

Oct. 10, 1939.

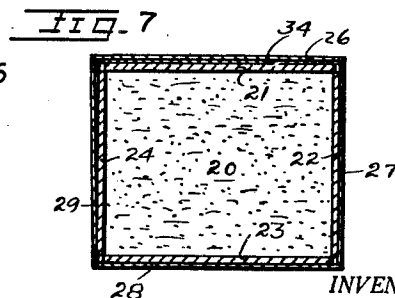
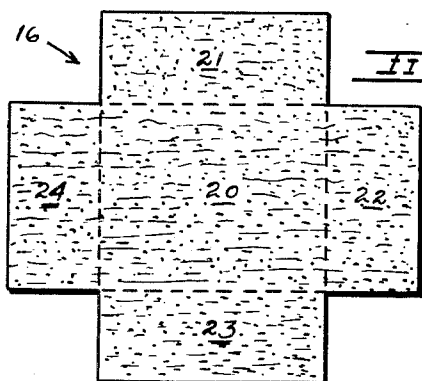
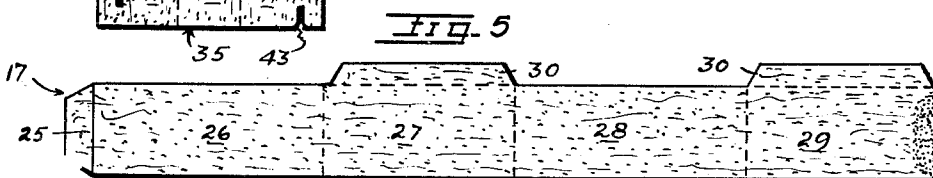
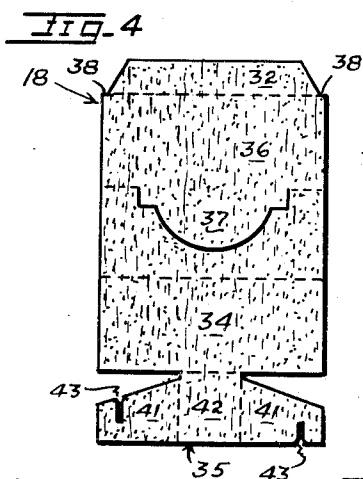
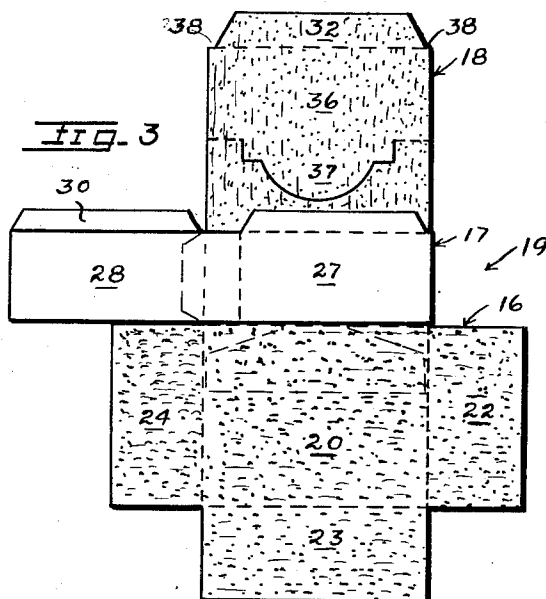
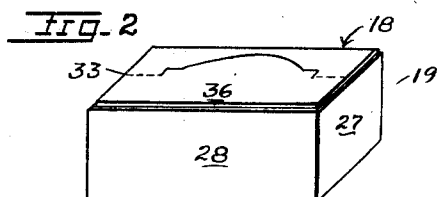
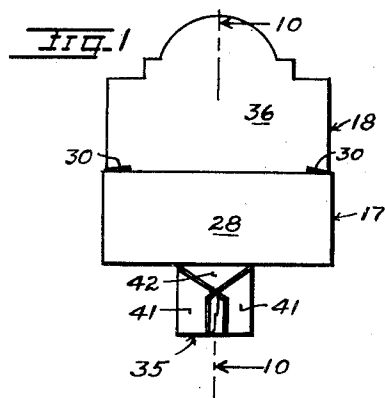
R. L. PALMER

2,175,731

COLLAPSIBLE PAPER BOX

Filed Nov. 23, 1935

2 Sheets-Sheet 1



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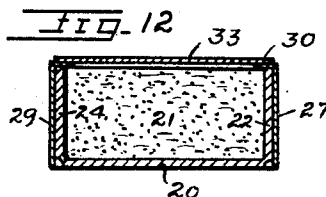
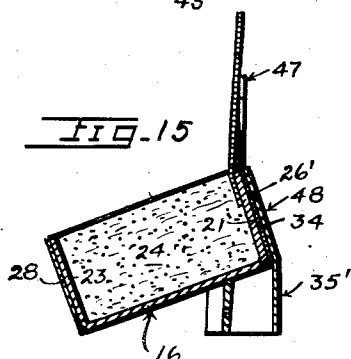
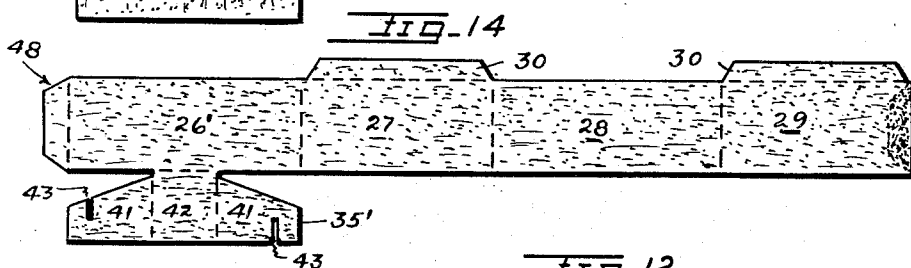
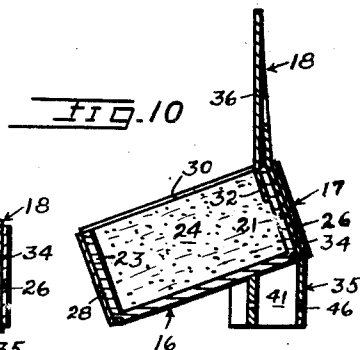
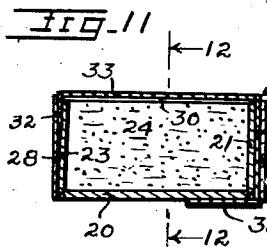
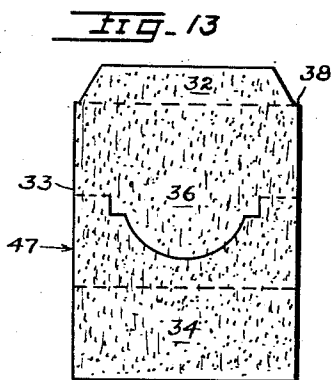
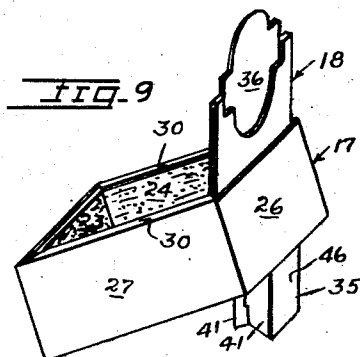
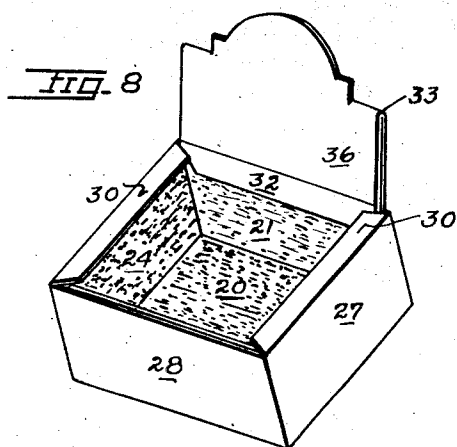
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COLLAPSIBLE PAPER BOX

Filed Nov. 23, 1935

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,175,731

COLLAPSIBLE PAPER BOX

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Application November 23, 1935, Serial No. 51,244

3 Claims. (Cl. 206—44)

The invention relates to an easel display box which is collapsible.

An object of the invention is to provide a collapsible box structure having a structure which resists crushing, whereby a plurality of the filled boxes may be stacked upon each other without injury to their contents.

Another object is to provide an improved easel leg for boxes of the present type.

A further object is the provision of a box providing the designed characteristics through the use of a lessened weight and cost of box material.

Another object is to provide a collapsible box wherein the elements are fixedly secured together and wherein the collapsed box is in fully flattened condition.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth or be apparent in the following description of typical embodiments thereof, and in the following drawings, in which,

Figure 1 is a front face view of the set up box in display condition and position.

Figure 2 is a perspective view of the closed box.

Figure 3 is an inside face view of the box assembly in collapsed condition.

Figures 4 and 5 and 6 are inside face views of three elements which provide the box assembly.

Figure 7 is a sectional plan view through the set up box.

Figures 8 and 9 are perspective views of the set up box in display condition.

Figure 10 is a sectional view taken at 10—10 in Figure 1.

Figure 11 is a sectional view through a closed box and corresponding to Figure 10.

Figure 12 is a sectional view at 12—12 in Figure 11.

Figures 13 and 14 are inside face views of two elements used to provide a modification of the box.

Figure 15 is a section as in Figure 10 of a box structure utilizing the elements of Figures 13 and 14.

As particularly illustrated, the collapsible box of my invention is provided by a unitary assembly of three elements which are fixed together at mutually engaged portions thereof to provide the unitary box assembly 19. For descriptive convenience, the three elements of the box will be herein referred to as an inner or base element 16, a band element 17, and a top element 18, and it will be understood that said elements are arranged to be die-cut from cardboard or the like of appropriate thickness and finish.

As particularly shown in Figure 6, the blank for the element 16 is generally cross-shaped, having rectangular arm portions which are coterminous with a rectangular central portion. The blank is appropriately scored at the bases of the arm portions for the bending or folding of said portions into perpendicular relation with the central portion at the side thereof, and all of the arm portions are of equal length as measured from the fold lines at their bases. The central portion 20 of the element 16 is arranged to provide a bottom for the box, and the arm portions of the element provide a back wall 21, a side wall 22, a front wall 23 and a side wall 24. When the various walls are extended perpendicularly upwardly from the bottom 20 they are arranged to jointly define a receptacle space for the box.

The element 17 comprises a strip of relatively thin and flexible material having a terminal flap 25 for gluing to the other element end in overlapped relation thereto whereby the element then comprises a continuous band. This element is provided with suitable and mutually parallel scorings thereacross to define portions 26 and 27 and 28 and 29 which respectively correspond to the wall members 21 and 22 and 23 and 24 of the element 16. When the present box is set up, the closed band element 17 is arranged to receive the upright wall members 21 to 24 of the element 16 therein and opposite its corresponding portions 26 to 29 inclusive whereby the band element is operative to prevent a mutual spreading of the wall members, it being noted that the portions 26 to 29 of the band element thus provide outer wall members for the box. The inner wall members 21 to 24 of the element 16 have their side edges in general registration whereby the receptacle space is laterally defined by these members. Flap extensions 30 are provided at the top edges of the outer wall members 27 and 29.

The element 18 generally comprises a strip of material having the same width as the inner wall members 21 and 23 and is scored across its width to define an end flap 32, a cover portion 33, a portion 34 of substantially the same size as the back wall member 21, and an extension 35 which is arranged to provide an easel leg for and beneath the set up box.

Preferably, and as shown, the element 18 is engaged between the inner and outer back wall elements 21 and 26 respectively, with its portion 34 coinciding with said wall portions and fixed to and between the latter whereby the elements are held in fixed unitary association to provide the assembly 19. These engaged portions may be

glued or stapled together, or both; gluing is assumed in the present instance.

The cover 33 is of a size and shape to fully overlies the top of the box, it being noted that the side flaps 30 are arranged to be turned inwardly over the upper edges of the inner side wall members 22 and 24 before the cover is placed in operative position. The front flap 32 of the element 18 is slightly narrower than the remainder of the element and may be engaged between the front wall members 23 and 23 when the cover is in operative position; when the box is closed, the extension 35 is arranged to be in flat condition and to lie flat against the outer side of the bottom 20, as is shown in Figure 11.

The cover 33 is scored midway between its front and back boundaries for doubling upon itself when it is operatively disposed whereby a forward cover portion 36 may extend upwardly at the back of the box and display any advertising matter thereon in the manner of a sign while the side portions of the flap 32 are engaged behind the rear sides of the wall flaps 30. It will be noted that the advertising matter on the cover face portion 36 thus displayed for viewing from the front of the box would also be exposed at the top of the box when the box is closed. If desired, a tab 37 may be cut from the cover interiorly thereof and with its base at the fold line for the cover to provide a more or less decorative extension of the cover portion 36. As shown, the shoulders 38 provided at the base of the flap 32 are arranged to engage the tops of the side wall members to then dispose the doubled cover in a backwardly leaning relation to the body of the box whereby the sign portion 36 may be substantially vertical when the easel leg is operative to support the box in sloping display position.

If desired, the forward part of the element 18 may be removed at or beyond the fold line of the cover portion 33 when the box is opened for the display of its contents; in this manner, a display sign of a desired limited height may be provided at the rear of the set up box. In such a case, the inner surface of the retained cover part would have the advertising or display matter provided thereon whereby such matter would be visible only when the box is set up for the display of its contents.

It will now be noted that the extension 35 of the element 18 is reduced in width at its point of attachment to the portion 34 and is provided with lateral tabs 41 extending from a central portion 42, said extension being longitudinally scored to provide fold lines at the bases of the tabs 41 and being no wider than the remainder of the element whereby to effect the fullest economy in cutting the blank from sheet material. The tabs 41 are tapered and are provided with complementary and mutually parallel slots 43 adjacent their free ends whereby the tabs may be releasably interlocked in intersecting relation to provide an easel leg beneath the rear end portion of the bottom 20.

It will now be noted that the hollow easel leg provided in the described manner is independently form-retaining and is of triangular cross-section. When the present box is disposed on a supporting surface with the described leg in operative position, the base of the leg is arranged to include the lower front edge of the box in its plane, and the free upper edges of the leg may then engage against the under face of the bottom 20. Preferably, and as shown, the edges of the tabs 41 nearest the member 34 are oblique to the opposed edges of the member 34 whereby they solely pro-

vide the tapering of the tabs; in this manner, the portion 46 of the operative leg may be perpendicular to a supporting surface for the box, and a solely longitudinal and compressive stress is exerted against the leg by the weight of the box and its contents.

The material of the element 16 is preferably relatively stiff against bending under a lateral stress; this is accomplished in practice by using a blank of relatively thick cardboard for the purpose. On the other hand, the elements 17 and 18 are formed of relatively thin and flexible cardboard or paper, and the exposed surfaces of these elements may be finished as required for providing a finished exterior for the box; no special finish is needed for the surfaces of the element 16. This arrangement is understood to provide a set up box structure which may not be readily crushed transversely thereof, while minimizing the cost.

Preferably, and as indicated in the drawings, the grain of the relatively thick cardboard used to provide the element 16 runs across said element whereby it is arranged to up and down in the side wall members 22 and 24 in the set up box. The grain of the material in the elongated elements 17 and 18 preferably runs longitudinally therein, or across the score lines, whereby the members at the different box walls will most advantageously cooperate to provide the operative equivalent of laminated structures thereat. It is to be particularly noted that the specified arrangement provides for a maximum stiffness of the box against crushing of the side walls, which is most desirable.

In Figures 12 and 13, alternative blanks for a top element 47 and a band element 48 are respectively shown. In this instance, the top element 47 lacks an easel leg extension, and a corresponding extension 35' is shown as provided as an integral extension at the bottom of the back wall 26' of the element 40. The elements 47 and 48 are otherwise formed and applied in connection with the element 16 as are the elements 17 and 18 respectively, it being noted that the use of these elements in a box assembly is indicated in Figure 15.

Having the assembly of the elements 16 and 17 and 18, or 16 and 47 and 48, in collapsed and flattened condition as in Figure 3, the box may be set up for use by expanding the band element 17 to form a rectangle and swinging the element 16 toward the element 17 to dispose the wall members of the element 16 within the element 17. It will be noted that the aforesaid disposal of the inner wall members 22 to 24 within the band element 17 is facilitated by folding the side wall members 22 and 24 over the bottom 20 and the front wall member 23 back over the members 22 and 24. After the element 16 is in proper relation to the element 17, the members 23 and 22 and 24 may be swung to their operative upright positions of engagement within the band element. If the box is to be closed, the cover member 33 is swung down over the box space, the end flap 32 is inserted between the front wall members 23 and 28, and the extension 35, or 35', is disposed flat against the under side of the bottom 20. If the box is to be set up for the display of its contents, the cover 33 is doubled upon itself with the end flap 32 disposed rearwardly of the turned in side wall flaps 30. The tabs 41 of the leg extension 35, or 35', are interengaged to form the easel leg whereby the box is ready for supported disposal on a more or less horizontal supporting surface. A collapse of the set up box may be affected by taking the

preceeding steps in reverse order. It will be understood that the collapse of the present box into a flat condition minimizes the space required both in shipping and in storage.

From the foregoing description taken in connection with the accompanying drawings, the advantages of the construction and method of operation of the present box will be readily understood by those skilled in the art to which the invention appertains. While I have described the features and the application of the device in what I now consider to be preferred embodiments of my invention, I desire to have it understood that the showing is primarily illustrative, and that such changes may be made as fall within the scope of the following claims.

I claim:

1. In a collapsible paper box having coterminous bottom and upright walls for disposal in a common plane when the box is collapsed, an easel leg member secured to the box at the bottom edge of the rear box wall, said leg member being provided as an integral extension of a rear wall member and having lateral tab portions of tapered form folded forwardly from an intermediate extension portion and releasably interlocked in intersecting relation to provide a hollow leg of triangular cross-section for coaction with the lower front box edge to support the box in sloping relation to a supporting surface for the display of the box contents, said extension being no wider than the rear box wall when the aforesaid portions thereof are in mutually coplanar position and being then arranged to lie flat against the box bottom when the box is collapsed.

2. In a collapsible paper box, a one-piece inner element formed and folded to provide the box bottom and a series of rectangular upstanding inner wall members of like height cooperative with the bottom to laterally define the complete box receptacle, a continuous one-piece band ele-

ment encircling said wall members in the line thereof and scored and folded to provide corresponding outer wall members opposite all of the inner wall members, and a third one-piece element having coterminous portions respectively providing a cover for the box and a flap member engaged between the back members of the inner and band elements, said flap member and back members being fixed together and one of said members being provided with an integral extension having lateral tab portions of tapered form folded forwardly from an intermediate extension portion and releasably interlocked in intersecting relation to provide a hollow easel leg of triangular cross-section beneath the rear portion of the box for coaction with the lower front box edge to support the box in display position, said cover being intermediately scored for doubling upon itself to provide a display panel extending upwardly from the back wall of the box.

3. In a collapsible paper box, a one-piece element formed and folded to provide the box bottom and upstanding inner wall members cooperative with the bottom to completely define the box receptacle, a continuous one-piece band element structurally independent of the first element completely encircling said wall members in the line thereof to provide corresponding outer wall members fully opposite the inner wall members, and a third one-piece element having coterminous portions respectively providing a cover for the box and a flap member registering with the outer face of the back member of one of the inner and band elements as a third full back member of the box, one of said back members being provided with an integral extension arranged for forming into an easel leg beneath the box thereat, and said cover being intermediately scored for doubling upon itself to provide a display panel extending upwardly from the back wall of the box.

RUSSELL L. PALMER.