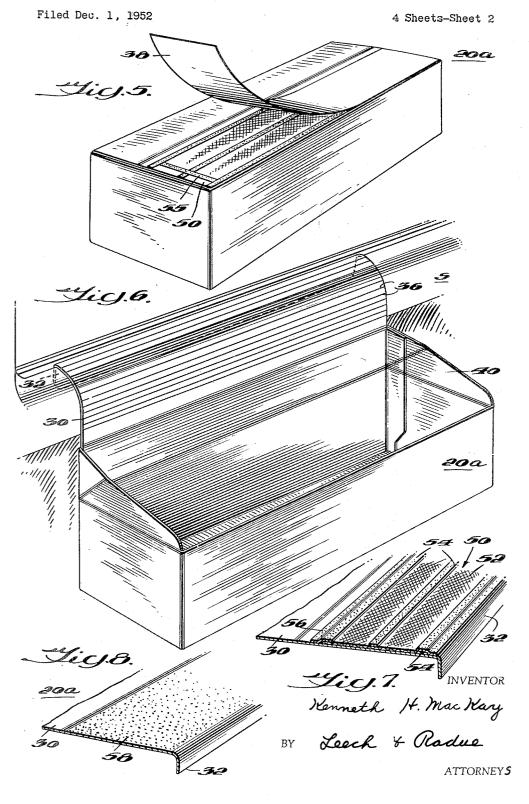
SELF-SUSPENDING DISPOSABLE SERVICE BOX

Filed Dec. 1, 1952 4 Sheets-Sheet 1 INVENTOR Kenneth H. Mac Hay BY Leech + Radue

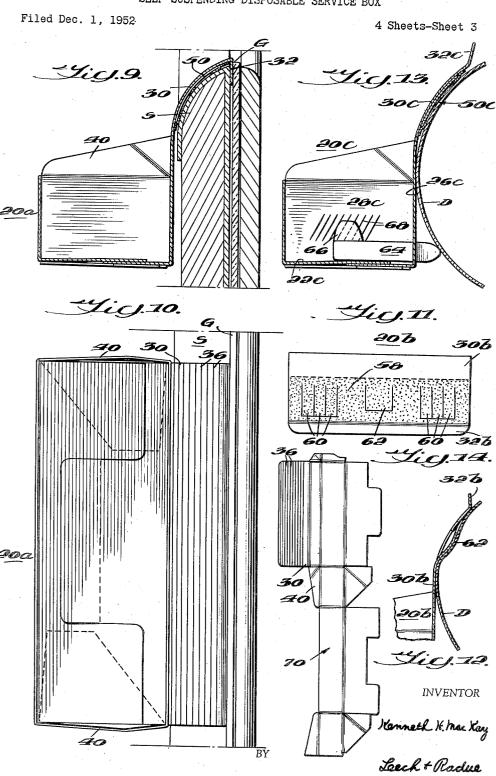
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SELF-SUSPENDING DISPOSABLE SERVICE BOX



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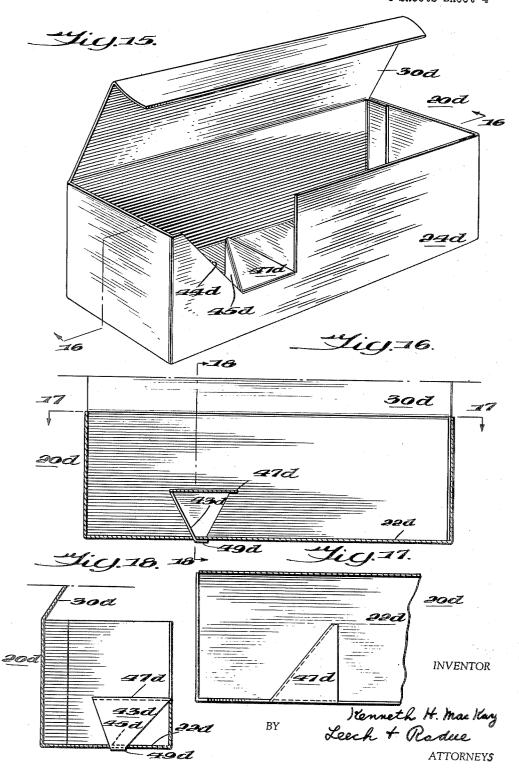
SELF-SUSPENDING DISPOSABLE SERVICE BOX



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SELF-SUSPENDING DISPOSABLE SERVICE BOX Kenneth H. MacKay, Ocala, Fla.

Application December 1, 1952, Serial No. 323,397 11 Claims. (Cl. 229—43)

This invention relates to a self-suspending disposable service box of paper or the like for accessory use in the serving and eating of foods and drinks.

The serving of food to the patrons of drive-ins or curb service eating places presents a number of problems. The trays hitherto used for detachable securing to the automobile of the patron are expensive, require picking up by the serving personnel when the customer or patron is ready to leave, and involve a substantial item of expense when they are lost by reason of the customer driving away before removal. The most used of the present devices comprise a substantial tray of synthetic plastic material and metal attaching clamps or supports. The capital investment in such equipment is considerable, and the cost of maintaining the plastic trays in sanitary condition adds appreciable expense to a business having a fairly limited margin of profit.

The problems outlined are solved and further advantages are obtained with the provision of the novel, inexpensive box construction of this invention. In general this box, which is of paper or equivalent construction, is of rectangular form and provided with a cover flap having self-attaching features by means of which the box containing food such as a beverage in a paper cup, French-fried potatoes, and a sandwich bun may be conveniently served with a minimum of effort, readily supported by attachment to a window sill, dash or like of an automobile, disposed of completely after use without necessity for cleaning, and if desired taken to some other convenient place for eating of the food contents.

It is a general object of this invention to provide a simple, inexpensive paper box having a cover flap that may be readily conformed to a supporting surface and attached thereto by pressure sensitive adhesive means disposed in a particular relation on the outer face of said flap.

A further object of the invention is to provide a box of this type with a cover or closure flap that is formed with longitudinal scoring on the inner face for ready bending over the supporting surface, and has the adhesive means on the outer face disposed in an area coextensive with the scoring, and the free marginal portion of the cover flap left without adhesive so that it may be used to place the cover flap in securing position and to be inserted between the window sill and window glass.

An additional object of the invention is to provide a 60 box of this kind with a readily detachable masking strip on the exposed pressure sensitive adhesive so that the box may be conveniently handled as an article of manufacture.

A particular feature of this invention resides in the provision of integral box means extending between the inner portion of the closure flap and the front wall of the box in the form of a gusset that may be infolded, and which, when in use, helps to maintain the closure flap in upright position and to support the forward or front wall portion of the box in a stronger and firmer manner.

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Another specific object of the invention is attained by cutting and folding the front or forward wall of the box to provide in use a horizontally disposed means for retaining a cup or the like in one corner portion, and additionally, if desired, an infolded shelf portion for supporting a sandwich.

An additional specific object of the invention resides in the employment of a pressure sensitive adhesive area comprising a flexible fabric-like piece secured by peripheral margin portions to the outer face of the closure flap, and having a plurality of spaced pressure sensitive strips adhesively mounted thereon to afford a simple attaching means that will be less subject to dislodgment by vibration when the automobile is in motion.

A still further specific object of the invention is found in the provision of a cover flap having separate spaced tongues along the length of the adhesive area for selective engagement with an irregular surface of the vehicle or the like.

A still further feature of the invention resides in the optional provision of an adjustable member adapted to project from the rear wall of the box to engage the supporting object and prevent inward sagging.

These and other features of the invention contributing to satisfaction in use, economy in manufacture, and adaptability to various conditions will be more fully understood from the following description of a preferred embodiment of the invention and several modifications thereof, when taken in connection with the accompanying drawings, in which:

Fig. 1 is a side perspective view of a preferred embodiment of the box with the closure flap in closed position and the masking strip about to be removed for attaching of the box to a support;

Fig. 2 is a side perspective view of the box shown in mounted relation on the sill of an automobile and with all parts of the box, now open, in position for use;

Fig. 3 is a cross section of the adhesive-bearing part of the cover flap, taken on line 3—3 of Fig. 1;

Fig. 4 is a partial longitudinal section of the same cover flap portion of the box taken on line 4—4 of Fig. 1;

Fig. 5 is a side perspective view of a slightly modified embodiment of the box with the flap in closure relation and showing beneath the partially removed masking strip a different form of adhesive attaching means;

Fig. 6 is a side perspective view of the box of Fig. 5 mounted for use on the window sill of an automobile;

Fig. 7 is a fragmentary and partially sectioned view of the specific adhesive carrying means on the closure flap 50 of Fig. 5;

Fig. 8 is a view similar to Fig. 7 and showing a further modified form of adhesive means;

Fig. 9 is a vertical section showing the box of Fig. 1 mounted on the window sill of an automobile door;

Fig. 10 is a top plan view of the box mounted as shown in Fig. 9;

Fig. 11 is a top plan view to reduced scale of a box having a closure flap with tongue portions in the adhesive area;

Fig. 12 is a partial vertical section of the dash or similar surface of an automobile interior showing the manner of using the special supporting construction of Fig. 11;

Fig. 13 is a vertical section through a convex supporting surface of an automobile part on which is mounted a modified form of the box of Fig. 1 having adjustable supporting means at one end;

Fig. 14 is a plan view to reduced scale of a one-piece box blank that may be used in forming the box of Figs. 1 and 2;

Fig. 15 is a side perspective view of a partially open box having a modified form of inward projection for retaining a beverage cup or the like; Fig. 16 is a vertical section taken longitudinally of the box on line 16—16 of Fig. 15;

Fig. 17 is a partial horizontal section of the box of Fig. 15 taken on line 17—17; and

Fig. 18 is a fragmentary cross sectional view of the 5 same box taken on line 18—18 of Fig. 15.

The embodiment of the invention illustrated in Figs. 1 to 4 comprises a generally rectangular box 20 of relatively light and flexible paper material or the equivalent. The rectangular box 20, which for the present purpose is 10 elongated and relatively shallow has a bottom 22, a front 24, a back 26 and opposite sides or ends 28, 28. An integral closure flap 30 forms a continuation of the top edge of the back wall 26 and is of sufficient width to provide, in addition to complete closure, a free, foldable margin portion 32 adapted to be folded against the upper marginal portion of the front wall 24 when the box is closed as shown in Fig. 1.

A substantial, attachable supporting area on the outer face of the closure flap 30 is defined by outwardly ex- 20 posed, pressure sensitive adhesive 34 extending the length of the closure flap intermediate the width thereof, and being of substantial transverse width. The pressure sensitive adhesive is preferably of the type known commercially as "Scotch" brand manufactured by Minnesota 25 Mining & Mfg. Co., and applied to cellophane tape, masking tape and other strip and sheet material. adhesive provides a strong bond per unit of area and at the same time may be attached and detached without leaving a mark where the surface is smooth and polished 30 like that of the plastic or otherwise highly finished window sill of an automobile or the finished metal of the dashboard. In the instance of Fig. 1 the wide band or elongated sheet of material bearing the pressure sensitive adhesive 34 is mounted on the outer face of the 35 closure flap 30 by permanent adhesive bonding of preferably the inner edge and end marginal portions 35 of its inner surface to the adjacent outer face of said flap.

While the entire outer face of the closure flap 30 could be covered or defined by the pressure sensitive adhesive 40 material, it is definitely preferred to omit the adhesive material from the free foldable margin portion 32, and also from the inner one-third area of the closure flap adjacent its connection with the top edge of the back wall 26. When the foldable marginal portion 32 is inside 45 the front wall of the box as shown in Fig. 1 use of adhesive material on the portion 32 would prevent ready opening of the box. Further, it would be impractical to utilize an adhesive area on this foldable margin portion 32 when said portion is inserted between the window 50 glass and the unexposed portion of an automobile window sill construction S as shown in Fig. 2. The adhesive-free portion 32 affords a convenient tab for use in mounting the box 20 in place. It would also be undesirable to have the pressure sensitive adhesive material 55 adjacent the back wall connection of the closure flap 30 because in some instances this area might be adjacent the upholstered part of the interior of the door and produce disfigurement.

The conformability and ready backward folding or 60 rolling of the closure flap 30 may be insured by a plurality of closely spaced rows of continuous scoring 36 extending the length and at least the adhering width of said flap on the inner face thereof, as clearly illustrated in Fig. 2. A readily detachable masking strip 38 of 65 glassine or other suitable material is used over the adhesive area 34.

Particular attention is directed to the manner in which the closure portion 30 with the pressure sensitive adhesive 34 disposed a substantial distance outwardly of its hinge connection firmly supports the box 20 most effectively above the center of gravity and behind or away from the plane of the back wall 26 of the main body portion. Adhesive contact with the upholstery of the door and possible marring is also presented. When the

flap 30 is thus bent over a sill or curved over a moulding

an efficient snubbing action is obtained.

A pair of integral gussets 40, 40 one at each end of the box 20 give highly desirable strength and stiffness to the box when in use. The gussets 40 are adapted to infold readily because of an infolded line 42 extending from the top edge of the back wall 26 at a forward angle thereto as indicated in Fig. 2. The gussets 40 are generally triangular in shape and extend along each end edge of the box in a forwardly sloping manner, having a maximum height where they join the adjacent lower edge portion of the unscored part of the closure flap 30, and terminating in a rounded corner at the top edge of the front box wall 24. It will be understood that the gussets 40 add material support to the somewhat cantilever load when the box is full and thus function somewhat as a tie rod. By reason of their rearward height, the gussets 40 help also to maintain the back of the box as a vertical wall continuation of the back wall 26. The rearward portions of the gussets 40 serve also to prevent overtipping of a beverage cup disposed in the adjacent corner, and yet do not interfere with free access in a lateral direction at the front portion of the

The function of the box 20 in providing an efficient serving and supporting device for a luncheon comprising a beverage and a sandwich is greatly enhanced by the formation of an approximately V-notch 44 in the upper edge of the front wall 24 of the box. The notch 44 is located adjacent one end of the box and extends downward for approximately one-half the height of the front wall 24. A slit 46 of similar depth extending downward from the same upper edge at an intermediate point along the length of the box permits an infolding to horizontal position indicated in Fig. 2 and thus provides a cup retainer formation 47 at little or no extra expense of manufacture.

By partial scoring or perforating another vertical slit 48 may be formed adjacent the other end of the box and of the same depth as the slit 46, so that when a further horizontal infolding of the front wall is made as indicated in dotted lines in Fig. 1, there is provided a shelf or sandwich support 49 for resting the sandwich during eating.

In Figs. 5 and 6 an only slightly modified box 20a is shown in its closed and operative positions respectively. Fig. 5 shows a masking strip 38 being removed from a modified adhesive area 50 in relatively the same position as previously described on the outer face of the closure flap 30 adjacent the foldable margin portion 32 (Fig. 6). The details of the adhesive area 50 are shown most clearly in the partially sectioned view of Fig. 7. A thin, highly flexible band 52 of fabric material or the equivalent has a plurality of double-faced, pressure sensitive adhesive strips 54 mounted in spaced relation transversely of the closure flap 30 by means of the adhesive bonding between the underface of said strips and the contacted face of the band 52. Short strips 55 of double-faced adhesive material are similarly secured to the opposite end portions of the band 52 a short distance from the respective edges as shown in Fig. 5. The fabric band carrying the spaced adhesive strips 54 and 55 has its marginal edge portions secured to the adjacent face of the closure flap 30 by any suitable permanent adhesive and similarly to the securing of the adhesive area in the embodiment of Fig. 1.

It is to be particularly observed that the adhesive area 50 provides widely spaced strips 54 having exposed faces of pressure sensitive adhesive and carried by the portion of the fabric band 52 that is entirely loose and free of the adjacent surface of the closure flap 30.

fectively above the center of gravity and behind or away from the plane of the back wall 26 of the main body portion. Adhesive contact with the upholstery of the door and possible marring is also prevented. When the 75 flap 30 in the manner indicated by Fig. 8. While this

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modification offers some economy of adhesive material, it is subject to the objection that it must be applied precisely in liquid or spray form over the prescribed area inwardly of the foldable margin 32 of said closure flap. The same masking strip 38 of glassine or other readily separable material will be used in this embodiment. In general it has been found that such direct application of pressure sensitive adhesive to the closure flap 30 introduces manufacturing problems that outweigh the economy

in the use of a simpler form of adhesive.

Figs. 9 and 10 clearly illustrate the box 20a in its substantially self-suspending mounting for use on a window sill S of an automobile door of conventional construction. The scored portion of the closure flap 30 is conformed over the sill edge and secured thereto by the adhesive area means 50 described with relation to Figs. 5 and 7. Some additional support and anchoring is obtained by insertion of the foldable margin 32 between the back of the sill S and the adjacent surface of the window glass G as shown in Fig. 9. A firm and secure support is 20thus provided. The unusual advantage offered by this embodiment is the resistance to detachment of the adhesive connection from the sill S when the box is used while the car is in motion and appreciable vibration or bumping is encouraged. The separation of the adhesive $_{25}$ strips 54 from the closure flap 30, their wide spacing, and the extreme flexibility of the highly flexible fabric-like band 52 minimize very effectively the progressive action that might otherwise be obtained with vibration and result in a partial and possibly eventual separation of the adhesive connection between the box 20a and the door sill S.

The operative relations of the box 20a to the door having sill S and the availability of the inside of the box to the user sitting within the automobile are well il-

lustrated in Figs. 9 and 10.

Figs. 11 and 12 illustrate a further important modification of the principles of this invention. In this embodiment a box 20b similar in all other respects to box 20a has a closure flap 30b including a free, foldable margin portion 32b identical with the corresponding parts of box 20 and box 20a. A coated on adhesive area 58 corresponding in character and extent to that of the modification of Fig. 8 is slit or scored transversely and longitudinally through the adhesive area and the underlying closure flap material to provide adjacent each end portion a plurality of relatively long and narrow tongues or flaps 60, and a relatively wide and short central tongue or flap 62. As indicated these tongues and flap are integrally hinged at their inner ends, namely, adjacent the connection of the closure flap 30b with the box, so that they may be used in the manner shown in Fig. 12. Where as is often the case an automobile dash D is formed with indentations and other variations in curvature, there may be some difficulty in obtaining entirely adequate supporting area connection between the outer face of the closure flap 30b and the surface of the dash D at the place where it is most convenient to mount the disposable box. In this instance the tongues 60 and flaps 62 may be manipulated selectively to conform to and make face-to-face engagement with the dash area adjacent thereto. Fig. 12 $\,60$ shows in section the manner in which the flap 62 has been used for this purpose. This tongue and flap construction also offers at least partially the advantage of independence of areas of the adhesive 58 in a way that tends to prevent progressive separation under conditions 65 of vibration. The food receptacle or support 20b is thus firmly suspended by one or more tongues 60 and/or flap 62 of the upwardly projecting flap 30b. A masking strip 38 will be used to cover the adhesive area 58 prior to serving.

The modified embodiment of the invention shown in Fig. 13 provides a useful adjunct where the rear wall of the box is spaced a substantial distance from the mounting structure when in use. The box 20c cor-

been described with reference to Figs. 5 to 7. This box 20c includes a box end wall 28c, a box closure flap 30c, and a foldable margin portion 32c on said flap. The adhesive area and pressure sensitive adhesive means 50cwhich are only indicated in section are identical with that of Fig. 7, which has been described in detail and need not be referred to further. The several other specific embodiments of the adhesive means could also be substituted in box 20c where desirable. An additional element in the form of an elongated slidable member 64 of thin wood or suitably stiffened cardboard extends from within the box outwardly of the back wall 26c thereof through a conforming slot (not shown). The lower edge of the slidable member 64 rests on the inner surface of the box bottom 22c. The slidable member 64 is provided at its inner end with an upstanding tab portion or finger piece 66, the upper corner of which may be selectively engageable or insertable in one of a plurality of flaps provided by parallel angular slits 68 in wall 28c as clearly shown. In this manner the outer end portion of the slidable member 64 is adjusted to engage an opposed but spaced supporting surface, for example, a

the box in spaced relation with requisite firmness. Fig. 14 shows in flat form an integral box blank 70 having the scoring and indentations previously described and adapted when assembled to produce the box 20a shown in Figs. 5 and 6, and with appropriate modifications to satisfy the several other embodiments of this box. This box blank, 70, has several of the more significant parts of the completed box identified by corre-

curved dash D, and the member thus serves to support

sponding reference numerals.

It is of course to be understood that the box can be fabricated and formed in any other suitable manner

known to the prior art and in common usage.

In the modification of Figs. 15 to 18 a box 20d of generally rectangular configuration and having a closure flap 30d corresponding generally to that of Figs. 1 and 2 is characterized by a more effective cup retainer formation 47d. Instead of removing the material of the end notch as was done in Figs. 1 and 2, only an angular end cut 44d is made, and a depending flap 43d is folded downwardly as shown and along a line forming the inward apex of an approximately right angle triangle as seen in Fig. 17. A slot 45d is formed in the bottom 22d of the box and extends transversely thereof for a short distance beneath the retainer formation 47d when the latter is in its horizontal position of use. In order to maintain the cup retaining formation 47d securely in position defining a corner compartment of the box for loose engagement with a cup resting therein, a foldable tab 49d on the lower end of the flap 43d is inserted in the slot 45d and bent under the bottom of the box 22d as clearly shown in Figs. 16 and 18. A definite interlocking of the base of the tab portion 49d with the slot 45d can be obtained by a slight undercutting of the former as shown in Fig. 18. This feature of a sturdy cup retaining formation is attained without additional box material and can be locked in engagement with the bottom of the box with a minimum of time and effort at the time its use is desired.

It is believed that the manner in which the objects of this invention have been attained and the numerous advantages it possesses will be fully understood from the preceding explanation of construction and operation.

While a preferred embodiment of this invention and several advantageous modifications thereof have been described in detail and disclosed fully, it will be understood that various changes can be made in details of construction, arrangement of parts, and utilization of materials without departing from the broad principles of this 70 invention and the scope of the appended claims.

Having thus described my invention, what I claim as novel and desire to secure by Letters Patent of the United

1. A self-suspending, disposable service device comresponds in all essential details to the box 20a which has 75 prising an elongated, rectangular paper box open at the

top side and having an integrally joined closure flap extending along one longitudinal edge of the open top side, said closure flap being of a width to provide a free marginal portion adapted to be folded against the upper marginal portion of the other longitudinal edge when the box is closed, and a substantial area of pressure sensitive adhesive extending lengthwise of the outer face of the closure flap inwardly of the free foldable marginal portion, the inner face of the closure flap having a plurality of rows of scoring extending the length thereof throughout the area including the adhesive.

2. A self-suspending, disposable service device comprising a rectangular paper-like box open at the top side and having an integrally joined closure flap extending along one longitudinal edge of the open top side, said closure flap being of a width to provide a free marginal portion adapted to be folded against the upper marginal portion of the other longitudinal edge when the box is closed, a substantial area of pressure sensitive adhesive extending lengthwise of the outer face of the closure flap inwardly of the free foldable marginal portion, the inner face of the closure flap having a plurality of rows of scoring extending the length thereof throughout the area including the adhesive, and a detachable masking strip secured over the pressure sensitive adhesive.

3. A self-suspending, disposable service device comprising a rectangular paper box open at the top side and having an integrally joined closure flap extending along one longitudinal edge of the open top side, said closure flap being slit to provide a plurality of longitudinally spaced transverse tongue flaps, and pressure sensitive adhesive carried by and exposed on the normally outer faces

of said tongue flaps.

4. A self-suspending, disposable service device comprising a rectangular paper-like box having a bottom, front and back walls, opposed sidewalls, and a closure flap forming a continuation of the top edge of the back wall, said back wall being formed with a slit adjacent one bottom corner, and the adjacent inner end wall being formed to provide a series of notches spaced in a transverse direction, a stiff, elongated slide member extendible outwardly through said slit and having its inner end engageable selectively with said notches for retention in a selected position, and a substantial area on the outer face of the closure flap defined by outwardly exposed pressure sensitive adhesive extending the length of the closure flap intermediate the width thereof and being of substantial transverse width, the inner face of the closure flap having a plurality of rows of scoring extending the length thereof throughout the area defined by the adhesive.

5. A self-suspending, disposable service device comprising an elongated, rectangular paper box having a bottom, front and back walls, opposed sidewalls, and a closure flap forming a continuation of the top edge of the back wall and being of a width to provide a free marginal portion adapted to be folded against the upper marginal portion of the front wall when the box is closed, a substantial area on the outer face of the closure flap defined by outwardly exposed pressure sensitive adhesive extending the length of the closure flap intermediate the width thereof and being of substantial transverse width, the inner face of the closure flap having a plurality of rows of scoring extending the length thereof throughout the area defined by the adhesive, said back wall being formed with a slit adjacent one bottom corner, and the adjacent inner end wall being formed to provide a series of notches spaced in a transverse direction, a stiff, elongated slide member extendible outwardly through said slit and having its inner end selectively engageable with said notches for retention in a selected position, and a readily detachable masking strip on the exposed pressure sensitive adhesive.

6. A self-suspending, disposable service device comprising an elongated rectangular box of paper or the like

and a closure flap forming a continuation of the top edge of the back wall and being of a width to provide a free marginal portion adapted to be folded against the upper marginal portion of the front wall when the box is closed, and an attachable suspending area of pressure sensitive adhesive covering an area comprising approximately the outer two-thirds of the outer face of the closure flap exclusive of the free foldable marginal portion and extending the length of the closure flap, the inner face of the closure flap having a plurality of rows of scoring extending the length thereof throughout the area defined by the adhesive.

7. A self-suspending, disposable service device comprising an elongated, rectangular paper box open at the top side and having an integrally joined closure flap extending along one longitudinal edge of the open top side, said closure flap being of a width to provide a free marginal portion adapted to be folded against the upper marginal portion of the other longitudinal edge when the box is closed, and a substantial area of pressure sensitive adhesive extending lengthwise and over at least the outer two-thirds area of the outer face of the closure flap inwardly of the free foldable marginal portion, the inner face of the closure flap having a plurality of rows of scoring extending the length thereof throughout the area including the adhesive, and said closure flap being slit to provide a plurality of longitudinally spaced transverse tongue flaps hinged at their ends for selectively engaging a supporting surface.

8. A self-suspending, disposable service device comprising an elongated rectangular box of paper or the like having a bottom, front and back walls, opposed sidewalls, and a closure flap forming a continuation of the top edge of the back wall and being of a width to provide a free marginal portion adapted to be folded against the upper marginal portion of the front wall when the box is closed, and a substantial attachable supporting area on the outer face of the closure flap extending the length of the closure flap intermediate the width thereof, being of substantial transverse width and comprising a piece of flexible fabric secured by its two end and inner peripheral margin portions to the closure flap and having a plurality of longitudinally extending transversely spaced strips of pressure sensitive adhesive tape mounted thereon, the inner face of the closure flap having a plurality of rows of scoring extending the length thereof throughout the area defined by the adhesive.

9. A self-suspending, disposable service device comprising an elongated rectangular box of paper or the like having a bottom, front and back walls, the front wall of the box being formed adjacent one end with an approximately V notch in its upper edge extending downward for approximately one-half the height of said wall, and a slit of similar depth extending from the upper edge at an inter-55 mediate point to provide a wall portion adapted to be infolded to provide a cup retaining formation, opposed sidewalls and a closure flap forming a continuation of the top edge of the back wall and being of a width to provide a free marginal portion adapted to be folded against the upper marginal portion of the front wall when the box is closed, and a substantial attachable supporting area on the outer face of the closure flap and comprising a piece of flexible fabric of substantial transverse width secured by its two end and inner peripheral margin portions to the closure flap and having a plurality of longitudinally extending transversely spaced strips of pressure sensitive adhesive tape mounted thereon.

10. The combination of claim 9 in which the front wall has another slit of similar depth extending from the upper edge adjacent the other end of the box to provide a wall portion adapted to be infolded to form a supporting shelf for a sandwich or the like.

11. The combination of claim 9 in which the V notch having a bottom, front and back walls, opposed sidewalls, 75 is formed by the infolding of a part of the front wall, said

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|--|---|-----------|-----------------------------|
| infolded part extending downward and interlocking with | | 2,168,240 | Roberts Aug. 1, 1939 |
| the bottom of the box. | | 2,287,581 | Walker June 23, 1942 |
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