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[56]

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[54] **TISSUE BOX WITH ADJUSTABLE AUXILIARY BOTTOM**

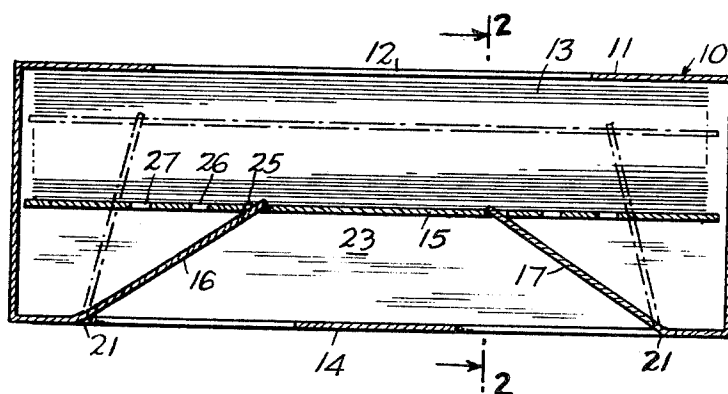
2 Claims, 6 Drawing Figs.

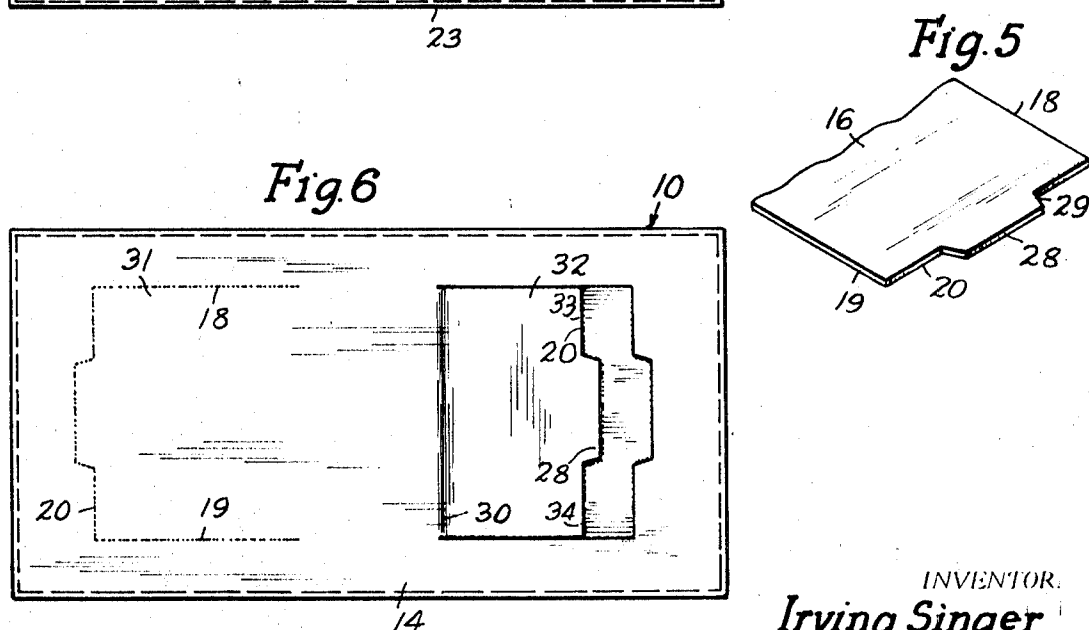
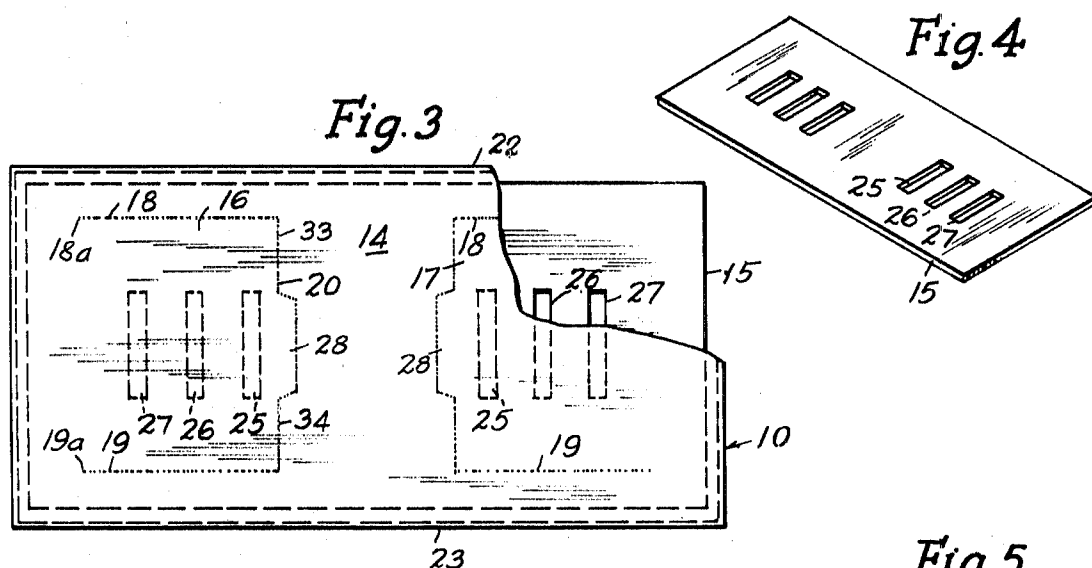
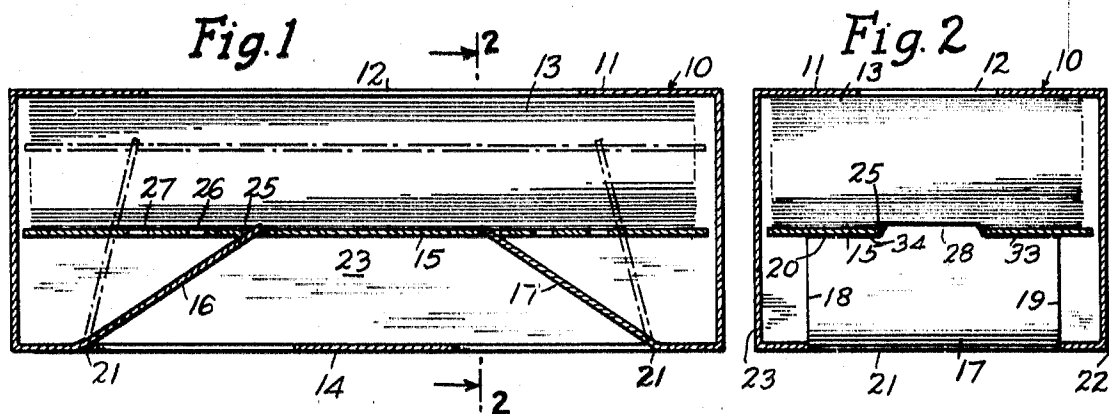
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ABSTRACT: Outlines of two potential braces are punctured on three sides of a rectangle through the main bottom of a paper box. When the stack of tissues in the box is lowered by depletion, the braces are severed on the outlines and swung into the box. A tongue on the freed and raised end of each brace slips into the nearest of a row of parallel transverse slots in a loose auxiliary bottom of the stack. The braces raise and support the auxiliary bottom and the depleted stack at two longitudinally spaced-apart lines so that the top of the stack becomes easily accessible through an opening in the fixed box top. On further progressive depletion of the stack, the braces are again raised in progressive stages to insert the tongues into other slots.





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TISSUE BOX WITH ADJUSTABLE AUXILIARY BOTTOM

This invention relates to paper or the like boxes for holding a stack of light weight articles such as facial tissues, and particularly to the means for raising the top of a depleted stack when it becomes difficult to reach the top article through the opening in the fixed box top.

Attempts have been made to provide a box wherein a depleted stack of articles may be raised, but such attempts have not met with any substantial commercial acceptance as yet. Said attempts have proven to be impractical, being too expensive for example for disposable boxes and offering insufficient support for the stack thereby permitting it to become distorted; or requiring too many parts or complex blanks necessitating excessive folding, assembling or shaping operations; or being wasteful of interior box space.

The present invention therefore aims to overcome the disadvantages of prior boxes by providing a box in which present conventional box blanks and boxes require little change, such change being the provision of punctured outlines in the main bottom of the box for potential braces and the addition of a smooth and relatively stiff auxiliary bottom arranged loosely at the bottom of the stack of articles such as tissues inserted into the box with the stack as a unit or otherwise.

The invention is further directed to the provision of a box which is inexpensive to make; which offers effective support at all times and in all raised positions of the bottom of the stack and hence which keeps the top tissue undistorted in shape and within easy reach; which requires merely punctured outlines in the box bottom in the manner now practiced for access openings in conventional fixed box tops; in which the top tissue of a stack is accessible; which has an inexpensive auxiliary bottom; which utilizes the entire interior space of the box for the stack as in conventional boxes and which permits progressive adjustment of the position of the top of the stack as the stack becomes depleted.

The above and other objects of the invention will become clear as the description progresses and from the drawings, in which

FIG. 1 is a simplified vertical sectional view of a conventional box showing the stack supporting and adjusting means and also showing said means in dash-dot lines in a raised position.

FIG. 2 is a vertical sectional view taken on the line 2—2 of FIG. 1 but omitting the high position of the parts.

FIG. 3 is a bottom plan view of FIG. 1 with a corner of the box broken off to expose the slotted auxiliary bottom.

FIG. 4 is a perspective view of said bottom.

FIG. 5 is a fragmentary perspective view of the free end portion of a severed brace showing the projecting tongue thereon.

FIG. 6 is a bottom plan view of a modified form of the punctures outlining the braces and showing one of the braces severed along its outlines and lifted.

In the practical embodiment of the invention as applied to an otherwise conventional tissue box for holding a stack of facial tissues, the box 10 is provided as usual, in its top 11 with an opening-forming portion outlined by suitable punctures, cuts, score lines or the weakening lines customarily used for severing purposes. Said portion is easily severable from the remainder of the top to expose an opening 12 through which is accessible the top article of the stack 13 of such articles, which are referred to herein as "tissues." At the bottom of the stack and initially resting on the main bottom 14 of the box is the auxiliary bottom 15. Said bottom 15 has a preferably smooth under surface and may be made of substantially the same paper material as that of the rest of the box, being relatively stiff as compared to the tissues.

It will be understood that said auxiliary bottom may form a part of the stack to be inserted with the stack as a unit into the box prior to the sealing of the box or it may be otherwise inserted as may be found convenient or desirable. Said bottom 15 fits loosely in the box in the same manner as the stack and should be of substantially the shape, length and width as that

of the tissues to permit free upward movement thereof in the box on upward pressure thereon. As said stack becomes depleted by the removal of top tissues, succeeding tissues are more difficult to reach through the top opening 12 made in the fixed box top.

Means are therefore provided for raising the auxiliary bottom 15 and the depleted stack as a unit to make the top tissue easily accessible and to maintain the bottom 15 in parallel relation to the main bottom 14. Said means takes the form of a pair of similar braces 16, 17 independent of each other and each severable from the material of the main bottom along the weakening lines 18, 19, 20 determining the two sides and a free end of the brace, said lines being of any of the usual types customarily used for the purpose, such as short straight punctures. The brace remains integrally connected to the remainder of the main bottom and swingable along the other or opposite end which extends between the extremities 18a, 19a of the respective sides of the brace and constitutes a hinge line 21 about which the partly severed brace may be swung.

While the brace may take various shapes, that shown is generally rectangular, the sides 18 and 19 being parallel to each other and in inward spaced relation to the front 22 and back 23 of the box, and the end 20 being substantially perpendicular to the sides. The brace is made as wide as is practicable to provide maximum support of the raised auxiliary bottom by the engagement therewith across most of the width of said bottom.

To assure the operative engagement of the braces with said bottom and to prevent undesired relative movement therebetween, said bottom 15 is provided with a multiplicity of similar longitudinally spaced apart transverse slots 25, 26, 27 arranged in a row on each side of the center line of said bottom. Cooperating with and adapted to enter a selected slot and to penetrate the bottom 15 is a tongue 28 projecting from the remainder of the ultimately free end 20 of each brace. Said tongue may be tapered as shown at 29, FIG. 5 or otherwise shaped to enter easily a selected slot in the auxiliary bottom. The remainder of the brace end 20 is straight and perpendicular to the sides 18, 19 and constitutes shoulders 33, 34, one on each side of the tongue, for engaging the smooth under surface of the auxiliary bottom. Said bottom and the stack thereabove rest on the shoulders.

In the form shown in FIGS. 1 and 3, the tongues of the braces are adjacent to and face each other, while the hinge lines 21 are remote from each other and adjacent an end surface of the box. When the braces are severed and swung about their hinge lines, there remain sufficient marginal and central areas intact on the main bottom to maintain the box upright against collapse.

In the form of the invention shown in FIG. 6, the hinge lines 30 of the respective braces 31 and 32 are adjacent each other and the tongues face away from each other and are adjacent the end surfaces of the box. In all forms of the invention, the braces are partly severed from the main bottom along their punctured outlines and swung into the interior of the box. If the box is held in its normal position with the bottom down, the braces are pushed upwardly. If the box is inverted, the stack drops down against the fixed box top and the braces are also pushed downwardly to sever them. The adjustment of the stack top is made when enough articles have been removed therefrom to make the space between the box top 11 and the top of the depleted stack so great that reaching into the box to grasp the top tissue becomes difficult. When the relatively flexible and resilient brace is swung about its hinge line, its tongue engages and slips along the under surface of the auxiliary bottom toward the appropriate slot in its path. When the tongue reaches the proper slot, it enters said slot and penetrates the auxiliary bottom, especially if the severing force on the brace is sufficiently diminished or released and the inherent resilience of the brace is permitted to act to straighten the brace. The weight of the stack and the slot-tongue connection of the brace and auxiliary bottom cooperate to removably lock the brace in place against movement in any

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direction until deliberate further adjustment is made, as when the stack becomes again inconveniently depleted. The adjustment may then be repeated, pressure in the proper direction on the brace removing the tongues from their slots, the brace bending somewhat if necessary, the tongues again slipping along the auxiliary bottom until reaching and entering the appropriate slot. Normally, when operative, the braces assume a position angularly related to the auxiliary bottom.

It will now be seen that the stack is adequately supported along two spaced-apart lines determining the plane of the auxiliary bottom; that conventional boxes need only an auxiliary slotted bottom and puncture outlines in their main bottom to attain the advantages mentioned; that no space in the interior of the box is wasted and that the various objects of the invention have been adequately attained in a simple and inexpensive manner.

While certain specific forms of the invention have herein been shown and described, various obvious changes may be made therein without departing from the spirit of the invention defined in the appended claims.

I claim:

1. In a conventional box for holding a stack of facial tissues, the box having imperforate walls except for the puncture-outlines hereafter mentioned, to exclude foreign material from the interior thereof, the walls including a fixed top and a fixed bottom each of a single thickness of material, the box having a stack of tissues therein, a loose progressively adjustable auxiliary bottom normally resting on and of substantially the size of said box bottom and having two rows each comprising at least three transversely arranged slots therein, the rows of slots being on opposite sides respectively of the transverse middle area of the auxiliary bottom, the trailing slots of each row being in longitudinal spaced relation to the nearer side of the box, said box bottom having two planar flexible and resilient

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potential braces puncture-outlined therein for partial severance therefrom and for swinging movement into the interior of the box and into locking engagement successively with the slots in the auxiliary bottom when the stack becomes depleted, the braces being arranged in longitudinal spaced relation to each other with an unpunctured area of the box bottom therebetween and being of lesser width than that of said box bottom, one end of each of said braces being integrally hinged to said box bottom along a straight imperforate transverse hinge line extending throughout the entire width of the brace, the sides of the brace as puncture-outlined being straight and parallel to each other and to the front and back of the box and perpendicular to said hinge line, the other end of the brace comprising a central tongue projecting toward said unpunctured area and a straight end edge on each side of the tongue constituting a shoulder adapted to engage the under surface of the auxiliary bottom when the tongue of the brace enters a selected slot.

2. The box of claim 1, the braces being sufficiently flexible and resilient first to flex on pressed contact with the under surface of said auxiliary bottom and then to straighten and to release the respective tongues for entrance into the pair of leading slots of the respective rows when the braces are partially severed from the box bottom and swung about the respective hinge lines thereof on depletion of the stack, the braces flexing when again pressed and swung to remove the tongues from the slots receiving said tongues and until the tongues reach the next succeeding slots, the braces straightening to release the tongues for entrance into said succeeding slots, the top of the box having a puncture outline therein defining material removable from the top within the outline to form an access opening in said top.

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