Feb. 14, 1939. H. ZIEMMERMAN 2,147,132

FOLDING DISPLAY

Filed April 23, 1938 2 Sheets-Sheet 1

Fig. 1.

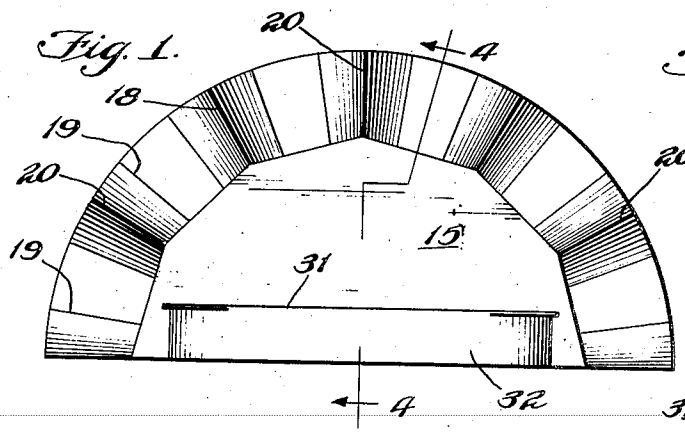


Fig. 2.

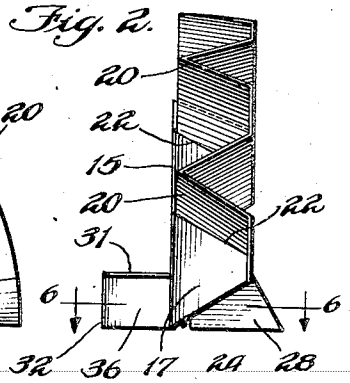


Fig. 3.

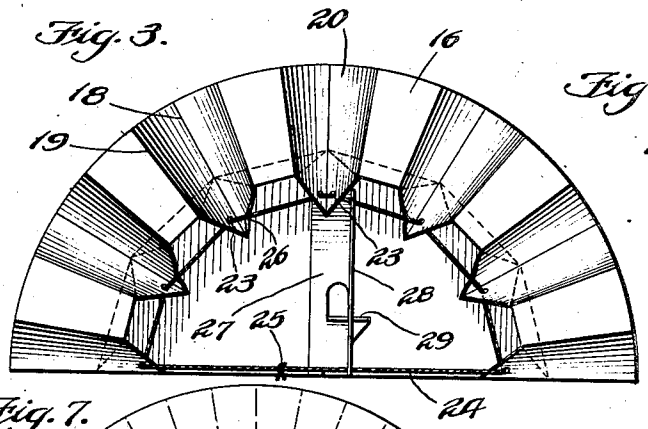


Fig. 4.

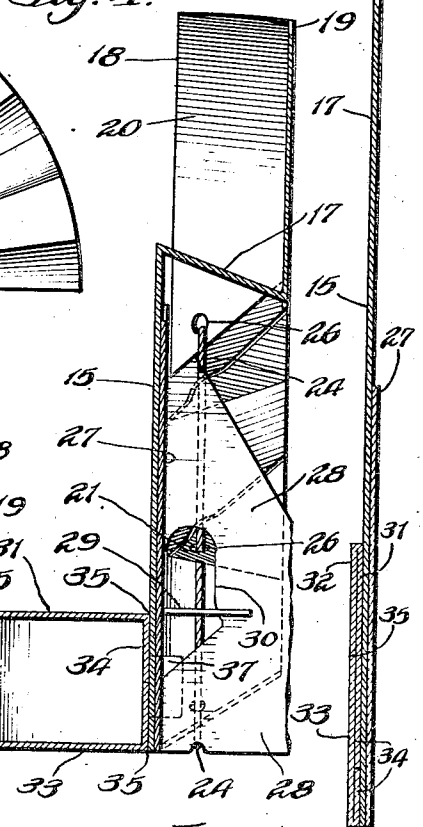


Fig. 5.

Fig. 7.

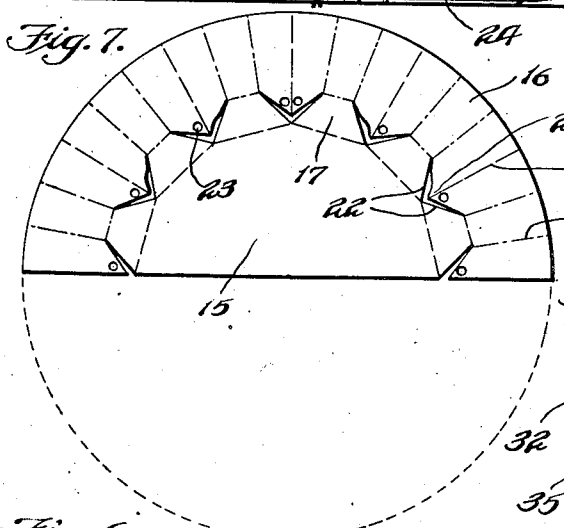
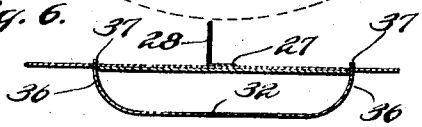


Fig. 6.



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Feb. 14, 1939. H. ZIEMMERMAN 2,147,132

FOLDING DISPLAY

Filed April 23, 1938 2 Sheets-Sheet 2

Fig. 8.

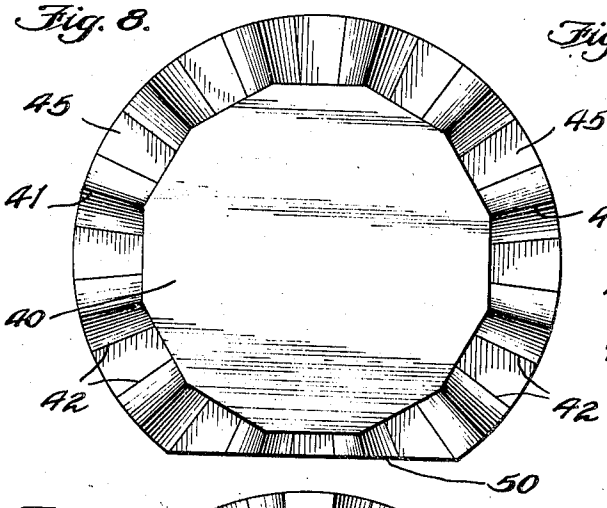


Fig. 9.

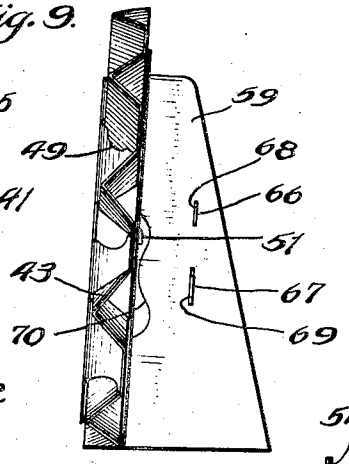


Fig. 10.

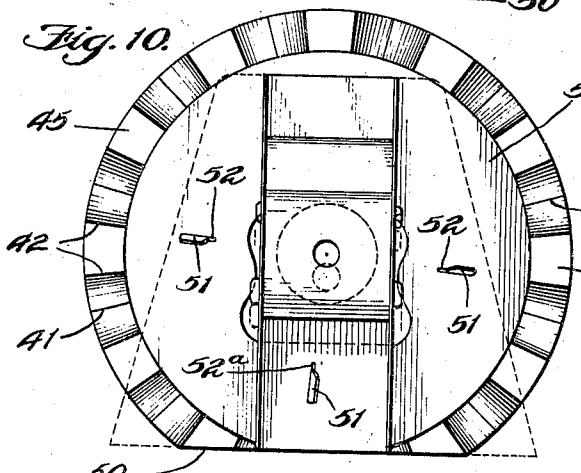


Fig. 12.

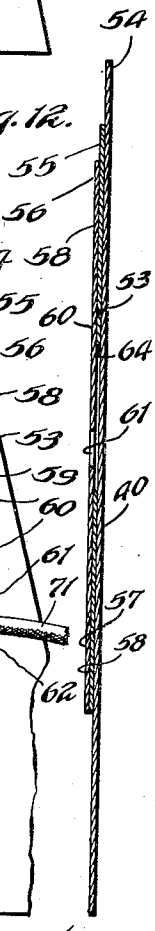


Fig. 11.

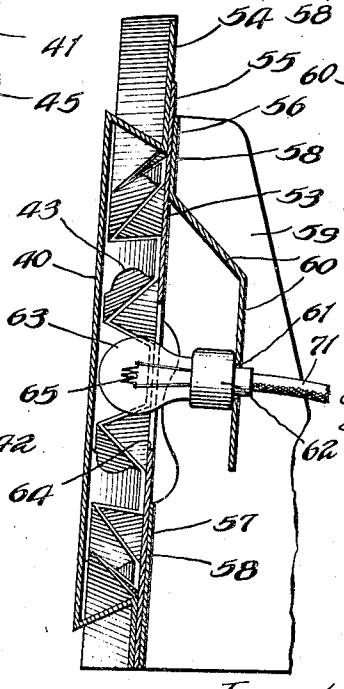
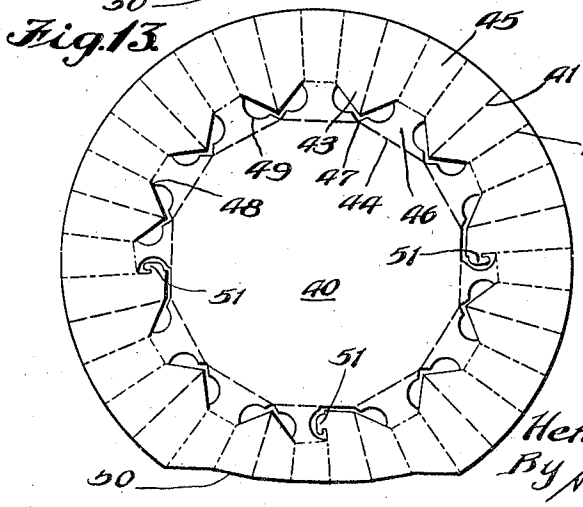


Fig. 13.



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Patented Feb. 14, 1939 2,147,132

UNITED STATES PATENT OFFICE

2,147,132

FOLDING DISPLAY

Henry Ziemmerman, Chicago, Ill., assignor to Chicago Cardboard Company, Chicago, Ill., a corporation of Illinois

Application April 23, 1938, Serial No. 203,798

15 Claims. (Cl. 40—124.1)

This invention relates in general to a folding display made of sheet cardboard and the like, and is more particularly described as a radiating or sunburst type of display in which a portion is formed with radiating ribs or flutes.

An important object of the invention is in the provision of a display with radiating flutes formed of a single sheet of cardboard.

A further object of the invention is in the provision of improved means for holding the fluting in radiating position.

A still further object of the invention is in the provision of a display formed of cardboard and the like which is cut and scored to form a radiating fluting and also foldable flatly for shipment and storage.

A still further object of the invention is in the provision of a display with radiating fluting having a supporting stand and openings at the inner ends of the fluting adapted to receive illumination from a central lamp which is carried by the support for the display.

Other and further objects of the invention will appear hereinafter, preferred embodiments of the invention being illustrated in the accompanying drawings in which

Fig. 1 is a front elevation;

Fig. 2 is a side elevation; and

Fig. 3 is a rear elevation of a semi-circular display in accordance with the invention;

Fig. 4 is an enlarged sectional view taken on the line 4—4 of Fig. 1;

Fig. 5 is a flat, folded section of the display;

Fig. 6 is a reduced section taken on the line 6—6 of Fig. 2; and

Fig. 7 shows a blank or sheet cut and scored to form the display of Fig. 1;

Fig. 8 is a front elevation;

Fig. 9 is a side view; and

Fig. 10 is a rear elevation of another display having radiating marginal fluting;

Fig. 11 is a sectional view illustrating the supporting easel for the display and an illuminating lamp therefor;

Fig. 12 is a sectional view of this display in flat folded condition; and

Fig. 13 shows the blank from which the display of Fig. 8 is formed.

Various types of folding displays are made from single sheets of cardboard and similar sheet material, adapted to fold flatly for storage and shipping, either together with or separately from a supporting easel or stand, and the display being readily extended or set up for display purposes. The present invention embodies a radiating type of display, or a display with a radiating marginal edge in which the edge is formed with radiating ribs or flutes adapted to be offset or drawn inwardly from a central solid portion and thus providing radiating angular ribs which are colored in a distinctive manner to represent a so-called sunburst or radiating type of display which may also be illuminated from the interior and rear of the central portion, thereby adding attractiveness, distinction and difference to the display.

In this type of display it is necessary to draw the ribs or flutes inwardly and to hold them in their display or set up position, from which they may be released if desired to fold the display flatly either together with or separately from a rear supporting easel.

Referring now more particularly to the drawings, a blank of sheet material is cut and scored to provide a central portion 15 connected to a marginal edge 16 by a plurality of adjacent ring portions 17.

In the marginal rim portion the opposite faces of the material are provided with scores 18 and 19 adapted to form angular ribs or flutes 20 with inner angular ends 21 spaced from adjacent cut edges 22 at the ends of ring portions 17, the angular extremities of the ribs being adapted to extend inwardly and being seated in the angular support provided by the adjacent edges 22 when the angular flutes 20 are drawn inwardly. The lines 18 and 19 forming the fluted ribs preferably radiate from a common center so that the ribs when drawn inwardly also radiate therefrom. In order to draw the ribs inwardly the inner angular ends of one or both sides of each of the angular ribs is formed with a perforation 23 through which a fastening and tightening cord 24 may be inserted and the extremities secured together by means of a slip or permanent knot 25 so that by inserting the cord through the perforations and drawing it up tightly the ribs will all be seated in the angular grooves between the rim portion 17. If only one of the sides of each rib is provided with a perforation 23 the other side of the rib may be formed with a notch or recess 26 in the edge which prevents or eases the contact with the cord or string 24, thereby reducing the friction and the force necessary to pull in the radiating ribs by means of the fastening cord.

In order to support a display of this kind a foldable easel has a portion 27 fixed by adhesive to the back of the central portion 15 of the display with a supporting wing 28 hinged thereto and foldable rearwardly at right angles where

it is held in fixed position by a locking tab 29 also hinged to the back portion 27 and engaging in a recess 30 in the hinged portion 28 for holding it at right angles.

For further decorative or display purposes a shelf 31 may be attached to the lower front side of the central portion comprising a front 32, bottom 33 and two attachment portions 34 adhesively secured to the central portion and having scores 35 at the angular corners of the structure adapting it to fold flatly as shown in Fig. 5 against the front of the display in folded condition. The extremities 36 of the front may be rounded and provided with reduced tabs 37 which are inserted through appropriate openings at the front of the central portion 15 for holding the shelf in upright or extended display position, the extremities of the top or shelf 35 being cut free from the rounded portions 36 so that the ends of the shelf may extend beyond the curved portions of the support as shown more clearly in Fig. 1.

In the form of the invention as shown in Figs. 8 to 13 inclusive, a blank of sheet material has a central portion 40 with radiating scores 41 and 42 on opposite sides to provide angular fluted ribs 43 and with scores 44 and 45 on opposite sides to provide the supporting and connecting ring portions 46. The ends of the ring portions are separated from angular ends of ribs 43 and providing a central notch 47 and outer angular supporting portions 48 for seating the ribs therein with a recess 49 in each edge to provide a light aperture at each outer side of each of the ribs for illuminating the outer surfaces of the ribs if desired.

Although both forms of the invention are shown as having substantially circular outer edges it is apparent that the outer edge may be square, rectangular, or of any other desired shape or outline.

In the form shown in Fig. 8 the lower edge 50 of the blank is cut to provide a substantially straight supporting edge when the fluting or ribs is drawn inwardly at the back of the central portion to provide a more stable support for the display in connection with an easel or other suitable standard connected to the back thereof. The inner ends of the ribs may be provided with perforations as in the other form by which they are drawn inwardly and seated in the notches 47 and angular projections 48, or some of the inner rib projections may be formed with hooks 51 at one side thereof adapted to extend outwardly from the ribs and to engage in spaced slots 52, of a back plate 53, which hold the ribs inwardly and in their radiating position. These slots 52 are so positioned that the hooks 51 cannot be inserted therethrough until the angular rib structure is pressed inwardly at the margin of the central portion 40 and the hook of the projection engages the slot to prevent its disengagement except by manual attention thereto. One portion of the back plate 53 is preferably comprised of a single sheet of material with the upper and lower central portions 56 and 57, attached to the back plate by adhesive and wings 59 which fold against the back plate or are extended at right angles thereto in supporting position. Hinged to the upper central portion 56 is a brace 60 adapted to be bent parallel to the back plate 53 and having a perforation 61 therein through which an electric lamp socket 62 may be inserted and held so that a lamp 63 may be disposed within an opening 64 of the back plate so that its lighting element 65 is substantially in line with the openings 49 at the sides of the ribs 43 and back of the central plate 40.

To hold the supporting easel wings in position they are provided with slots 66 and 67 and the brace 60 is provided with corresponding projections and hooks 68 and 69 on opposite sides so that the projections and hooks are inserted through the slots and engagedly held thereby against accidental disengagement or collapsing movement, the projections and hooks being cut out of an irregular recess 70 of which the supporting easel is made so that it too may be cut, scored and formed of one piece of material. If the lower part of the easel extends over one of the rib locking projections 51, a corresponding slot 52a must be cut in the easel as shown more clearly in Fig. 10.

When this display is to be illuminated, an electric lamp 63 is inserted in the brace before the easel is set up and electric light wires 71 extend from the outer side of the brace where they do not interfere with the display. By painting or coloring the sides of the radiating ribs the light rays from the lamp will illuminate the sides of the ribs, making them distinctive and highly ornamental and adding materially to the appearance of the display.

This form of the invention may also be collapsed flatly by disengaging the easel parts, removing the lamp therefrom, and disengaging the rib holding projections 51 from the slots 52 and 52a which allows the main display sheet to be spread out flat although attached at one portion to the back plate 53.

It is obvious that a great variety of different displays can be made embodying the radiating rib or fluted designs which may be made in accordance with this invention from a single sheet of cardboard or similar material cut, scored and formed as herein set forth and described.

I claim:

1. In a display, a sheet of cardboard or the like cut and scored about a central portion and folded to provide a fluted rim offset and set inwardly at one side of the central portion forming a projecting fluted edge.

2. In a display, a sheet of cardboard or the like cut scored and folded to provide an offsetting rim with radiating scores in opposite faces of the edge to form radiating ribs extending within the edge of the central portion at one side thereof.

3. In a display, a sheet of cardboard or the like cut scored and folded about the edge to provide offsetting ring portions connected to a marginal rim, having scores in opposite sides thereof to produce angular flutes with inner ends which extend between the ring portions at one side of the sheet forming an angular fluted edge.

4. In a display, a sheet of cardboard or the like cut and scored about a central portion to provide connecting ring portions and a marginal rim scored on opposite sides and bent to form angular flutes with the inner ends of the flutes extending inwardly within the edge of the central portion, and means for engaging some of the inwardly projecting ends for holding them offset with respect to the said central portion providing an outer rim of angular radiating projections.

5. In a display, a sheet of cardboard or the like cut and scored about a central portion and bent to provide a marginal rim scored on opposite faces and connecting ring portions with

angular notches to position and receive angular projections of the rim portion therebetween, the ring portions offsetting the rim at one side of the central portion and serving to hold the angular portions of the rim in predetermined position.

6. In a cardboard display, a sheet cut and scored about a central portion and bent to provide an outer rim with opposite scores to form radiating angular flutes with inward projections connected to the central portion by offsetting ring portions having angular sides to seat the angular flutes therein, and means engaging the inner projections of the angular flutes for drawing them inwardly and holding them against the said ring sections to form a radiating fluted edge.

7. In a foldable cardboard display, a sheet cut and scored about a central portion and bent to provide a marginal rim with angular flutes connected by ring portions having notches between them which seat the flutes, and means connected to the inner end of the flutes to draw them inwardly upon the said ring portions, offsetting the flutes at one side and inwardly from the edge of the central portion.

8. In a folding cardboard display, a sheet cut and scored about the edge and bent to provide a rim with a plurality of angular ribs connected to a central portion by a plurality of offsetting rim portions spaced apart to seat the angular ribs therebetween, means for engaging the inner ends of the ribs and pulling them inwardly to offset the rim at one side of the central portion and to seat it in the grooves between the ring members, and means for supporting the display thus formed in an upright position.

9. In a display formed of a sheet of cardboard or the like, a central portion and a rim portion connected thereto by offsetting ring sections cut angularly at their adjacent edges, and the rim provided with scores in opposite faces and bent to form angular ribs with inward projections seated against the angularly cut ring sections when the rim is drawn inwardly, and means for drawing the rim inwardly comprising perforations at the inner ends of the ribs, and a tightening band threaded through the openings and drawn inwardly to hold the ribs in an offset position at one side of the central portion.

10. In a folding cardboard display, a central portion and a plurality of marginal radiating ribs, the ribs being formed by scores in opposite faces which are bent and connected to the central portion by ring sections having adjacent angular edges for seating and positioning angular ribs of the rim therebetween, means for engaging the inner ends of the ribs and drawing the entire rim inwardly upon the ring portions as offsetting members until the ribs are seated against the edges of the ring portions, and means secured to the sheet at the rear thereof for supporting it in an upright position.

11. In a foldable display, a sheet of cardboard or the like having an imperforate central portion, a marginal rim comprising scores in opposite faces folded to form angular radiating ribs and offsetting ring portions connecting the rim to the central portion with angular adjacent edges for seating the rims and with openings in the said angular edges at the outer sides of the ribs, the said angular ribs radiating from a common center so that a light placed at the center will shine through the openings at the edges of the ring portions to illuminate the sides of the ribs which extend beyond the central portion of the sheet at the marginal edge thereof.

12. An illuminated display comprising a sheet of cardboard cut, scored and folded to provide a central portion with a rim of radiating rib sections connected thereto by offsetting ring portions having recesses in the adjacent edges, and the rim having scores in opposite faces to provide ribs seated between the ring portions and having recesses at the sides thereof, means for engaging the rim portions and holding them inwardly in an inwardly offset radially fluted position, and means for supporting a lamp at the back of the central portion of the display at the center of the radiating ribs and thereby illuminating the sides of the ribs through the openings in the edges of the ring portions.

13. A display comprising a central portion with a fluted rim offset inwardly at one side of the central portion by ring sections having openings at the sides of the flutes, a support at the rear of the display for holding an electric lamp to shine through the openings at the sides of the flutes for illuminating them in the offset portion which projects beyond the said central portion.

14. In a display, a sheet of cardboard having a central portion with a rim connected thereto by ring sections having angularly cut adjacent edges and with scores in the opposite faces of the rim folded to provide angular ribs seated between the ring sections and having inward projections, some of which have hooked extremities, means for drawing and holding the rim in an inwardly offset fluted position, said means comprising a plate having slots therein engaged by the said hooked projections and thus retaining the rim of the display in an inwardly offset, outwardly radiating position.

15. In a foldable display, a sheet of material cut and scored about a central portion oppositely folded to provide a rim with radiating angular ribs connected to the central portion by ring sections which offset and seat the ribs when the rim is drawn inwardly, means for engaging the inner ends of the ribs and thereby holding the rim in an inwardly offset, outwardly flaring position, an easel support for the rear of the display comprising spaced uprights and a perforated connecting back, a lamp inserted through the perforation in the back and located at the center of radiation of the ribs, and the ring sections at the sides of the ribs having openings through which the lamp illuminates the outer sides of the ribs which project beyond the central portion of the display.

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