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[54] **ARTICLE DISPLAY FRAMES AND THEIR ASSEMBLY WITH DISPLAY ARTICLES**

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[52] **U.S. Cl.** **40/152**
[51] **Int. Cl.** **G09f 1/12**
[58] **Field of Search** 40/152, 155, 156

[56] **References Cited**

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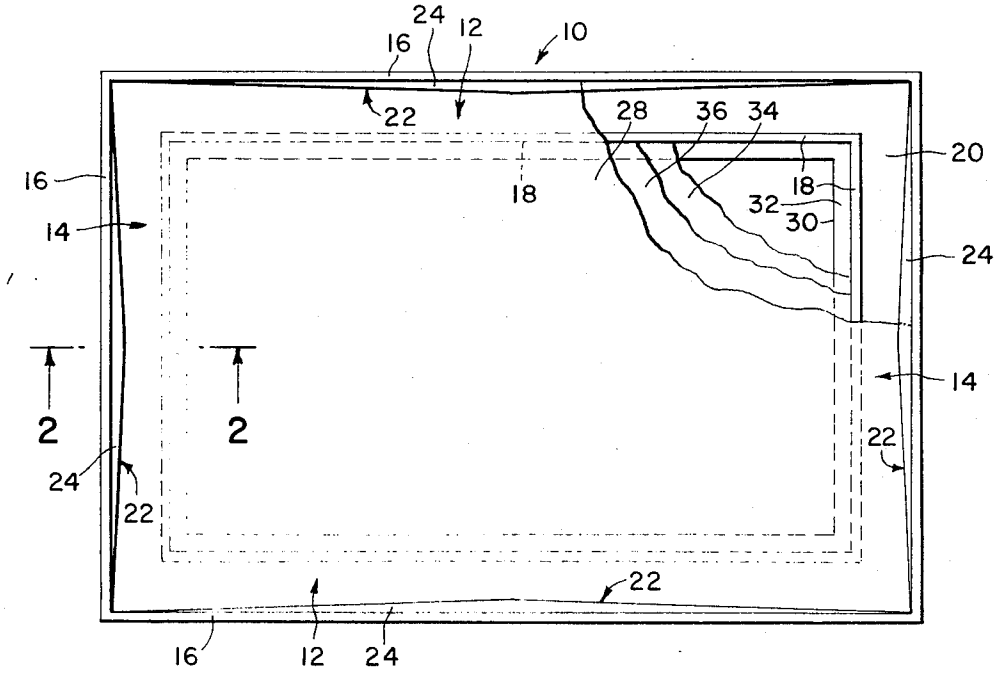
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[57] **ABSTRACT**

A frame for a picture or the like including opposed pairs of frame sides, each side including a peripheral wall and associated means for supporting an article within the frame opening, each peripheral wall of each side having an inwardly sloping projection adapted to serve for guiding a backing board into place within the frame and to overlie the edges of the backing board after it is in place, to retain it within the frame, each said projection tapering from its center in the direction of each end of the wall to which it is connected.

11 Claims, 3 Drawing Figures



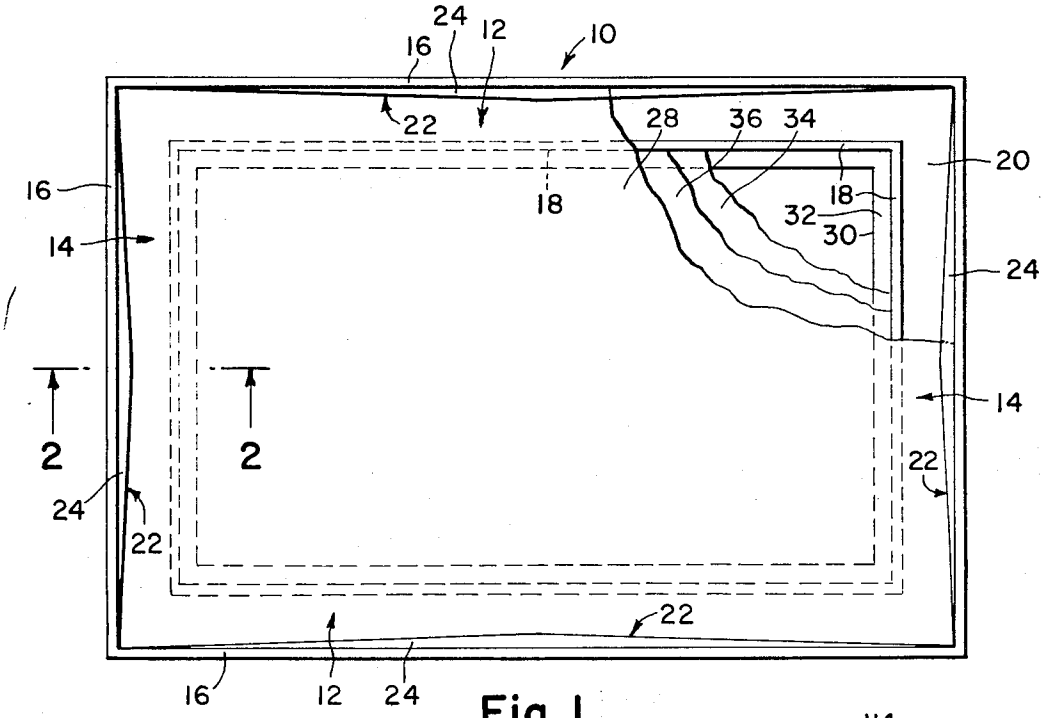


Fig. 1

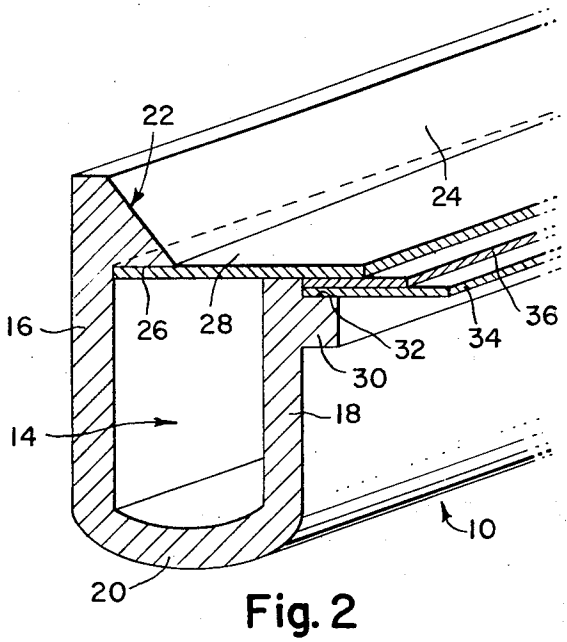


Fig. 2

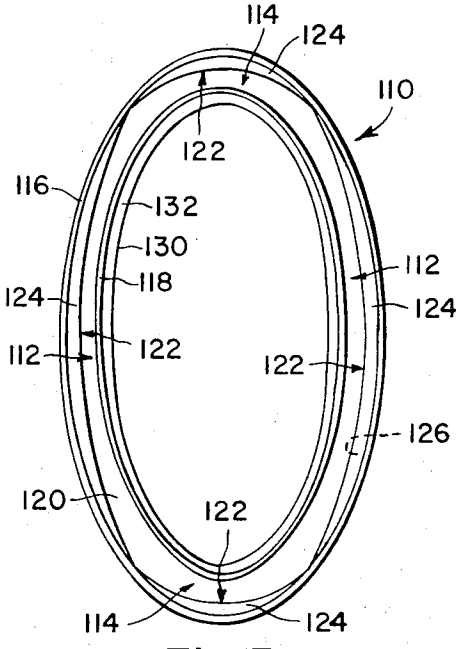


Fig. 3

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ARTICLE DISPLAY FRAMES AND THEIR ASSEMBLY WITH DISPLAY ARTICLES

The present invention relates to display frames, of the type used for the framing and display of pictures and like articles, such as diplomas, licenses, or the like, and to the assembly of such frames and articles.

Display frame and article assemblies, of the type to which the present invention relates, generally comprise, in addition to the frame and article fitted therein, an outer backing board, generally formed of stiff paper board and secured to the back of the frame for the purpose of retaining of the displayed article therein.

Heretofore, the securing of the backing board to the frame has been a time and labor consuming operation which usually required the utilization of extranneous fastening means, such as nails, clips, or staples, or the like that had to be accurately and skillfully set in place, generally with the use of hand tools, without causing damage to the frame or its contents. Such procedure also required the utilization of skilled operators. All of the foregoing greatly increased the cost of picture or like framing.

It is the object of the present invention, therefore, to provide display frames, of the character described, that may be assembled with the displayed article and backing board without the use of any extraneous fastening means and without the use of any hand tools, to thereby make the assembly operation simple, easy and rapid and capable of being performed by operators having a minimum of skill and training, without risk of damage to the frame and framed article and at greatly reduced cost.

It is another object of the present invention to provide frames of the character described in which, when once assembled, the backing board remains safely and securely in place and is inhibited against distortion or curling of its edges, even at the corners thereof.

It is a further object of the present invention to provide frames, of the character described, in which the backing board makes substantially airtight contact with the frame, to thereby provide maximum protection against atmospheric pollutants and erodents, when used in association with a protective glass for the front of the framed article, to thereby greatly prolong the preservation of such framed article.

The foregoing and other objects and advantages of the frames of the present invention and their assemble with framed articles will become more readily apparent to those skilled in the art from the embodiments thereof shown in the accompanying drawings and from the description following. It is to be understood, however, that such embodiments are shown by way of illustration only, to make the principles and practice of the invention more readily comprehensible, and without any intent of limiting the invention to the specific details therein shown.

In the drawings:

FIG. 1 is a plan view of the rear of one embodiment of a frame of the present invention, shown as assembled with a displayed article and retaining backing boards; partly broken away, to disclose details of construction and assembly;

FIG. 2 is a section, on an enlarged scale, of the frame of the assembly of FIG. 1, taken on line 2—2 of FIG. 1; and

FIG. 3 is a plan view of the back of another embodiment of a frame of the invention, illustrating the application of the principles of the invention to a frame of rounded shape.

Generally stated, the invention contemplates the provision of a frame having a hollow body of channel-shape cross-section whose outer wall is resiliently flexible and is higher than its inner wall, whose inner wall serves to support a display article by the marginal edge portions of the article and whose outer wall is provided along opposed portions thereof with elongated, inwardly and downwardly sloping detent projections that narrow from their center toward the ends of their connected wall portion in the directions of such connected wall portion, and serve to guide a backing board, by its edges, into and retain it in place within the frame; serving at the same time to press the connected wall portion outwardly as the edges of the backing board are pressed against the sloping surfaces, to permit passage of such edges past the projections to be thereafter engaged under said projections.

More specifically stated, and with particular reference to the embodiment of the invention illustrated in FIG. 1, thereof, the frame, generally designated as **10**, is preferably formed in one piece, as by molding from a synthetic plastic material that retains residual resilient flexibility when formed in sufficiently thin sheet form. As numerous such synthetic plastic materials are known on the market and readily available, it is not thought necessary to specifically name any of them or their combinations.

The frame **10** is shown to be of rectangular shape, including pairs of opposed frame sides, **12** and **14** and is also shown to be of hollow, channel shape construction; the channel comprising an outer wall, **16**, and inner wall, **18** and a connecting wall, forming the front of the frame, and designated as **20**; the pairs of opposed sides defining the display opening of the frame. At least wall **16** is formed sufficiently thins to retain the residual resilient flexibility of the material and is of greater height than inner wall **18**, for reasons hereinafter explained. Walls **16**, **18** and **20** may be smooth and even surfaced, as illustrated, or may be longitudinally irregularly surface, in imitation of ornamental moldings of various types from which picture or like frames are conventionally formed.

The wall portion **16** of each frame side **12** and **14** is formed with a nose-like detent rib, generally designated as **22**, overhanging the channel recess. Rib **22** is formed with an inwardly and downwardly sloping surface, **24**, and a detent surface, **26**, extending from the lower edge of surface **24** in a preferably normal direction toward wall portion **16**. Rib **22** is preferably of even height throughout its length which expends, preferably substantially the length of the wall portion **16**, and of a thickness that reduces from the center of the rib in each direction, so that detent surface is of flat triangular shape; whereby rib **22** provides minimum interference with the resilience of a wall portion **16**.

Inner frame wall **18** is of lesser height than wall **16**, terminating a distance below detent surfaces **26** preferably not greater than the thickness of the outer backing board, **28**, which is to be used with the frame, and is of a size and dimenion substantially equal to the space defined by the four wall portions **16**, below ribs

22. Wall 18 of each frame side 12 and 14 is provided with an inwardly extending rib, 30, at a point a predetermined distance below its edge. Rib 30 is provided with a preferably flat forwardly facing surface, 32, preferably normal to wall 18, which serves to support by its marginal edge portions the framed article 34, and, if desired, also an intermediate backing board, 36, of the same size as the framed article 34; the distance between surface 32 and the edge of wall 18 being substantially equal to the thickness of the two supported items. Where it is intended to support a protective glass in front of the framed article, the distance between surface 32 and the end of wall 18 may be adjusted to accommodate the glass, as well.

In forming the frame and display article assembly of FIG. 1, frame 10 is rested on its wall 20. A display article 34, such as a picture, diploma, license, or the like, with or without a mat, is placed and supported on surface 32 of ribs 30. Intermediate backing board may then be placed over the display article 34. When desired, a protective glass may be placed on surface 32, below article 34.

An outer backing board 28 may then be rested on the center portions of detent ribs 22 and downwardly pressed or struck, to cause outward flexing of wall portions 16 of frame sides 12 and 14 and permit the edges of backing board 28 to pass said ribs and allowing said detent ribs to return to normal position and have their detent surfaces 26 overlie the marginal edge portions of backing board 28 and retain the latter in place.

It will be clear that detent surfaces will engage substantially the entire length of each edge of backing board 28 and inhibit the curling of any part thereof, even at the corners. It will also be clear that board 28, when in place, will rest on the end edges of wall portions 18, the seal the frame opening from the rear.

In the embodiment of FIG. 3, the frame, generally designated as 110, is likewise of trough shaped cross section. Sides 12 and 14 are arcuate and may be of different or the same radius, and wall portions 116 and 118, of such frame sides are correspondingly arcuate, as are detent ribs 122 and article supporting ribs 130. Detent ribs 122 may be formed to taper in thickness from the center thereof toward the ends of the connected wall portion 116 by forming the inner lower edge of the rib 122 on a larger radius than the connected wall portion 116. Frame 110 may be assembled with a display article and backing boards in the same manner as frame 10. To facilitate such assembly, a backing board may be formed of a size slightly less than the rear opening of the frame; any space resulting from such difference in size being immaterial from the point of view of protecting the assembled display article by reason of the sealing contact formed between the outer backing board and the ends of wall portions 118.

This completes the description of the frames of the present invention and of their assembly with articles to be displayed in them. It will be readily apparent that such frames may be readily and economically mass produced. It will also be apparent that they may be formed in a great variety of ornamental and decorative forms and shapes. It will likewise be apparent that display articles may be assembled with such frame with great rapidity and economy and provide safe and secure assemblies at greatly reduced cost.

It will be further apparent that numerous modifications and variations may be made in the frames of the present invention, by any one skilled in the art, in accordance with the principles of the invention hereinabove set forthand without the exercies of any inventive ingenuity.

What I claim is:

1. A display frame, of the character described, comprising an annular body defining a central display opening, said body including at least one pair of opposed hollow sides of channel-shape cross-section, each said side section comprising an outer peripheral wall portion of resilient flexibility and an inner wall portion connected to said peripheral wall portion in spaced relation thereto and adapted to support article on its edge within said frame; the peripheral wall portion of each said side section having a detent projection for guiding and securing a backing board in place within said frame outwardly of said inner wall portion, said detent projection having a surface sloping inwardly into said display area in the direction of said inner wall portion and terminating short thereof, said inwardly sloping surface tapering from the center of the pro-jection in the direction of each end of the connected peripheral wall portion adjacent said ends.

2. The frame of claim 1, wherein said body is of unitary construction and molded of a synthetic plastic material.

3. The frame of claim 2, wherein said projection is integrally molded with said peripheral wall portion and is formed with a bottom detent surface substantially normal to said peripheral wall, said detent surface disposed above the level of the outer edge of said inner wall a distance substantially equal to the thickness of a backing board, whereby said backing board is engaged under said projections rests on the outer edge of said inner wall.

4. The frame of claim 1, wherein said inner wall portion is formed with a rib on its inner surface extending into said defined area adjacent its outer edge, said rib forming a support for a displayed article.

5. The frame of claim 1, wherein said sides of each of said opposed pairs of sides are parallel to one another.

6. The frame of claim 1, wherein each side of each of said opposed pairs of frame sides are curved.

7. A framed article comprising, in combination, a display frame comprising an annular body defining a display opening, said body including at least two opposed side sections of hollow channel-shape cross-section, each said side section comprising an outer peripheral wall portion of resilient flexi-bility and an inner wall portion connected to said peripheral wall portion in spaced relation thereto and of lesser height than said peripheral wall portion; an article supported on corresponding edges of said inner wall portions; a backing board supported over said article and means integral with said peripheral wall portion of each said opposed side sections guiding the marginal edge portions of said backing board into said frame and retaining the same in position over said article.

8. The framed article of claim 7, wherein said means engaging the marginal edge portions of said backing board comprises a projection on each of said peripheral wall portion adjacent its outer edge, each said projection having a face sloping inwardly into said opening in

the direction of said article supporting means, said sloping face being of uniform height and tapering from the center of the connected wall portion toward each end thereof and terminating adjacent each said end, the inner edge of said face engaging against a marginal edge portion of the backing board.

9. The framed article of claim 7, wherein said frame is molded in unitary structure of a synthetic plastic material and said projections are each formed with a flat inner face normal to said peripheral wall portion, said faces overlying the marginal edge portions of said backing board.

10. The framed article of claim 7, wherein said inner wall portions of said frame are each formed with a rib adjacent its outer end, extending into said opening and parallel to said outer end thereof, said ribs supporting said article.

11. The framed article of claim 10, wherein an intermediate backing board is disposed on said article between said article and said backing board.

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