Aug. 31, 1965 H. K. STOESSEL 3,203,124

COLLAPSIBLE DISPLAY DEVICE

Filed Feb. 5, 1963

FIG. 1

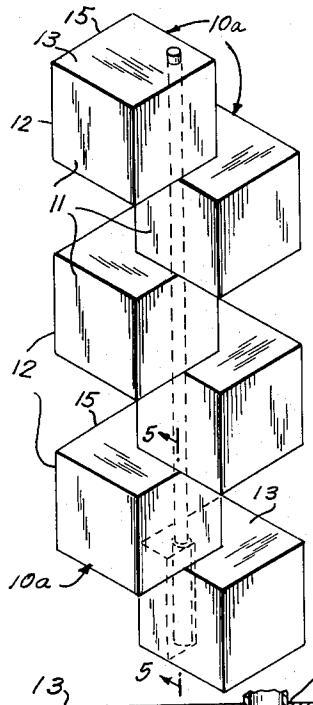


FIG. 2

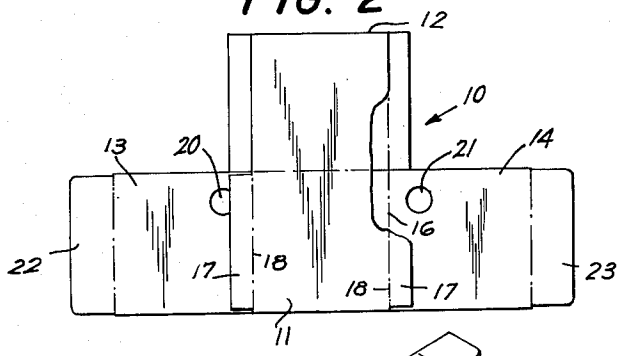


FIG. 6

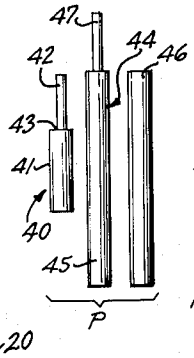


FIG. 3

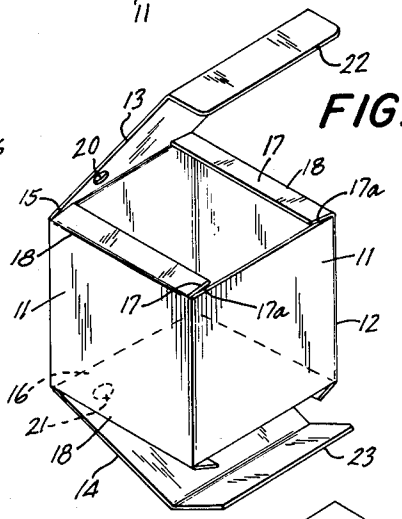


FIG. 5

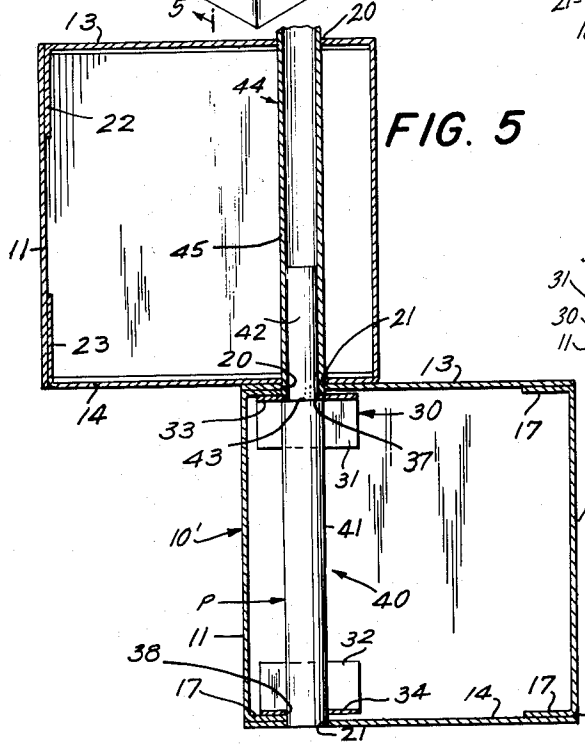
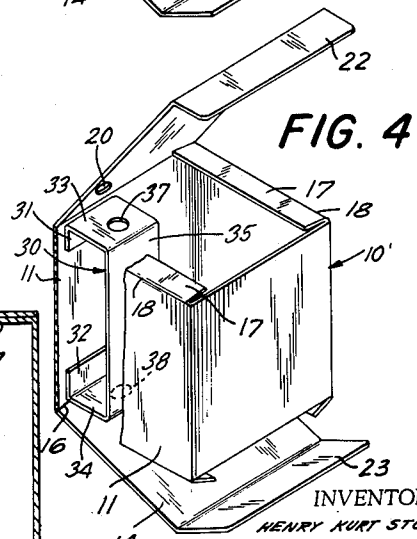


FIG. 4



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COLLAPSIBLE DISPLAY DEVICE

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This invention relates to a display device, and more particularly to an advertising display device.

More particularly, this invention relates to a foldable or collapsible display device, which may be collapsed to form a small package to facilitate transportation or shipping and which may be readily erected to provide an attractive and unique advertising display.

Still more particularly, this invention relates to a unique collapsible display device which may be arranged in many interesting forms to provide different effects.

Accordingly, it is an object of this invention to provide a display device which may be collapsed to facilitate transportation, so as to occupy a minimum of space, and which may be readily erected when desired.

A further object of the invention is to provide a display device of the type described which is relatively inexpensive to produce and which may be collapsed and erected without the necessity of using special tools.

A still further object of the invention is to provide a display device which may be oriented in a plurality of interesting shapes and which is three-dimensional, so as to include a plurality of advertising indicia bearing surfaces.

To attain these objects and such further objects as may appear herein or be hereinafter pointed out, reference is made to the accompanying drawings, forming a part hereof, in which

FIGURE 1 is a perspective view of the device in the erected condition;

FIGURE 2 is a plan view of one component of the device in collapsed condition;

FIGURE 3 is a perspective view of the component of FIGURE 2 in partially assembled condition;

FIGURE 4 is a view similar to FIGURE 3 of a further component of the device;

FIGURE 5 is a fragmentary magnified vertical section taken on the line 5—5 of FIGURE 1;

FIGURE 6 is a side view of further components of the display.

In accordance with the invention, a plurality of box blanks **10** are provided, the blanks in the illustrated embodiment being capable of being assembled to a cube form. While a cube form is not essential, it has been found preferable for advertising purposes.

The cubes **10***a* need not be assembled from the blank of the form indicated at **10**, it being understood that various other forms of blanks may be employed.

A blank **10**, when assembled in cube form, incorporates side walls **11**, each of which is hingedly connected to adjacent side walls by common marginal portions **12**. In addition, cube members include a top wall portion **13** and a bottom wall portion **14**, hingedly connected, respectively, along a top marginal edge **15** and a bottom marginal edge **16** of one of the side wall portions **11**.

Optionally but preferably, the cube members include reinforcing portions **17**, which portions **17** are hingedly connected to top and bottom edges of side wall portions along fold lines **18**. The reinforcements **17**, in the erected condition of the cube, are well known expedients serving, when biased or maintained in the hollow cube, to prevent the side walls **11** from collapsing to the flattened or knocked-down condition shown in FIGURE 2.

The top walls **13** of the cubes are provided with apertures **20**, which apertures register with complemental apertures **21** formed in the bottom wall portions **14** in the

erected condition of the cubes. The apertures **20** and **21** are formed eccentrically, that is, non-centrally, within the top and bottom walls.

The top wall **13** and bottom wall **14** include locking flaps **22**, **23**, respectively, which may be inserted within the cubes and which will lie between the edge portions **17***a* of the reinforcing portions **17** and one of the side walls **11** of the cubes. With the portions **22** and **23** thus inserted or sleeved within the cubes, the later will provide a substantially rigid consrtuction which is resistant to collapsing. Conversely, it will be understood that when the flaps **22**, **23** are removed from the inserted position above set forth, the cubes will readily collapse along the fold lines **12** to the generally flat condition.

The lowermost cube **10′** is provided with retainer means **30** for securing a supporting pole structure P which will ultimately be threaded through the series of cubes and form an integrated structure of such cubes. The retainer means **30** comprises a generally C-shaped member of cardboard or the like having securing branches **31**, **32** fixed to side wall **11** of cube **10′**.

The retainer means **30** includes spaced upper and lower flange portions **33**, **34**, respectively, which flange portions are spanned by a brace portion **35** which is hingedly connected at its upper and lower edges to the flanges **33**, **34**. It will be understood that the flanges **33**, **34** are similarly hingedly connected to securing branches **31**, **32** so that the entire unit **10′** may be folded to the flat condition.

The flanges **33**, **34**, in the assembled condition of the cube, may lie immediately adjacent the top and bottom members **13**, **14** of the cube **10′**, as best shown in FIGURE 5. Said flanges **33**, **34** are provided with apertures **37**, **38**, which apertures, in the assembled condition of the cube **10′**, are in registry with the apertures **20**, **21**.

The device is assembled from the flat condition and supported upon pole assembly P, the later assembly being threaded through the registering apertures formed in the top and bottom walls of the cubes. The pole section P, which preferably comprises a plurality of nesting pole elements of varying diameter, includes a lower section **40** consisting of a lower pole segment **41** and an upper pole segment **42** extending therethrough, of lesser diameter than the section **41**. The length of section **41** is such that it corresponds to the distance between the lower wall **14** of cube **10′** and the undersurface of flange **33** of the retaining means **30**.

It will be understood that the section **40** is assembled within the lowermost cube **10′** by inserting the pole section **40** through aperture **21**, the same being urged upwardly until the shoulder **43** provided at the upper end of the wider section **41** lies adjacent the undersurface of the top wall **13** of cube **10′**. Section **41** provides a close frictional fit with aperture **21** in the bottom portion **14** of cube **10′** and apertures **37** and **38**. It will be recognized that by reason of the engagement of shoulder **43** with top wall **13**, pole section **41** cannot be removed in an upward direction, i.e. through the aperture **20** of the upper flap. Optionally, the diameter of aperture **20** may be great enough to permit passage therethrough of portion **41** and the aperture **37** of flange **33** may be of a size closely receiving narrow diameter pole section **42**.

The assembly of the cubes is completed by sleeving or nesting the second section **44** of the pole assembly P over the projecting portion **42** of the first pole segment **40**, the lowermost end **45** of section **44** having an inside diameter closely approximating in dimension the outside diameter of the element **42**.

When the element **44** is thus assembled, the lowermost end portion **45** thereof will rest against the upper face of the flange **33** of the retainer means **30**.

In like manner, an upper pole section **46** may be sleeved

over a narrow diameter projecting portion **47** extending above the pole section **44**, such operation being repeated until the desired height to accommodate the number of cubes required for the particular display is achieved. When the assembly of the pole P is completed, subsequent cubes **10***a* may be assembled on the unit by sleeving the apertures **20**, **21** over the pole sections, said apertures preferably providing a relatively tight frictional fit with the outer diameter of the pole P.

By reason of the fact that top and bottom flaps **13**, **14** of the cubes are in engagement with each other in their stacked relation on the pole and by reason of the frictional fit provided between the top and bottom walls and the pole, the flaps **22**, **23** extending from said walls are maintained within the cubes and, thus, the cubes are positively prevented from collapsing.

The action of the pole in preventing collapse of the cubes is important to the provision of an integral structure.

Hinged movement of the top and bottom walls out of the erected position is constrained in the display, in addition, by reason of the fact that the top and bottom walls must move in a radius or angular direction by reason of their connection with the side walls. Thus, any angular movement of a top or bottom wall of one of the cubes would serve to urge the pole toward the radius or hinged connection of the moving top or bottom wall. It will be readily recognized, therefore, that any attempt to pivot one of the top or bottom walls of one of the cube members from the erected position of the cube would result in urging the pole section P against the portion of the aperture furthest away from the hinged connection and the pressure between such parts would become increasingly great as further pivotal movement is effected. It will thus be realized that the pole serves the double function of providing a pivotal support for the individual cubes and at the same time locking each cube against collapse by preventing movement of the top or bottom wall of said cube out of locking engagement within the cube.

A similar function in maintaining the lowermost pole section **40** within the lowermost cube **10'** is served by the locking means **30**. In this instance, by reason of the connection of shoulder **43** of the lowermost pole section with the undersurface of the flange **33**, any attempt to move the lowermost pole section in an upward direction would serve to shift the aperture **37** out of registry with the aperture **20** and thus wedge the lowermost pole section with increasing tightness in the cube **10'**.

It will be recognized that, if desired, some ballast (not shown) in the form of sand or a heavy object may be disposed within the cube **10'**.

The cubes, despite their frictional engagement with the pole P, may be shifted about the pole to any desired position and thus may be oriented in the form of a spiral or may be staggered and offset as shown in FIGURE 1. The use of ballast in the manner aforesaid will assure that the unit will not be upset, despite an unbalanced orientation of the cubes about the pole.

Optionally but preferably, at least one section of the pole P should be of a length equal to the longest dimension of the box blank **10** so as to reduce the likelihood of the pole section or the box blanks being bent during shipment.

It will be readily recognized that advertising indicia or the like may be disposed upon the side walls **11** of the cubes.

Having thus described the invention and illustrated its use, what is claimed as new and is desired to be secured by Letters Patent is:

1. A display device comprising a plurality of foldable box members having hingedly connected side wall members, a top member and a bottom member, said top and bottom members having a hinged marginal edge connection with a top and bottom edge, respectively, of a side wall portion, a locking flap on said top wall portion and on said bottom wall portion, said flaps being insertable between opposed side wall members to lock said box members against collapsing, an aperture formed in said top and bottom wall portions, said apertures, in the erected condition of said box, being in registry and being eccentrically disposed in said top and bottom walls, a vertically disposed pole member comprising a plurality of connectible sections threaded through said apertures to permit horizontal, pivotal movement of said boxes about said pole member, said boxes being in stacked array on said pole with a bottom wall portion of all but the lowermost box member resting upon a top wall portion of the box immediately beneath the same, said lowermost box member including therein spaced, inturned flange portions paralleling said top and bottom wall portions, said flange portions including apertures in registry with the apertures of said top and bottom wall portions of said lowermost box, and said pole comprising nesting sections of disparate diameters, the diameter of the pole section within said lowermost box being of greater diameter than the aperture in the top wall section of said lowermost box.

2. An advertising display device comprising a plurality of hollow, collapsible cube members, registering apertures formed in parallel opposed faces of said cube members, said apertures being eccentrically located on said faces and a telescoping support pole comprising a plurality of nesting sections threaded through said apertures and forming a close frictional fit therewith, the lowermost cube including retaining means for securing said pole against removal therefrom.

3. A device in accordance with claim **1** wherein said pole includes a hollow lower section of a height substantially equal to the height of the lowermost box and having its upper end bearing against the under surface of the top wall of said lowermost box, said lower section having an outer diameter greater than the outer diameter of said aperture in said upper flap, an upper pole section having a depending portion of an outer diameter fitting within said hollow lower section, the main body of said upper section being of an outer diameter greater than the diameter of said aperture of said upper flap, whereby the upper flap is sandwiched between portions of said upper and lower pole sections.

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