Feb. 15, 1966 H. E. GRAHAM 3,235,218

ARTICLE-DISPLAY BOARD

Filed March 30, 1964

FIG. 1.

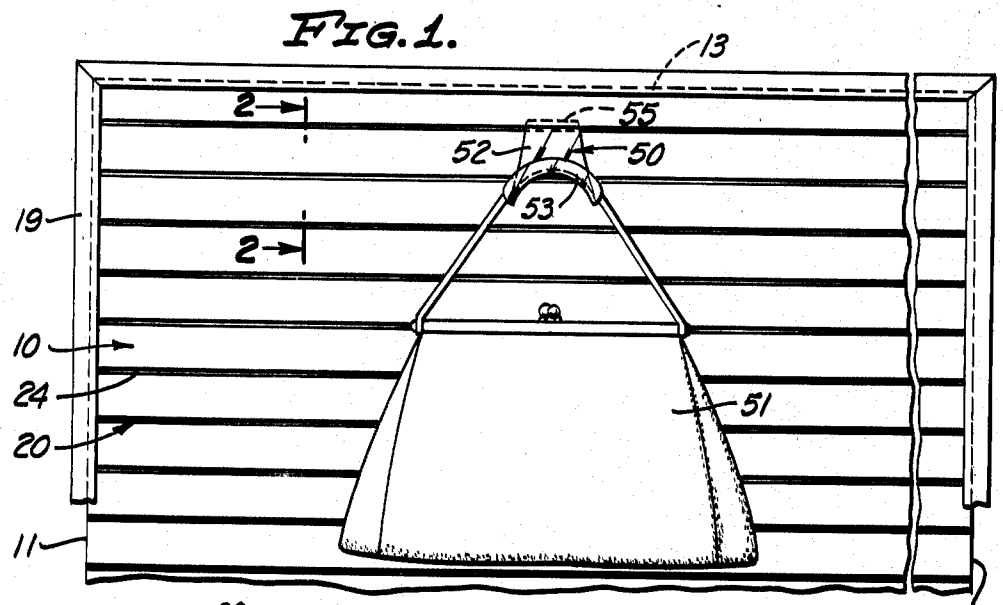


FIG. 2.

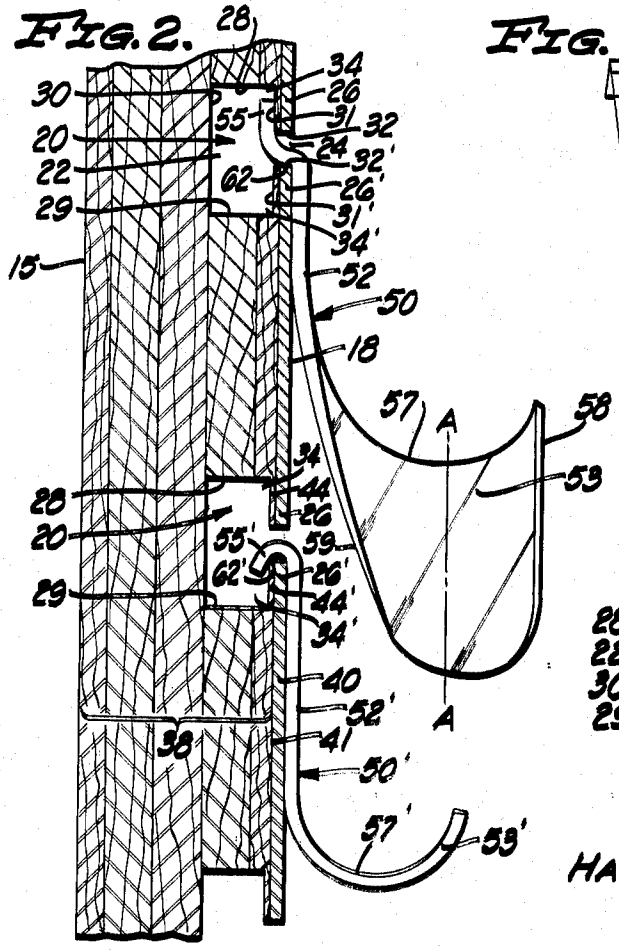


FIG. 3.

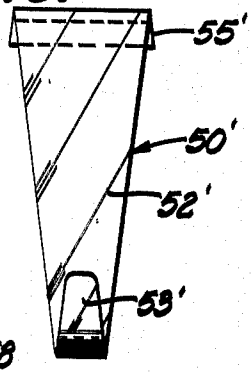
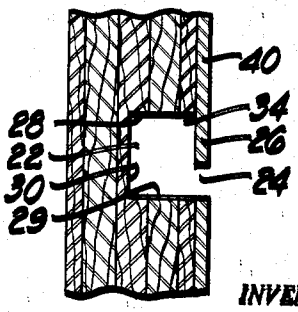


FIG. 4.



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ARTICLE-DISPLAY BOARD

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17 Claims. (Cl. 248—225)

My invention relates to display boards or panels and more particularly to an article-display board for hanging salable merchandise, household articles or other items for display or utilitarian purposes. It serves purposes similar to those of the well known apertured panel of the Peg Board type but is a distinct improvement thereon.

Such an apertured panel is composed of a thin sheet of material perforated in a uniform pattern to provide hook-receiving openings permitting insertion of hook members to hold articles for various purposes. It must be mounted out of contact with any rear panel to give space for the hooks. The hook locations are limited to the positions of the openings.

It is an object of the present invention to provide a display board adapted to receive article hangers at an infinite number of positions at each of a plurality of levels whereby an article hanger can be shifted to reside at any position along a selected horizontal line. Articles supported by the hangers can thus be precisely horizontally spaced.

A further object is to provide a display board having a large number of horizontal equally-spaced internal raceways respectively at corresponding levels, the raceways being partially closed by lips bounding narrow mouths each of a height less than the height of the raceway on which it opens. Each raceway and its corresponding mouth forms a hanger-receiving channel of uniform cross-section throughout its length. Each such channel preferably extends throughout the space between opposed sides of the display board with the opposed ends of the channel respectively opening thereon. The mouths may be at or near the upper or lower sides of the corresponding raceway or near the center thereof. Each lip forms with a wall of the raceway a pocket adapted to receive the upper support portion of a hanger. It is an object of the invention to provide an article-display board having one or more of such features of construction or function.

The display board is usually wood, typically plywood, or formed of a wood product. In one embodiment of the invention it is an object to cut the aforesaid raceways and mouths in such a board from side to side thereof by use of a suitable cutter or cutters.

A further object of the invention is to provide a display board of laminated construction in which the raceways are within a base member and in which a plurality of horizontal face strips are adhered to the front surface thereof in such relation to form lips and mouths for the raceways, each lip being formed either by a cantilevered edge portion of a face strip or by a combination thereof with an adhered sub-lip of the base member. The invention will be exemplified as incorporated in a plywood base member to the front surface of which is laminated a sheet or strips of a high pressure laminate such as Formica, Micarta or other plastic material of desired color, finish and design or any harder material such as metal with a suitable finish.

A further object of the invention is to display articles from any of the aforesaid display boards while hanging on hangers coacting uniquely with the hanger-receiving channels and the component raceways and mouths thereof. In this connection it is an object to form hangers that are laterally stable against swinging and that are not readily released by accidental contact with the hanger or the article hanging therefrom. A further object is to provide hangers made of plastic material, often of clear

or translucent plastic, which blend with or transmit the pattern of the display board so as not to distract from the article being displayed. Another object is to provide hangers with broad article-supporting hooks at their lower ends and support portions at their upper ends adapted to extend into the hanger-receiving channels of the display board.

An important object of the invention is to provide a display board that is attractive and highly decorative. The invention provides the appearance of a continuous panel traversed by horizontal lines tending to make the panel look longer horizontally and shorter vertically. The lines are formed by the aforesaid mouths and are accentuated and darkened by ambient-light-created shadows or by the darkness of the raceways on which they open. Portions or all of a wall can be faced with the display board of the invention to produce an aesthetically desirable and functional wall covering. The display board is sufficiently strong and rigid to be useful as the sole wall covering applied directly to studs or wall framing if this is desired.

Further objects and advantages of the invention will be apparent to those skilled in the art from the following description of exemplary embodiments.

Referring to the drawing:

FIG. 1 is an elevational or face view of the invention, partially broken away;

FIG. 2 is an enlarged sectional view taken along the line 2—2 of FIG. 1, showing two types of hangers;

FIG. 3 is a elevational view of the lower hanger of FIG. 2; and

FIG. 4 is an enlarged sectional view similar to FIG. 2 showing an alternative form of the invention.

As best shown in FIGS. 1 and 2, the article-hanging display structure includes an article-display board **10** of right quadrilateral shape, typically square or rectangular, having opposed side edges **11** and **12**, a horizontal top edge **13**, a parallel bottom edge, a rear mounting surface **15** and a front display surface **18**. One or more of the article-display boards **10** may be attached to or hung in front of an existing wall or may be secured directly to the studs or other wall framing. They may be mounted with their edges in contact or separated by strips or wall sections. A suitable frame **19** may surround one or several of the display boards.

The article-display board **10** is characterized by a large number of horizontal hanger-receiving channels **20** cut therein, preferably equally-spaced, these channels preferably extending throughout the space between the opposed side edges **11** and **12** and having opposed ends respectively opening thereon. Each hanger-receiving channel **20** is of uniform cross-section throughout its length and is formed of an internal raceway **22** cut into the material of the display board with narrow mouths **24** opening thereon and on the front surface **18**. Bounding the mouths **24** are lips **26** partially closing the corresponding raceways **22**.

Each raceway **22** may be of any desired cross-sectional shape, being exemplified as quadrilateral with one end wall forming a top wall **28** and another end wall forming a bottom wall **29**, such walls being joined by a base wall **30**. Each lip provides an inwardly facing wall, shown as an inner face **31** determining the forward boundary of the raceway, the lip extending partially thereacross in cantilever fashion and terminating in an edge **32** bounding the corresponding mouth **24**.

Each lip **26** may depend below the top wall **28** of the raceway with its inner face **31** meeting such top wall at an angle and forming therewith a pocket **34** (FIGS. 2 and 4) adapted to receive the upper support portion of a hanger to be described. Alternatively, each lip may rise

above the bottom wall 29 with its inner face 31' forming therewith a pocket 34' (FIG. 2), such an upstanding lip being designated by the numeral 26' for purpose of later reference. In the preferred embodiment of FIG. 2 both depending lips 26 and upstanding lips 26' are employed to permit reception of two types of hangers, to be described. Each mouth 24 will then be bounded by the edges 32, 32' of the two lips.

The display board 10 usually comprises a wood-product board, exemplified as a sheet of 5-ply plywood. The raceways 22 and mouths 24 can be cut separately or simultaneously therein the front ply then forming the face sheets providing the lips 26 and/or 26'. The embodiment of FIG. 2 offers the advantage that each raceway 22 can be formed by a toothed rotary undercutter with the mouth 24 being earlier cut by a saw blade or cut simultaneously with the raceway by a toothed shank of the rotary cutter. All of the hanger-receiving channels 20 may be cut simultaneously by use of a bank of such rotary cutters.

It is often desirable however to provide a display board of the face-laminated type. Thus FIG. 2 shows a plywood base member 38 faced with face strips 40 of a high pressure laminate or other harder or hard-surfaced material stronger than the ply therebeneath and adhered thereto to form the front surface 41 of the plywood. The display board can be formed of a laminated panel composed of the base member 38 to which a face sheet is adhered, in which event the cutting of the hanger-receiving channels 20 will form the strips 40. If such surface carries a design or pattern this will then continue on opposite sides of the mouth 24. Alternatively these strips can be precut or molded and then adhered to the front surface 41 in proper relation with the raceways 22.

With a laminated-type display board the strips themselves can form the aforesaid lips. For example in FIG. 4 the lower portion of a strip 40 depends across the top portion of the raceway 22 forming with the top wall 28 thereof the pocket 34 and having a lower edge forming with the upper edge of the next lower strip the mouth 24. In other instances, as in FIG. 2, each lip may be formed in part by the strip 40 and in part by a sub-lip 44 or 44' that is a part of the base member 38.

Each hanger-receiving channel is adapted to receive and support one or more hangers 50 at any selected position along its length. The hanger shown in FIG. 1 and at the top in FIG. 2 is particularly effective in supporting handbags 51 or other bail-equipped items. Each hanger 50 has a tapered body portion 52 with a lower article-supporting portion 53 at its lower end and an upper support portion at its upper end including a tongue portion 55 offset from the body portion about the thickness of the lip 26 and sized to pass through the mouth 24 into the pocket 34 or 34'.

The lower article-supporting portion may be a hook, preferably having a saddle-like support face 57 supporting the bail of the handbag 51 or similar article in a smooth broad curve. The central plane A—A of the saddle may conveniently be of a radius of about ¾ to 1½ inches. The support face flares outwardly and forwardly to a curved front edge 58 of larger radius and sweeps upwardly and rearwardly less sharply to the body portion 52 while narrowing laterally to conform to the taper of the body portion 52. The central plane A—A of the saddle is desirably set forward a substantial distance, often an inch or more, from the front surface 18, leaving a rather tall downwardly-open space between a rear edge 59 and this front surface. Above this the body portion 52 is substantially flat and forms a flat pressure surface that lies against the front surface 18 and pressurally engages same when a load is hung on the article-supporting portion 53.

The upper support portion of this hanger 50 extends upward and jogs rearwardly so that the tongue portion 55 can slip through the mouth 24 when the saddle is displaced forwardly and hook behind the upper lip 26 to engage the inner face 31 when the saddle settles to its position shown. In this position the weight of the hanger and any article supported thereby is carried largely by the edge 32' of the lower lip 26' due to engagement therewith of a shoulder 62 formed by the offset. However some of the weight is supported by the friction induced by the face-to-face engagement of the rear face of the body portion 52 and the front surface 18, the friction increasing as the hung weight increases. By slightly pulling forward on the saddle portion the hanger can be slid to any position along the hanger-receiving channel. By pulling the saddle further forward the upper support portion and the tongue portion 55 can be displaced from the channel and inserted into a channel at another level.

The alternative hanger 50' shown in FIG. 3 and the lower half of FIG. 2 is of slightly different construction. Its body portion 52' tapers downwardly, this taper being shown as continuing through the lower article-supporting portion 53' and the upper support portion and its tongue portion 55'. This type of hanger can be bent from a strip of material. Its saddle or hook portion is not as broad as described above and is useful in hanging articles having a hole therein or notch that is formed by an eyelet or support element attached to the article. The tongue portion 55' here is likewise offset from the body portion 52' a distance equal or greater than the lip thickness. However here the tongue portion 55' extends generally downward to hook over the lip 26' and lie in the pocket 34' therebehind. The height of the tongue portion 55' is here such as to be moved laterally through the mouth 24. The weight is again carried largely by the edge 32' of the lip 26', the undersurface of the offset or hook here forming the shoulder 62'.

With either type of hanger the upper support portion or the shoulder 62 or 62' are of substantial length measured parallel to the channels 20. This gives lateral stability to the hanger. It is often desirable that the length of interengagement between the lip and such shoulder be at least 1" and preferably about 1½" or up to 2". Either type of hanger can be made of any suitable material but I prefer to mold or form each hanger of a transparent or translucent plastic material so as to be unobtrusive and transmit therethrough the surface pattern and mouth pattern of the front surface 18.

Convenience, utility and appearance will determine the spacing of the mouths 24 from each other. Equal spacing is preferred, often substantially equal to or less than the height of the hangers. As an example of a typical display board, these mouths 24 may be spaced 1½" on centers with each raceway 22 of the FIG. 2 type being of a height of about ⅜–½" and of a depth perpendicular to the bottom wall 30 of about ¼", each lip being of a height of about ¼" and each mouth 24 of a vertical width of about ⅛" or slightly more. The heights of the raceways of the FIG. 4 type will be correspondingly less. Overall thicknesses of the display boards will commonly be about ½–¾". It should be understood however that the invention is not limited to these dimensions or proportions. The overhanging lips need only be of such height as to retain the tongue portion of the hanger therebehind and the depth of each raceway needs be only such as to accommodate such tongue portions during insertion or when in place. The pockets 34 and 34' are desirably formed by top or bottom walls of the raceway that meet the inner faces of the lips at an angle but this angle is not necessarily a right angle nor is it essential that the inner face of each lip be exactly vertical.

Various changes and modifications can be made without departing from the spirit of the invention as defined in the appended claims.

I claim:

1. An article-hanging display structure including in combination:

a right quadrilateral article-display wall board com-

prising a sheet of plywood having top, bottom and opposed side edges, a rear mounting surface and a patterned front surface formed by the front ply of said plywood sheet;

a plurality of horizontal uniformly-spaced hanger-receiving channels in said wall board extending between and having opposed ends opening on said opposed side edges, each hanger-receiving channel being of uniform cross section throughout its length and being composed of a raceway rearward of said front surface and a narrow mouth of a height less than the height of the raceway measured between top and bottom walls thereof, said mouth opening on said raceway and on said front surface, each mouth being bounded by a thin depending lip forming with the top wall of said raceway a pocket above said mouth extending throughout the length of the hanger-receiving channel; and

a hanger having a body portion, an article-supporting portion at its lower end, and a single upper support portion at its upper end, said support portion including an upward extending tongue portion rearwardly offset from said body portion a distance substantially equal to the thickness of said lip, said tongue portion being sized to pass through said narrow mouth into said pocket when said article-supporting portion of said hanger is swung forwardly and to hook behind said lip when said article-supporting portion is swung rearwardly and downwardly to an article-supporting position, the end of said tongue portion swinging forwardly in said pocket during such rearward swinging to engage the rear of said depending lip, the depth of said raceway measured perpendicular to said front ply being sufficient to provide space for said tongue portion during said swinging thereof, said tongue portion being of a width measured parallel to said mouth many times its thickness which thickness is only slightly less than the height of the corresponding mouth, the height of the mouth being only slightly greater than the thickness of said thin depending lip.

2. A laminated article-display wall board comprising:

a quadrilateral relatively-thick wood-product base member having front and rear surfaces, opposed side edges and a plurality of parallel horizontal raceways cut into said wood product inwardly of said front surface between said front and rear surfaces with the ends of said raceways opening on said opposite side edges, the center-to-center spacing of said raceways being uniform, each raceway being of uniform cross-sectional shape throughout its length, each raceway providing a forwardly facing wood-product base wall and a wood product end wall facing toward the central axis of said raceway, said end and base walls extending throughout the length of the raceway between said side edges of said base member, and

a plurality of thin horizontal face strips adhered to the front surface of said base member, each face strip having upper and lower edge portions terminating in upper and lower edges, each strip being of sufficient vertical height between its said edges to bridge between and cover said front surface between two adjoining raceways with one of its edges disposed opposite one of the two raceways and its other edge and the corresponding edge portion projecting beyond the end wall of the other of the two raceways in a direction parallel to said front surface and providing a cantilevered lip partially closing said other of said two raceways, there being a pocket along each raceway between its projecting lip and its base wall with each pocket being bounded vertically by the end wall of such raceway, such pocket being bounded forwardly by a rearwardly facing wall at the rear of said cantilevered lip, at least a portion of said rearwardly facing wall extending at an angle with respect to said end wall to form a forward corner of said pocket, each pocket being adapted to receive the upper support portion of a hanger member, said portion projecting beyond the end wall of the raceway a distance that is a large fraction of the height of such raceway, the edges of adjacent face strips being spaced from each other opposite a corresponding raceway to form a narrow mouth therefor.

3. A laminated article-display wall board as defined in claim 2 in which said end wall of each raceway is an upper end wall, and in which said projecting edge portion of each face strip is the lower edge portion thereof and depends below said upper end wall a distance in the neighborhood of one-half the height of the corresponding raceway.

4. A laminated article-display wall board as defined in claim 3 in which each raceway has also a bottom wall, and in which the upper edge of each face strip is substantially at the same level as the bottom wall of the corresponding raceway.

5. A laminated article-display wall board as defined in claim 3 in which said rearwardly facing wall is an inner face of a corresponding face strip forming the forward boundary of the pocket, said inner face being substantially parallel to said front surface of said base member substantially to said end wall, said forward corner of said pocket being a relatively sharp corner.

6. A laminated article-display wall board as defined in claim 3 in which said base member has a wood-product sub-lip integral therewih underlying said projecting edge portion of said face strip, said rearwardly facing wall being an inner face of said underlying sub-lip.

7. A laminated article-display wall board as defined in claim 3 in which said pocket is an upper pocket, in which each raceway has also a lower end wall, and in which each face strip is of a vertical height only slightly less than the center-to-center spacing of said raceways, the upper edge portion of each face strip projecting upward beyond said lower end wall of the corresponding raceway to form a lower pocket back of such upward projecting edge portion.

8. A laminated article-display wall board as defined in claim 7 in which said upper and lower pockets are respectively bounded forwardly by inner faces of said projecting edge portions of said face strips with the inner faces of a face strip forming the forward boundaries of corresponding pockets of adjoining raceways.

9. A laminated article-display wall board as defined in claim 7 in which said base member has two sub-lips integral therewith respectively underlying the projecting edge portions of the two face strips forming the two pockets of a raceway, the rearwardly facing wall of each pocket being an inner face of one of such underlying sub-lips and forming the forward boundary of a corresponding pocket.

10. A laminated article-display wall board as defined in claim 2 in which said base member is a sheet of plywood with at least a portion of its forward ply forming each of said face strips.

11. A laminated article-display wall board as defined in claim 2 in which said base member is formed of wood and said face strips are formed of a high pressure laminate, each projecting edge portion being formed at least in part of said high pressure laminate.

12. A laminated article-display wall board as defined in claim 2 in which said base member is formed of plywood and said face strips are formed of a high pressure laminate, each projecting edge portion and the lip formed thereby being formed compositely of said high pressure laminate and an underlying wood sub-lip that is an integral part of the foremost wood ply immediately rearward of said high pressure laminate, the rearwardly facing wall of the pocket being an inner face of said wood sub-lip.

13. As an article of manufacture, an article display board formed of a quadrilateral sheet of plywood having

a front ply having a patterned front display surface and other plies rearwardly thereof adhered together and to said front ply, said quadrilateral sheet having opposed sides providing opposed side edges, a plurality of parallel undercut raceways of uniform cross section at all positions between the ends thereof cut in said other plies from side to side of said quadrilateral sheet with opposed ends of each raceway opening on the opposed side edges thereof and with each raceway providing a mouth parallel thereto coextensive in length therewith opening centrally thereon cut through said front ply to provide rearward of said front ply two pockets throughout the length of each raceway respectively on opposite sides of the mouth of the raceway, each raceway being bounded by wood walls of said other plies, each raceway and its mouth providing a channel substantially T-shaped in cross section with the pockets constituting the arms of the T and the mouth constituting the stem of the T, those portions of said front ply between said mouths constituting face strips with edges thereof respectively bounding the mouths of adjoining channels, the pattern of said front display surface of said front ply continuing on opposite sides of said mouths.

14. An article-hanging display structure adapted to support an article at any one of an infinite number of positions at each of a plurality of levels including in combination:

an upright laminated quadrilateral article-display wall board having top, bottom and opposed side edges, a rear mounting surface, and a front surface formed by a front ply of said wall board forward of rear plies thereof, a plurality of horizontal uniformly-spaced hanger-receiving channels in said wall board at said plurality of levels, said channels extending between and having opposed ends opening on said opposed side edges, each hanger-receiver channel being of uniform cross section throughout its length and being composed of (a) a raceway cut into said rear plies at a location rearward of said front surface having a forwardly facing base wall and upper and lower end walls facing respectively downward and upward toward the axis of said raceway and (b) a narrow mouth opening rearwardly on said raceway below its upper end wall and forwardly on said front surface with said narrow mouth being bounded upwardly and downwardly by lower and upper edges of said front ply, there being a depending lip formed at least in part by a depending portion of said front ply depending partially across said raceway and providing said mouth-bounding lower edge, said depending lip having an inner face at least a portion of which is substantially parallel to said front surface, said inner face forming with said top wall and said base wall of said raceway an upper pocket extending above the axis of the raceway a distance that is a large fraction of the height of said raceway between the upper and lower end walls thereof; and

at least one hanger member having a body portion, an article-supporting portion at the lower end of said body portion and a single hanger-support portion at the upper end of said body portion constituting the sole means for attaching said hanger member to said article-display board and the sole means providing lateral stability to the hanger member against lateral swinging, said hanger-support portion consisting of a single upward extending tongue and an offset portion connecting said tongue and said body portion, said tongue being of a thickness to pass through said narrow mouth upward into said pocket to hook behind and engage the inner face of said lip, said offset portion having a lower shoulder elongated in a direction parallel to the mouth of a corresponding channel and resting on the corresponding lower mouth-bounding edge, said tongue being of a width measured along said lower shoulder several times the thickness of said tongue and several times the height of said narrow mouth to provide lateral stability to said hanger member against swinging, said tongue being offset rearwardly from said body portion a distance substantially equal to the thickness of said lip.

15. An article-hanging display structure as defined in claim 14 in which the mouth-bounding edges of said front ply are at substantially right angles to the front face of said front ply and form therewith front sharp corners at the top and bottom of each mouth, the junction of said offset and base portions forming a relatively sharp-cornered pocket receiving the sharp corner at the bottom of a corresponding mouth, such sharp-cornered pocket having an upper wall constituting said lower shoulder of said offset portion.

16. An article-hanging display structure as defined in claim 14 in which the length of said lower shoulder measured parallel to the mouth of a corresponding passage is at least about one inch, and in which the body portion of said hanger provides a rear flat pressure surface pressurally engaging the front face of the underlying front ply when a load is hung on said article-supporting portion of said hanger member.

17. An article-hanging display structure as defined in claim 14 in which said hanger member is formed of transparent plastic material, said article-supporting portion being a hook portion having a saddle portion terminating in an upturned front edge, said saddle portion being near the level of the mouth next below that into which said tongue extends.

References Cited by the Examiner

UNITED STATES PATENTS

28,174	5/1860	Hochstrasser	248—215
254,333	2/1882	Kane	248—68
683,248	9/1901	Chase	248—307
1,140,940	5/1915	Bales	248—243
1,220,021	3/1917	Smyrk	20—74
1,705,691	3/1929	Vaupel	248—63
1,800,386	4/1931	Hoffman	248—307
1,852,598	5/1932	Vogt	248—224
1,856,847	5/1932	Gates	248—226
2,078,424	4/1937	Stinchcomb	248—63
2,317,192	4/1943	Hopp	40—16
2,453,387	11/1948	Rundell	211—90 X
2,465,603	3/1949	Potchen	20—4
2,766,958	10/1956	Levy	248—223
2,787,435	4/1957	Shields	248—307
2,790,616	4/1957	Cardinal	248—217
2,885,538	5/1959	Malon et al.	248—50 X
2,915,267	12/1959	Kaysing	248—67.5
3,020,013	2/1962	Ochin et al.	248—28
3,045,961	7/1962	Cygan	248—223
3,112,912	12/1963	Alvarez	248—223

FOREIGN PATENTS

653,589	12/1962	Canada.
1,167,187	7/1958	France.
164,448	10/1905	Germany.
6,823	3/1902	Great Britain.
12,500	10/1886	Great Britain.
19,895	8/1909	Great Britain.
653,234	5/1951	Great Britain.

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