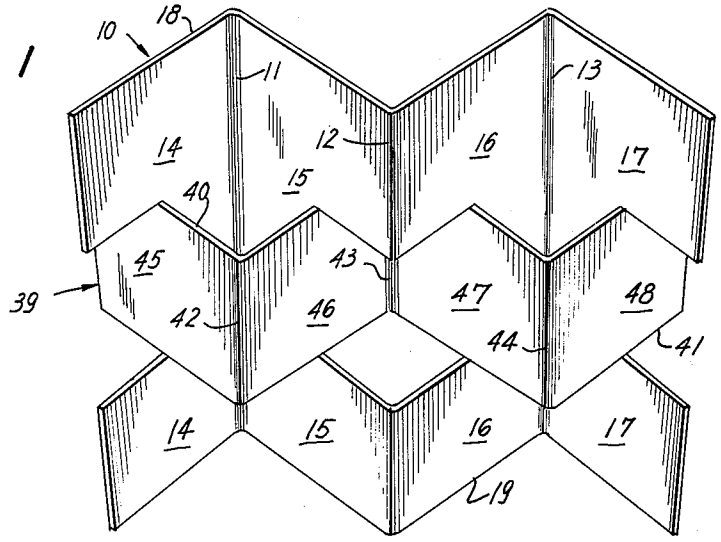
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COLLAPSIBLE CARDBOARD DISPLAY DEVICE

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FIG. 1



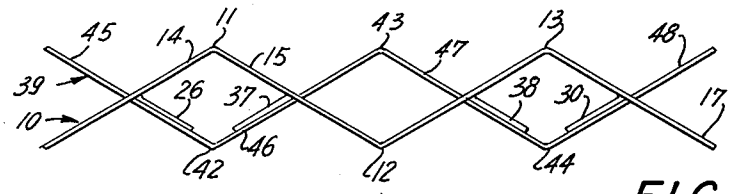
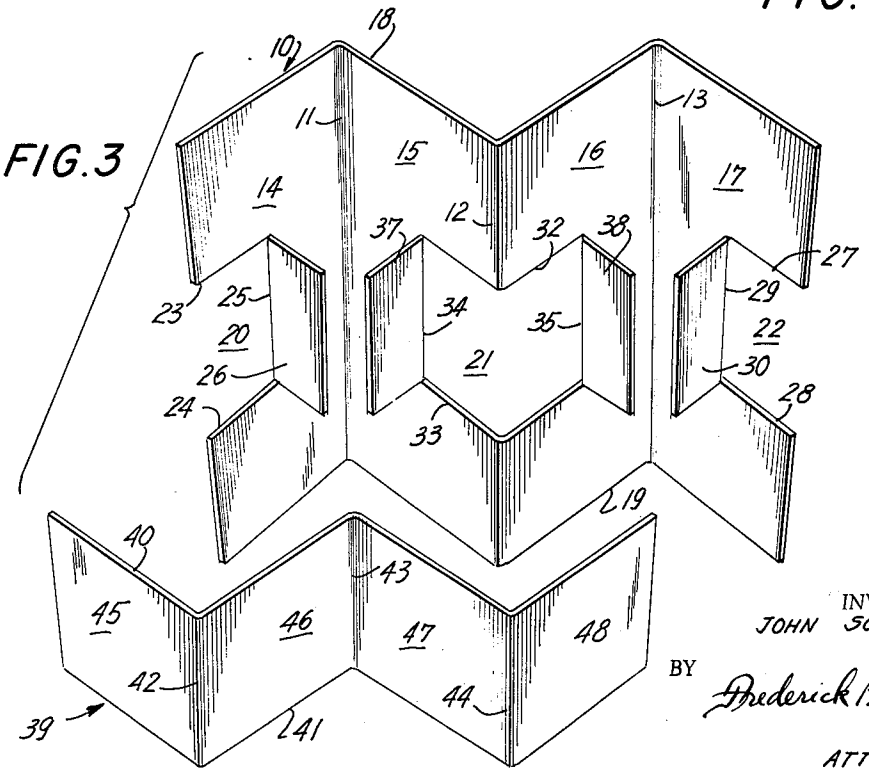




FIG. 2

FIG. 3




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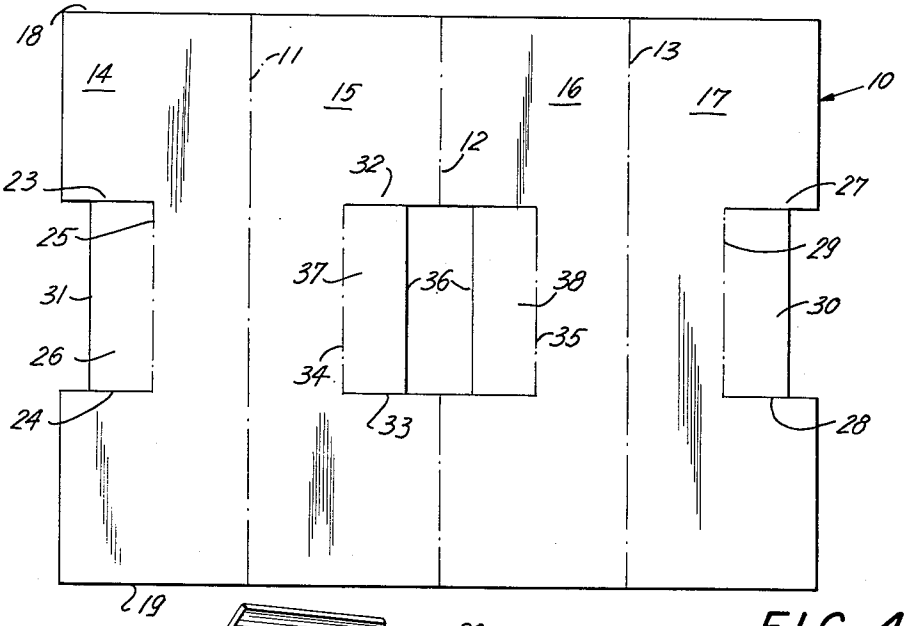



FIG. 4

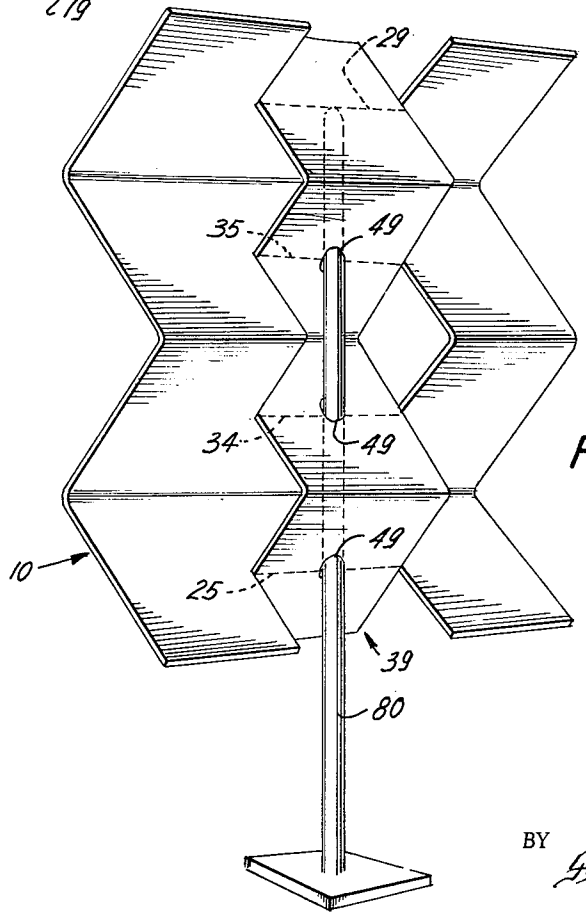



FIG. 5

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FIG. 6

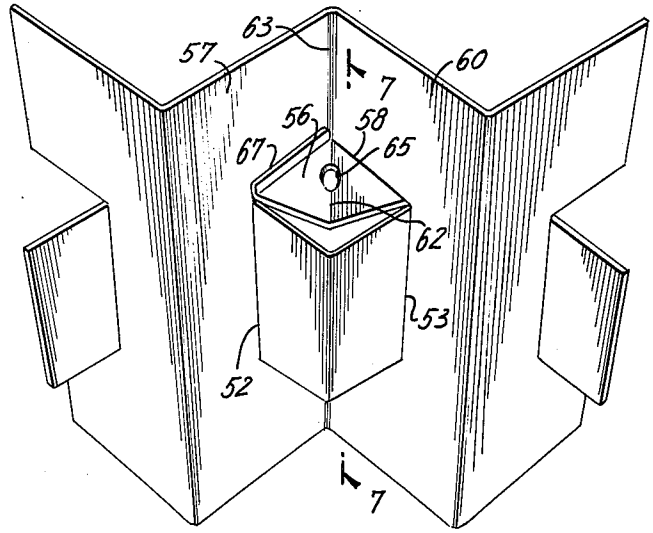



FIG. 8

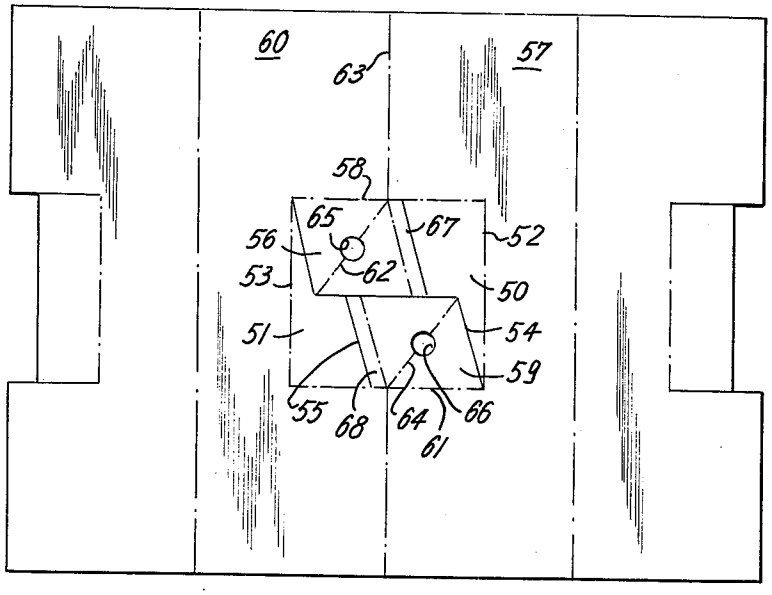
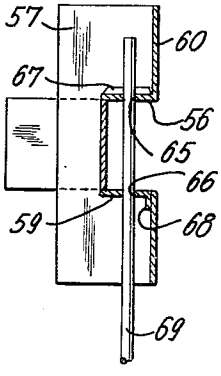



FIG. 7




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United States Patent Office

3,059,362

Patented Oct. 23, 1962



3,059,362

# COLLAPSIBLE CARDBOARD DISPLAY DEVICE

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Filed Sept. 18, 1961, Ser. No. 138,962
8 Claims. (Cl. 40—124.1)

This invention relates generally to display devices, and has particular reference to a collapsible device composed of cardboard or equivalent foldable sheet stock.

It is a general object of the invention to provide an attractive attention-arresting structure which is simple and inexpensive to manufacture, readily collapsible into compact condition for purposes of storage and shipment, easy to set up for use, and sturdy.

Another object is to provide a device which is admirably adapted for use in a variety of display positions, being self-sustaining for certain purposes, and easily supportable by a pole or its equivalent when such type of support is desirable or necessary. The display device is intended primarily for use as an advertising poster or display in stores, supermarkets, and other establishments, but the invention is not restricted to any such particular application or purpose.

A characterizing feature of the improved display structure lies in the employment of a lazy-tongs interengagement between a pair of extremely simple inexpensive cardboard blanks, the manner of constructing and combining these elements being of novel character which produces a highly effective illusion of attractive simplicity. In its preferred form, the invention comprises a first blank of relatively wide stock provided with rectangular cut-outs of special character, a second narrower blank mounted in the cut-outs in a special way, and connection flaps so designed that they always remain concealed and thus contribute to the creation of the desired effect.

In modified forms of the invention, a simple provision of apertures in special locations, and a simple alteration of cuts and score lines in one of the initial blanks, make it possible to support the display in different positions and with different effectiveness.

The preferred embodiment of the invention, and some modifications, all showing the manner in which the objects and advantages of the invention can be attained, are illustrated by way of example in the accompanying drawings, in which—

FIGURE 1 is a perspective view of a display device constructed in accordance with this invention, shown in self-supporting set-up condition;

FIGURE 2 is a plan view of FIGURE 1;

FIGURE 3 is an exploded view showing the parts of which the device of FIGURE 1 is composed;

FIGURE 4 is a plan view of the original blank of cardboard or equivalent stock of which the wider element of FIGURES 1–3 is formed;

FIGURE 5 is a perspective view of a modification;

FIGURE 6 is a perspective view, looking downward, of a further modification;

FIGURE 7 is a cross-sectional view along the line 7—7 of FIGURE 6; and

FIGURE 8 is a view similar to FIGURE 4, of the modified scoring and cutting required to form the wider blank of FIGURES 6 and 7.



The wider blank **10** of the structure shown in FIGURES 1–3 is substantially rectangular and is provided with three parallel fold lines **11**, **12**, and **13**, equally spaced, thus dividing the blank into four hingedly connected panels **14**, **15**, **16**, **17**. The folds are preferably produced by score lines, and are of a character which allow the blank to fold in one direction along the central line **12** and in the opposite direction along the lines **11** and **13**. For descriptive purposes the face of the blank which is visible in FIGURES 1, 3 and 4 will hereafter be designated as the front face of the blank.

In the blank illustrated, the edges **18** and **19** between which the fold lines extend have been shown straight, and parallel to each other. It is not essential that this be so, although if the device is intended to be self-supporting, and to stand by itself on a flat counter top or other surface, the lower edge **19** should be straight (as shown) or at least of a shape to afford a firm footing.

Score lines and cuts along a medial region provide a row of cut-outs in the blank **10**, as best indicated at **20**, **21**, and **22** in FIGURE 3. These cut-outs are aligned in the region about half-way between, and parallel to, the edges **18** and **19**.

More particularly, the cuts **23** and **24**, and the hinge line **25**, define the cut-out **20**. The hinge **25** defines the edge of the cut-out which is parallel to the fold lines **11**, **12**, **13**, and the flap **26**, hinged to this edge, serves as a connector whose function will presently be described.

In similar fashion, cuts **27** and **28**, and hinge line **29**, define the cut-out **22** and the connection flap **30**.

Each connection flap is somewhat shorter than the corresponding pair of cuts which define it. That is to say, the distance between the hinge line **25** and the end edge **31** of flap **26** is slightly less than the length of each cut **23**, **24**; and the same is true of flap **30** (see FIGURE 4).

The central cut-out **21** is defined by cuts **32** and **33**, by hinge lines **34**, **35** (parallel to fold lines **11**, **12**, **13**) and by spaced cuts **36** (FIGURE 4) bounding an area which has been completely severed from the blank. Connection flaps **37**, and **38** are hinged at **34** and **35** respectively.

It is to be noted that the cut-outs **20**, **21**, and **22** intersect only the forwardly-facing folds and end edges of the blank **10**. No cut-outs extend across the rearwardly-facing folds **11** and **13**. It should also be noted that the cuts **23**, **32**, and **27** are aligned and are parallel to the similarly aligned set of cuts **24**, **33**, and **28**.

When the device is set up for use, the blank **10** is accordion-pleated, i.e., it zig-zags from one end to the other, due to the alternating directions of folds **11**, **12** and **13**.

The narrower blank of the device is similarly of accordion-pleated character. It is a substantially rectangular element **39** having parallel top and bottom edges **40**, **41** and parallel fold lines **42**, **43** and **44** (alternating in fold direction) to define hingedly connected panels **45**, **46**, **47** and **48**. The width of the blank **39** between edges **40**, **41** is substantially the same as (or only slightly less than) the spacing between the cuts defining the cut-outs **20**, **21**, **22** in the wider blank **10**.

The two blanks **10** and **39** are interengaged in lazy-tongs relation, as best indicated in FIGURE 2. The rearwardly-facing fold **43**, and the rearwardly-facing panels **45** and **48**, project rearwardly through the cut-outs **20**, **21**, **22**. The parts are permanently held in this relationship by securement of the connection flaps **26**, **37**,

38 and 30 to the adjacent rearwardly-facing areas on panels 45, 46, 47 and 48, respectively. Adhesive may be satisfactorily employed for this purpose.

In the complete assembly, the connection flaps are almost completely hidden, yet the lazy-tongs hinged connection between the two blanks is permanent, staunch, and reliable. As a result, an interesting superposition of display panels is presented to view, with the mode of interconnection not clearly discernible, and an attention-arresting effect is thus produced. A similar appearance is presented at the rear. Hence all panels, both front and rear, may be employed to advantage in displaying advertising or other embellishment.

The collapsibility of the device will be apparent from its lazy-tongs nature, and in compacted condition it can readily be stored or shipped. To set up the device it is merely necessary to expand it to the condition shown in FIGURES 1 and 2, and obviously this is an extremely simple operation calling for no special skill.

The sizes of the blanks used, and the relative proportions of the panels defined by the accordion pleats, may be varied widely, depending upon requirements. For example, a relatively small counter display may have the individual panels (such as those designated 45–48) no larger than two or three inches square; whereas in a display device for use at a relatively high altitude in a supermarket or other establishment the corresponding panels might be several feet square. Moreover, it is not essential that the panels be square, since oblong panels may be similarly provided for.

It is also to be noted that the blanks may under certain circumstances have more than three fold lines, hence more than four adjacent panels. The depiction of a device with four panels is merely by way of example. Also, while the wider blank has been shown provided with only one set of cut-outs 20–22, to accommodate the single secondary blank shown at 39, it will be understood that additional rows of similar cut-outs may be provided, as may be desired, each set accommodating a corresponding additional relatively narrow blank similar to the blank 39 and interengaged in similar lazy-tongs relation.

In FIGURES 5 and 6 (to each of which the foregoing comments as to variability of design also apply) devices have been shown which are adapted to be supported on poles or similar supporting elements.

In FIGURE 5 the modification consists simply in providing apertures 49 through the flap hinges 25, 34 and 35, the hinge line 29 remaining unapertured. The apertures 49 lie along a line perpendicular to the pleat-defining folds of the device. As a result, the structure can be turned to arrange these folds horizontally (rather than vertically as in FIGURE 1) and it can be supported in this position by a pole 80 extending through the apertures 49 with its upper end braced within the angle of the unapertured hinge 29.

If desired, the hinge 29 can also be provided with an aperture aligned with the holes 49, in which case an interesting effect can be produced by passing a pole or equivalent element through all the apertures and supporting the device on the pole in "skewered" style with the pole horizontal or substantially so.

To support the device in the condition of FIGURE 1, but at an elevation, a modified structure of the type shown in FIGURES 6–8 is employed. In this case, the device is provided with a means for mounting it upon a pole extending parallel to the pleat-forming folds. Hinged to one of the faces of the device are special flaps which are foldable from inoperative dispositions close against the face to operative positions at right angles thereto. The special flaps have apertures which align themselves with each other, to receive the pole or equivalent element, when the device is fully set up.

In the device chosen for illustration in FIGURES 6–7, the shapes and arrangement of the parts are substantially



the same as in FIGURES 1–5, except for the cuts and score lines defining the central cut-out. Thus, in FIGURE 8 (as compared with FIGURE 4) the connection flaps 50, 51, hinged along lines 52, 53 respectively, are smaller in size than flaps 37, 38, and not purely rectangular. This does not impair their usefulness for connection purposes, and it allows the material in the region between the oblique cuts 54, 55 to be formed into special rhombus-shaped flaps. One of these is designated 56 and is hinged to the panel 60 along the line 58. The other flap 59 (similarly shaped) is hinged to panel 57 along the line 61. Each of the special flaps 56, 59 is itself a pleated element. Thus, the flap 56 has a fold line 62 extending diagonally across it from the fold line 63 (between panels 57, 60); and the flap 59 has a similar fold line 64. At the midportion of fold line 62 there is an aperture 65, and at the midportion of fold line 64 there is a similar aperture 66'.

When the device is manufactured, a marginal part 67 of flap 56 is secured by adhesive or otherwise to the adjacent panel 57, as best seen in FIGURE 6. This brings the fold line 62 into the same plane as the fold line 63. The marginal part 68 of the flap 59 is similarly secured to panel 60, bringing the fold line 64 also into that plane. As a result, the flaps 56, 59 collapse into nested positions within the angle directly behind the fold line 63 when the device is collapsed; and when it is set up they move to the perpendicular disposition shown in FIGURE 7, thus bringing the holes 65, 66 into alignment for reception of a supporting pole or element 69, as indicated.

For the sake of clearness of illustration, the flap 56 has been shown in FIGURE 6 in the angled condition it starts to assume as the device is first caused to collapse. It is to be understood that a fully planar disposition is assumed when the device is fully expanded.

It will thus be seen that a display device of extreme simplicity and low cost, yet versatile and effective, has been provided. Several specific embodiments have been illustrated. It will be understood, however, that many of the details shown and described may be modified by those skilled in the art without necessarily departing from the spirit and scope of the invention as expressed in the appended claims.

What is claimed is:

1. A collapsible cardboard display device comprising a relatively wide accordion-pleated blank having a front face and a rear face and having a set of rectangular cut-outs along a medial region extending perpendicular to the pleat-defining folds, said cut-outs intersecting only the forwardly-facing folds and end edges, a relatively narrow accordion-pleated blank having a front face and a rear face and fitted in said cut-outs in lazy-tongs relation to the wider blank, and connection flaps hinged to the wider blank along the cut-out edges which are parallel to said folds, said flaps being secured to the adjacent rear-face areas of the narrower blank.

2. A display device as defined in claim 1; said connection flaps being integral parts of the wider blank.

3. A display device as defined in claim 1, in which apertures are provided through said flap hinges along a line perpendicular to the pleat-defining folds, and a supporting pole extending through said apertures.

4. A display device as defined in claim 3, one of said flap hinges being unapertured and said pole being upright with its upper end braced within the angle of said unapertured hinge.

5. A display device as defined in claim 1, provided with means for mounting the device on a pole extending parallel to the pleat-defining folds, comprising flaps hinged to one of the faces of the device and foldable from an inoperative disposition against said face to an operative position perpendicular thereto, said flaps having apertures which align themselves with each other when the flaps are folded to operative positions.

6. A display device as defined in claim 5, said flaps lying directly within the angle formed by one of the pleat-defining folds.

7. A display device as defined in claim 5, said flaps lying in the angle directly behind one of the forwardly-facing pleat-defining folds.

8. A display device as defined in claim 5, said flaps lying directly within the angle formed by one of the pleat-defining folds, at least one of said flaps being itself a pleat whose hinge nests within said fold when the device is collapsed and lies at right angles to said fold when the device is set up.



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