

United States Patent

[19]

[11] 3,883,037

Seiller

[45] May 13, 1975

[54] DISPLAY UNIT

[75] Inventor: Pierre Francois Xavier Seiller, Ain, France

[73] Assignee: Societe a Responsabilite Limitee dite: Le Presentoir Seiller, Ain, France

[22] Filed: Mar. 28, 1973

[21] Appl. No.: 345,723

[30] Foreign Application Priority Data

Mar. 30, 1972 France 72.11995
Feb. 7, 1973 France 73.05078

[52] U.S. Cl. 206/5; 206/508; 206/509; 206/520; 206/507

[51] Int. Cl. B65d 21/04

[58] Field of Search...220/97 D, 97 R, 97 C, DIG. 13, 220/23.83, 507, 508, 509, 520; 211/126, 177

[56] References Cited

UNITED STATES PATENTS

2,319,173 5/1943 Weiss 211/126

2,852,157 9/1958 Frater 220/97 D
3,685,785 8/1972 Brown 220/97 D X

Primary Examiner—George E. Lowrance

Assistant Examiner—Steven M. Pollard

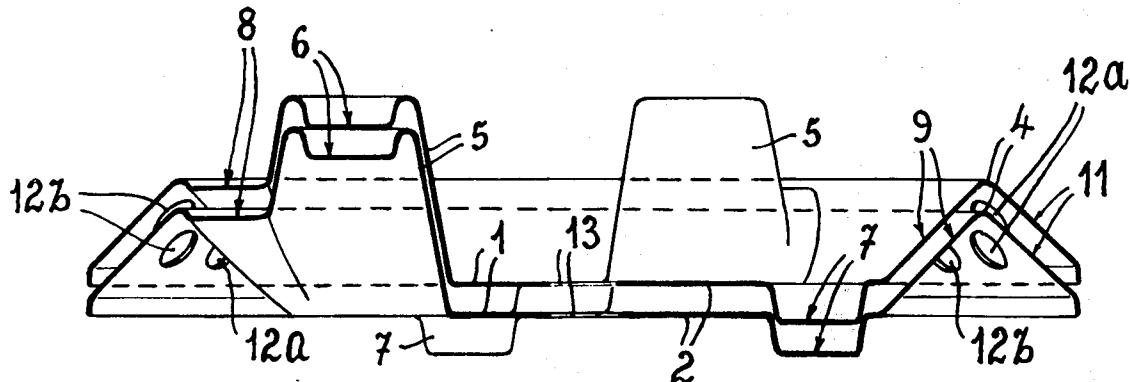
Attorney, Agent, or Firm—Karl F. Ross; Herbert Dubno

[57]

ABSTRACT

A display unit for spectacles disposed around the periphery of a plurality of circular members disposed one above the other and located by a central vertical tube. Each member has downward by (downwardly) extending hollow projections engaging in recesses formed on the top of upstanding projections on the member below, so that the members are spacedly engaged and can be rotated simultaneously. For storage each member is lifted and rotated to nest the downward projections of all the members and likewise nest the upward projections so that the unit is in a collapsed state occupying less space.

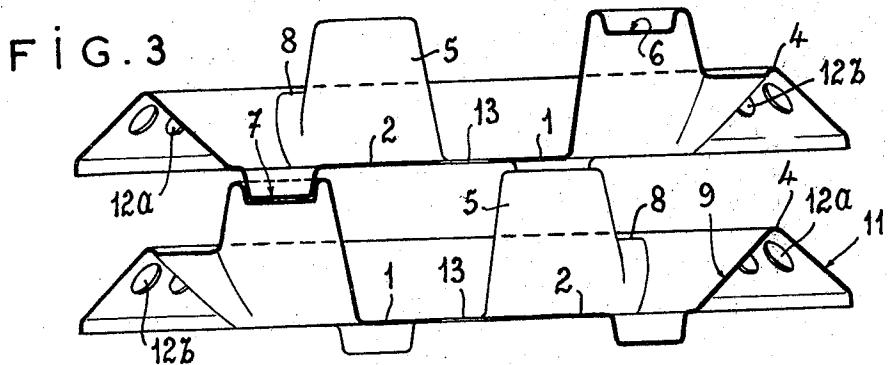
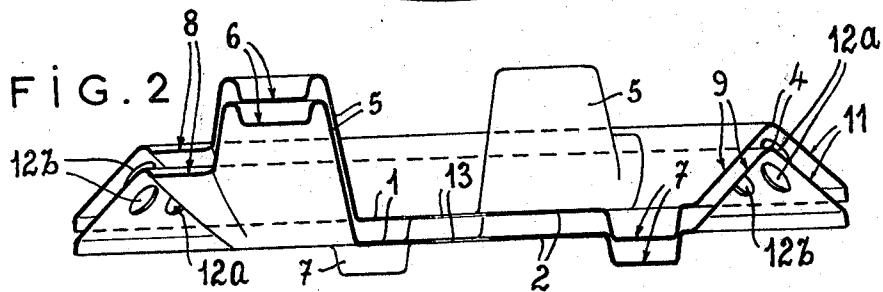
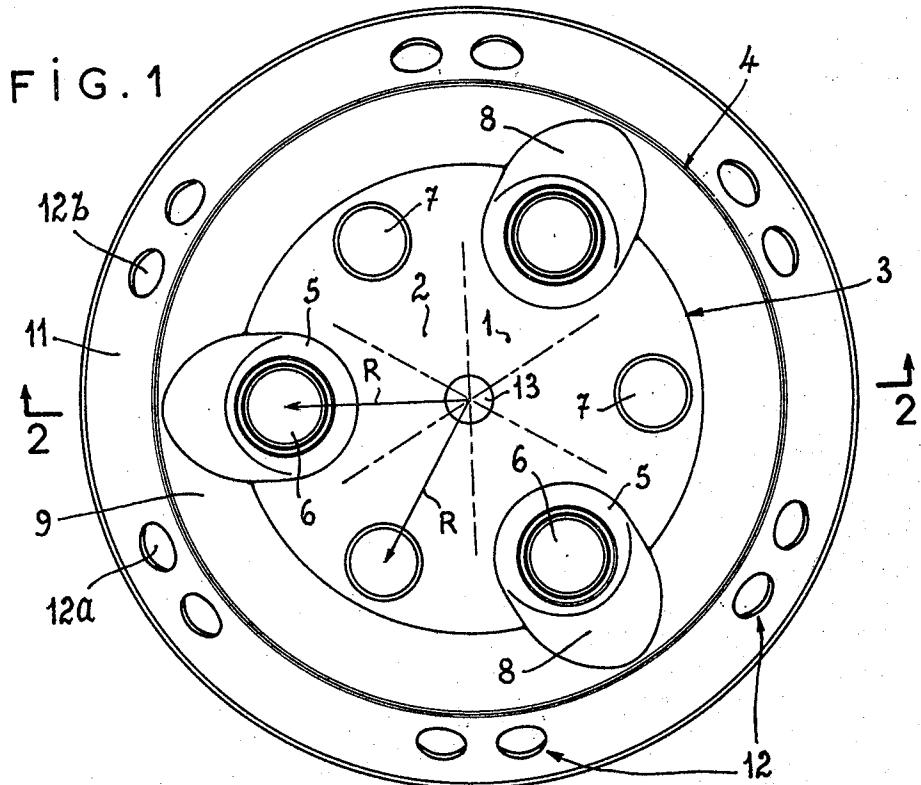
6 Claims, 9 Drawing Figures



PATENTED MAY 13 1975

3,883,037

SHEET 1 OF 4



PATENTED MAY 13 1975

3.883,037

SHEET 2 OF 4

Fig. 4

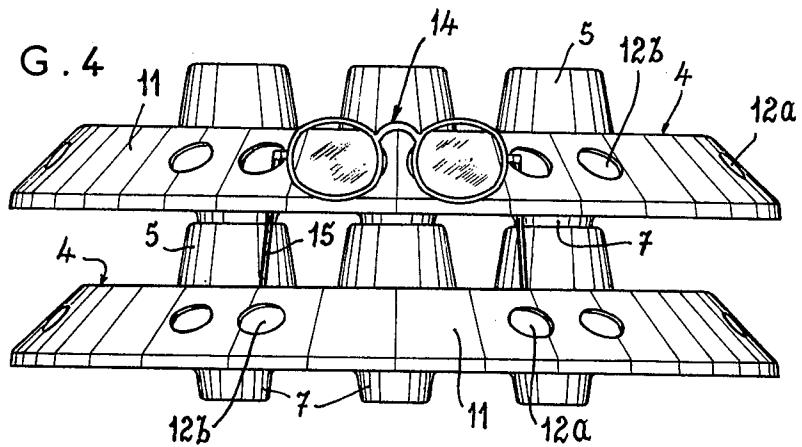
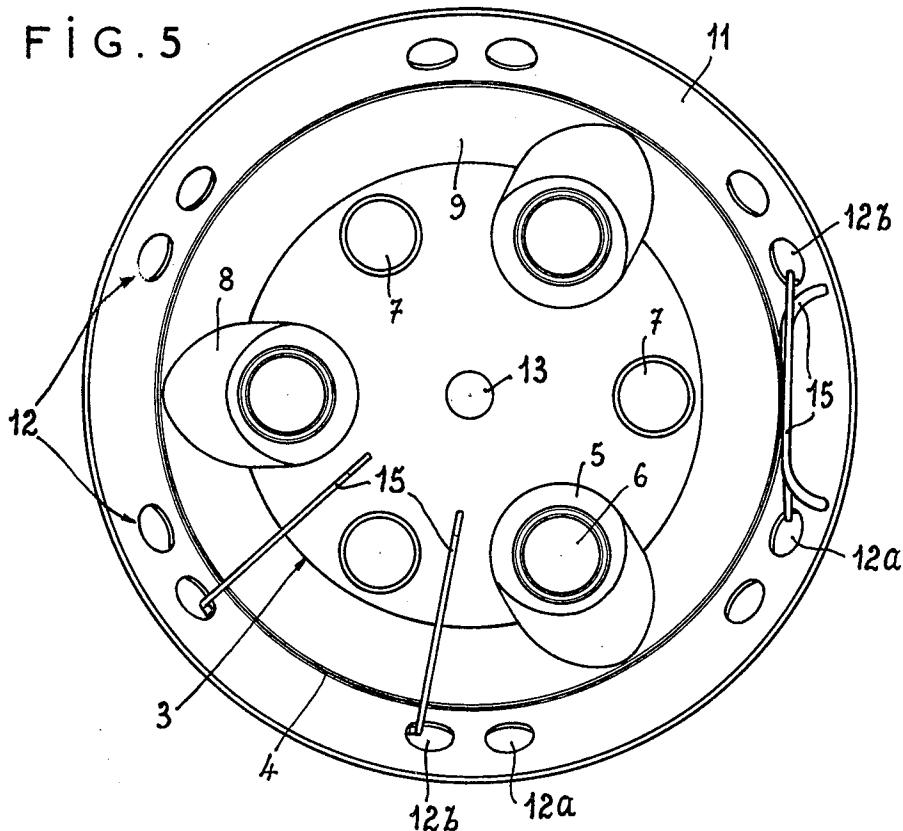


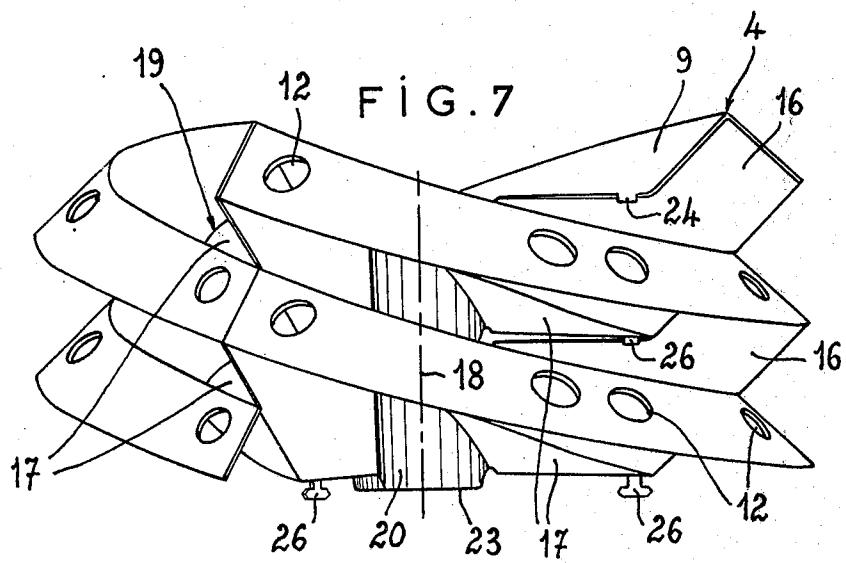
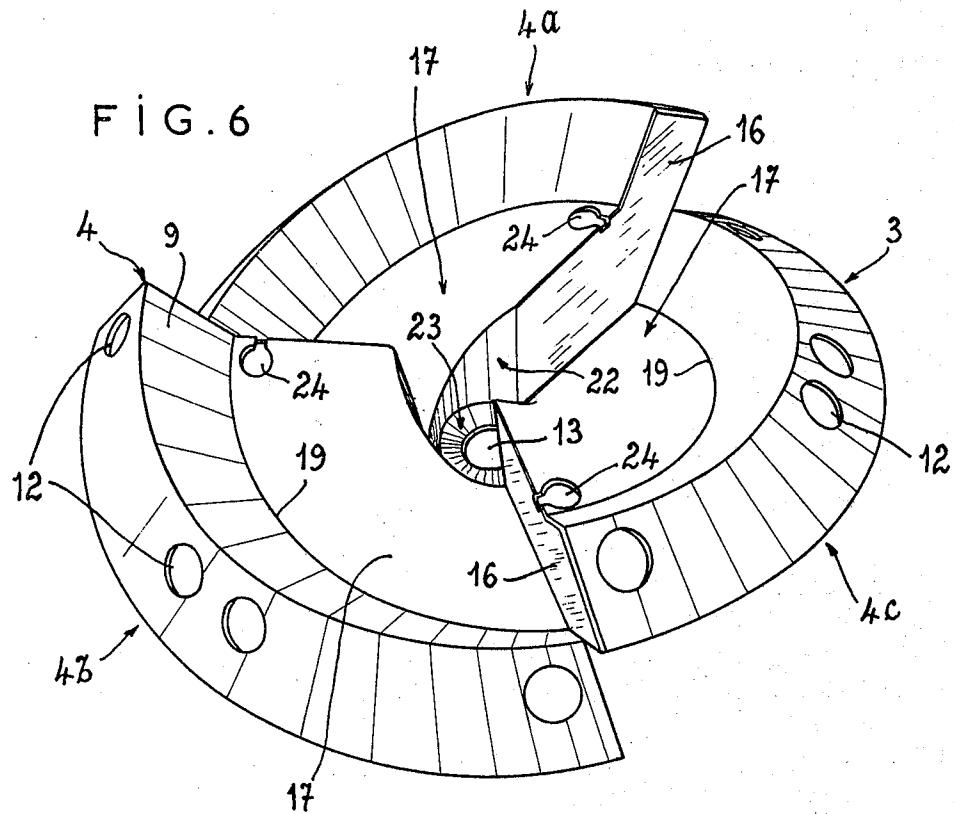
FIG. 5



PATENTED MAY 13 1975

3,883,037

SHEET 3 OF 4



PATENTED MAY 13 1975

3,883,037

SHEET 4 OF 4

FIG. 8

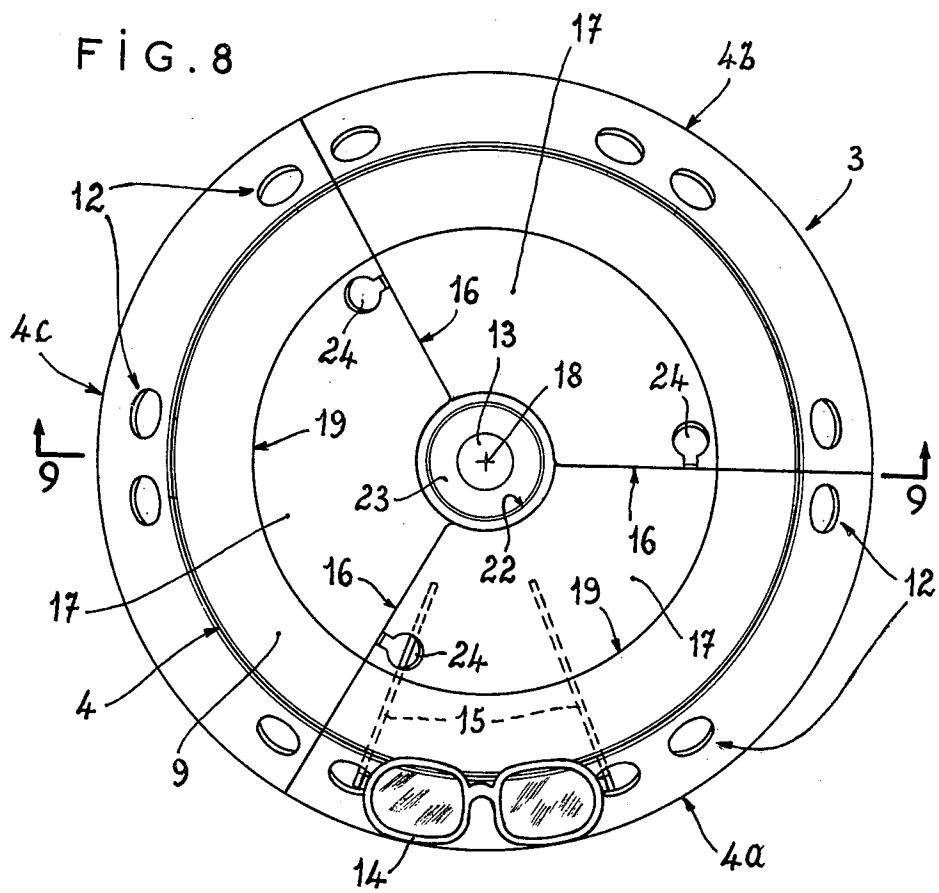
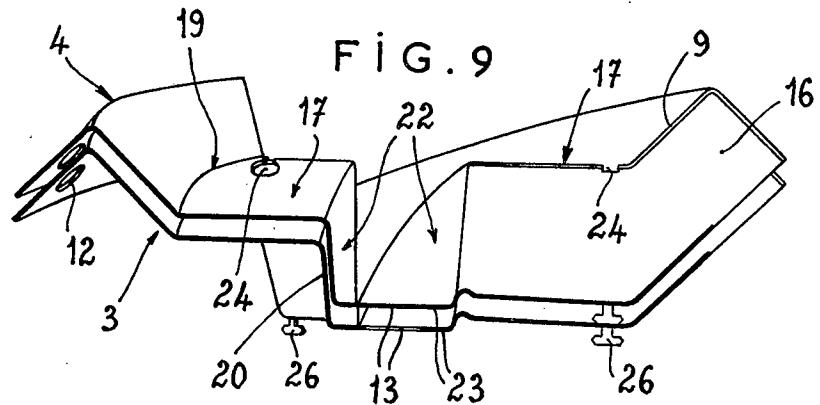


FIG. 9



1
DISPLAY UNIT

The present invention relates to a display unit.

It is known to arrange objects to be sold in shelves, show-cases or display units. Frequently, the display units are sold or offered to retailers by the manufacturers or wholesalers.

In particular, a type of display unit is known in which the objects to be displayed, of quite small dimensions, are arranged around the periphery. These display units have several drawbacks: they must either be dismantled by complicated means requiring tools or they simply cannot be dismantled and occupy considerable space when they are transported or stored. In addition, they generally have fixed dimensions which limit the locations at which they may be used. Thus, certain display units will only fit on a shop counter whereas others, due to their volume or dimensions, will only fit on the ground, most frequently in front of shelves or racks, access to which is thereby limited.

It is the object of the invention to obviate a drawback of this type.

To this end, the display unit of the invention is constituted by members which may be placed one on top of the other, means being provided for allowing a gap between each of them when the display unit is in the position for use and, by a simple relative rotation through part of a revolution, allowing them to fit one into the other thus eliminating the aforesaid gap when the display unit is in the position for storage, transportation or stacking.

In a first embodiment of this display unit, all the constituent members are identical and each of them is a disc having a uniform angular distribution and the same number of bosses and recesses, each boss being located between two recesses and at the same angular distance from each of them and having, at its upper end a cup capable of housing a recessed (recessed) portion of another member, the cups of the bosses and recesses also having their centers located on the same circle such that when the two superimposed members have the same angular position, they must be fitted into each other by introducing the bosses of the lower disc into those of the upper disc whereas to bring them into the expanded position for use of the display unit, it is sufficient to rotate one of the two discs through an angle corresponding to the angular distance separating an adjacent boss and recess and to cause the downwardly turned recessed portions of the upper disc to rest in the cups of the bosses of the lower disc.

In the particular case where these display units are used in an opticians display, each of their members comprises, at its periphery, a rim whose section is that of an inverted V, the outer skirt of which comprises several series of perforations for locating the articles to be displayed.

In a second embodiment of this display unit, all the constituent members are again of identical shape and each member has a generally circular shape and comprises, with a uniform angular distribution, a succession of helical surfaces on the same axis and having the same pitch, starting from a common plane and ending at another common plane and separated from each other by radial discs of material interconnecting these helical surfaces, the latter as well as the vertical discs being limited in the region of the axis by a disc of material defining a cavity in the shape of a truncated cone.

2

The upper part of each helical surface comprises a perforation whereas the lower part of each radial disc comprises a tenon able to be engaged in one of the perforations of the lower member, in order to bring the display unit into the expanded position for use.

According to the invention, each perforation comprises a wide part facilitating the passage of the free widened end of a tenon and a narrow part for immobilizing this tenon.

Compared with the first embodiment, this second embodiment has an additional advantage which is that of allowing interlocking of the members in the extended position for use. Indeed, in the first embodiment, the members simply rest one on top of the other and there is a risk of them leaving this position when the display unit is moved, particularly when it is lifted or even if it undergoes an impact, even though it may be slight.

In a simple arrangement of this second embodiment of the display unit according to the invention, each member comprises three helical surfaces each extending over a sector of 120°.

From the storage position, it is thus sufficient to pivot the members through 120° with respect to each other, by a screwing movement and to engage the tenons of each member in the apertures of the lower member to bring the display unit into the expanded position for use.

Advantageously, each member comprises, on its periphery and extending the helical surfaces, rims in the form of a helix having a section in the form of an inverted V, the outer skirt of which comprises several series of perforations for locating the articles to be displayed, these rims being arranged such that when the display unit is in the extended position for use, the upper end of the rims of one member is expanded exactly by the lower end of the rims of the upper member so that the different rims form continuous helixes extending from the base to the apex of the display unit.

The helical surfaces of two consecutive members are thus arranged as an extension of each other. This particular feature gives the display unit a particularly aesthetic appearance.

The members are made from a sheet of plastics material which is heat welded or molded or injected, or the members are made from pressed metal sheet.

The invention will be better understood by means of the ensuing description with reference to the accompanying diagrammatic drawing illustrating two embodiments of this display unit;

FIG. 1 is a top plan view of a first embodiment of the display unit according to the invention;

FIG. 2 is a sectional view taken along line 2—2 of FIG. 1, through two members in the stored position;

FIG. 3 is a sectional view similar to FIG. 2, but in the expanded position of use;

FIG. 4 is an elevational view of the members of FIG. 3 supporting a pair of spectacles;

FIG. 5 is a bottom view of a member of the display unit illustrated in FIGS. 1 to 4, supporting two pairs of spectacles;

FIG. 6 is a perspective view of a member of a second embodiment of the display unit according to the invention;

FIG. 7 is an elevational view of two members identical to that of FIG. 6, in the expanded position of use;

FIG. 8 is a top plan view of the member of FIG. 6, supporting a pair of spectacles; and

FIG. 9 is a sectional view taken along line 9—9 of FIG. 8 through two members in the stored position.

The members of the display unit according to the invention, shown in FIGS. 1 to 5 are constituted by a thin disc 3, comprising six equal sectors. These sectors have two different shapes depending on whether they are sectors of even order 1 or uneven order 2. The disc 3 is bordered by a rim 4 which is intended to receive objects to be displayed for sale.

The sectors of even order 1 each comprise on their axis, substantially tangential to their circular end and perpendicularly thereto, a hollow boss 5 whose shape is substantially that of a truncated cone (frustocone), resting on the sector 1 by its large base. The cylindrical face of a hollow channel 8 of semi-cylindrical shape is radial and projects from the upper face of the sector 1. Its diameter is substantially equal to that of the large base of the boss 5. It connects the boss 5 to the rim 4. The small base of the boss 5 comprises a cup 6. The depth of the cups is less than the height of the boss 5 as may be seen from FIGS. 2 and 3.

The projection of these cups 6 in the plane of the disc 3 is such that their centers are spaced from the center of the disc 3 by a distance R, this centre corresponding to the vertex of the sector 1. The sectors 2 of uneven order each comprise on their axis, projecting from their lower face, a cup 7 whose center is at a distance R from the vertex. The outer diameter of the cups 7 is substantially equal to the inner diameter of the cups 6. The depth of the cups 6 and 7 is substantially equal.

The rim 4 has a section in the shape of an inverted V. The side 9 of this V, turned towards the centre of the disc 3, is connected to the latter by its free end. The skirt 11 of this V facing outwardly of the member comprises six pairs of holes 12 intended to receive pairs of spectacles. The height of the V is substantially equal to the height of the channel 8.

At its center, the disc 3 comprises a circular hole 13 capable of receiving a cylindrical tube of the type currently used for the frames of shop display units.

There are two possible assembly positions for the members aforescribed: In the stored position, as shown in FIG. 2, which is used for the stacking and transportation of members when they are not in use, and the expanded position of use, as shown in FIG. 3, which is used for the presentation of articles intended to be displayed and/or sold.

The storage position is obtained by juxtaposing the members, taking care that the even sectors 1 and uneven sectors 2 correspond to each other. Thus, all shapes of the sectors 1 and 2, made from a thin disc, fit into each other.

The position of use is obtained by juxtaposing the members thus making the even sectors 1 correspond with the uneven sectors of the adjacent members. Consequently, the lower side of the cups 7 fits into the upper side of the cups 6, these three fittings vertically space two adjacent members with respect to each other. By multiplying the number of members, a stack is produced which makes it possible to display the desired number of articles. By passing a tube through the holes 13 of the display unit, which tube acts as a pole integral with a stand, it is possible to rotate the arrangement of members in order to be able to examine the pairs of spectacles 14 displayed.

The pairs of spectacles are displayed as shown in FIGS. 4 and 5. The sides 15 of a pair of spectacles are passed through holes 12a, 12b of the rim 4. These sides rest either on the upper face of the member located just below the member receiving the pair of spectacles or, if the member is the lowest member of a stack placed on a flat surface, the sides of the spectacles, folded back, rest on this flat surface.

FIGS. 6 to 9 show a second embodiment of the same display unit according to the invention, the members of which, constituted by a disc of thin material 3, of generally circular shape, have three equal sectors, of the same shape, separated by radial discs of material 16 staggered angularly through 120° with respect to each other. The disc 3 is bordered by a rim 4 intended to receive the objects to be displayed for sale.

Each sector comprises a helical surface 17 which connects the base of a radial disc 16 to the apex of another radial disc 16 such that by going round the member, there is a succession of helical surfaces 17, separated from each other by radial discs 16. All the helical surfaces 17 have the same axis 18, which is the axis of the member and they all have the same pitch. They all start from the same plane, perpendicular to the axis 18 and end in another common plane perpendicular to the axis 18.

The rim 4 has a section in the form of an inverted V. The side 9 of this V turned towards the centre of the member is connected by its free end to the various helical surfaces 17, along helical lines 19.

In fact, the rim 4 is composed of three sections 4a, 4b, and 4c corresponding to the three helical surfaces 17. Each section comprises two pairs of holes 12 intended to receive pairs of spectacles.

At its centre, the disc 3 comprises a circular hole 13 capable of receiving a cylindrical tube, of the type currently used for the frames of shop display units. In the region of the axis 18, the helical surfaces 17 and the radial discs or walls 16 are limited by a disc of material 20 defining a cavity 22 whose shape is that of a truncated cone and in the base 23 of which is provided the aforesaid circular hole 13.

The upper part of each helical surface 17 comprises a perforation 24, whereas the lower part of each radial disc 16 comprises a tenon 26 capable of being engaged in one of the perforations 24 of the lower member.

As in the first embodiment, the members which have just been described may be assembled in two different ways: In the position of storage, as shown in FIG. 9 and in the expanded position, as shown in FIG. 7.

The position for storage is obtained by juxtaposing the members, making the sectors correspond and fitting the member into each other; the gap between the two members is thus very small.

The position for use is obtained by connecting the members, by simply superimposing the sectors. The connection is produced by the engagement of three tenons 26, in the shape of T of one member, in the three perforations 24 of the lower member; the widened head of the tenons 26 is introduced through the wide part of the perforations 24, then immobilized in their narrow part. It is sufficient to pivot the members through 120° with respect to each other, by a screwing movement, to change from the position for storage to the position of use.

By multiplying the number of members, a stack is produced which makes it possible to display the desired

number of articles. The rims 4a, 4b and 4c are arranged such that when the display unit is in the extended position for use, the upper end of the rims of one member is extended by the lower end of the rims of the upper member. Thus, the various rims succeed each other and form three continuous helixes extending from the base to the apex of the display unit.

The pairs of spectacles displayed 14 are arranged as shown in FIG. 8. The sides 15 are passed through two holes 12 in the rim 4 and rest on the upper side of the member located there below.

The display units according to the invention have the advantage of taking up little space when they are in the position for storage. When they are in the position for use, they may be placed on the ground or may even be placed on a shop counter. To adapt their height to the space available and to the number of articles that it is desired to display, it is sufficient to add or remove members. In addition, since they are made from a sheet of plastics material which is heat welded or molded or injected or may even be made from pressed sheet metal, these members are light, inexpensive and aesthetic.

The display unit according to the second embodiment, corresponding to FIGS. 6 to 9, has the additional advantage of forming a rigid arrangement in the position for use; there is no risk of its members coming apart when it is moved, whether this is for rotating it, inclining it, lifting it or if impact is imparted thereto. In addition, the helical rims give it a particularly aesthetic appearance.

Naturally, the invention is not limited to the single embodiments of this display unit, whose parts have been described above as non-limiting examples; on the contrary, it includes all variations, for example those where the members are divided into a number of different sectors or even those where the members are adapted to display other articles than those aforementioned.

What is claimed is:

1. A display unit for articles to be mounted along its periphery, comprising a stack of identical thin-wall members of circular outline and provided with a plurality of angularly equispaced formations projecting from one axial side of each member and forming concavities at the opposite axial side thereof, said formations of pairs of adjacent members nesting in one relative angular position of the adjacent members with a projecting side of each formation of one member of the pair fitting into the concavity of a respective formation of the other member of the pair, the formations of the adjacent members of the pair spacing said members apart in another relative angular position to expand the stack, said members each being provided along its periphery with means for mounting said articles thereon, said formations including three angularly equispaced bosses, each member being of disk shape and further formed with three angularly equispaced recessed portions projecting from the said other side of the member, each boss being located between two recessed portions

5 and at the same angular distance from each of them, each boss being formed at its upper end with a cup capable of receiving one such recessed portion, the cups of said bosses and said recessed portions having their centers located on a common circle centered on the axis of the disk such that when two adjacent members have the same angular position, the bosses of one fit into the bosses of the other and, when the adjacent members are angularly offset through one sixth of a revolution, the recessed portions of an upper member are received in the cups of the bosses of a lower member of the pair.

2. The display unit defined in claim 1 wherein each member is formed along its periphery with a rim having an inverted-V-section, said rim including an outer skirt, said means for mounting said articles including perforations formed in said rim.

3. A display unit for articles to be mounted along its periphery, comprising a stack of identical thin-wall members of circular outline and provided with a plurality of angularly equispaced formations projecting from one axial side of each member and forming concavities at the opposite axial side thereof, said formations of pairs of adjacent members nesting in one relative angular position of the adjacent members with a projecting side of each formation of one member of the pair fitting into the concavity of a respective formation of the other member of the pair, the formations of the adjacent members of the pair spacing said members apart in another relative angular position to expand the stack, said members each being provided along its periphery with means for mounting said articles thereon, said formations including a succession of helical surfaces having the same axis and the same pitch and starting from a common plane and ending at another common plane and separated from one another by radial walls interconnecting the helical surfaces, said helical surfaces, and said radial walls reaching toward a cavity having the shape of a truncated cone and located at the axis of the respective member, the upper part of each helical surface being formed with a perforation and the underside of each radial wall being formed with a tenon engageable in one of the perforations of a lower member upon the stacking thereof.

4. The display unit defined in claim 3 wherein each perforation includes a wide part facilitating the passage of a widened end of one of said tenons and a narrow part immobilizing the respective tenon.

5. The display unit defined in claim 3 wherein three such helical surfaces are provided, each extending over a center of 120°.

6. The display unit defined in claim 3 wherein each of said formations has a rim of inverted-V-cross-section, each of said rims having an outer apron formed with perforations constituting said means for mounting said articles, the rims of the stacked members in an expanded position extending continuously in a plurality of helices along the stack.

* * * * *