The present invention relates to display stand constructions, and more particularly relates to an assembly for use as a cartop advertising display, although the assembly of the present disclosure may find equivalent use as a stationary display.

In the past, devices in the general nature of the subject matter disclosed herein have been relatively expensive to manufacture and have created considerable storage problems when not in use. This is particularly true of instances where such displays were used only during political campaigns. In general, these displays were triangular in configuration and were made up to break down into components for storage, thereby requiring stacking one upon the other. In addition, when prior art display assemblies were used as cartop advertising media, they required supports, such as conventional luggage carriers or similar devices which included considerable hardware for use as fastening means. The prior art devices also generally required a supporting framework of wood to which was attached a cardboard placard bearing a particular notice or which acted as a support for a printed notice pasted thereon.

In view of the difficulties and expense involved in providing prior devices, the present invention contemplates a greatly simplified display assembly construction utilizing a minimum number of pieces, each of which may be stacked flat and the supporting members of which may act as standards for either a signboard of "torpedo" configuration, or of a conventional triangular configuration, as desired.

The present invention provides a display stand construction which may comprise laterally-spaced supporting standards manufactured preferably of an injection-molded, thermoplastic material, or which may be stamped from sheet metal stock, if desired, said standard further including releasable latching means for attaching display placards to the standard and a base member having arm portions extending laterally of the upright portion in opposed directions. The portable version of the display construction also includes means for attaching a device to spaced-apart, longitudinally extending rain gutters on an automobile and comprising an adjustable tie including flexible cords arranged to releasably and adjustably join respective extending portions of the base of the standard with a clip member having a gutter engaging lip, and further including a removable adjusting buckle member to permit tightening of the cord and to make adjustments in length depending upon the distance between the oppositely spaced rain gutters.

The support members of this invention may also be readily and easily modified without departing from the present invention to provide a horizontal base for supporting objects, such as fishing poles or skis, on a car roof, while incorporating the releasable fastening means for holding down a cooperating strap and also utilizing the foregoing tied-down arrangement.

Another feature of the present invention resides in the provision of a dual purpose spacer-link member, which acts to maintain opposed placard members of one embodiment in relatively spaced position and, when in use with a triangular configured display stand, to interlink oppositely disposed standards with one another at the distended portion of the triangular placard arrangement.

The present invention further contemplates a versatile arrangement of components which may be made from a single injection-molding operation, or by means of blanking and forming from sheet materials, and which components may be utilized as support members for displays arranged in a variety of physical embodiments.

Other advantages and novel features of the construction will be apparent from the following detailed description, taken in connection with the drawings, in which:

FIG. 1 is a pictorial view of one embodiment of the present invention utilized as a transportable cartop advertising media;

FIG. 2 is a fragmentary top plan view of the construction of this invention depicted in the view of FIG. 1;

FIG. 3 is a vertical sectional view taken along section line 3--3 of FIG. 1, and illustrating one of the supporting standards in full elevation;

FIG. 4 is a vertical sectional view taken along section line 4--4 of FIG. 1 more fully illustrating the detail of the spacer-link members as utilized in the embodiment of FIG. 1;

FIG. 5 is a fragmentary sectional view taken in the plane of section line 5--5 of FIG. 3;

FIG. 6 is a fragmentary sectional view taken in the plane of section line 6--6 of FIG. 4;

FIG. 7 is a fragmentary view, partly in section more clearly illustrating the action of the fastening means, and in particular, for mounting placards to the spacer-link member;

FIG. 8 is a fragmentary view, partly in section, taken along section line 8--8 of FIG. 4, and further illustrating the fastening means of this invention;

FIG. 9 is a perspective view illustrating the detail of the buckle member which is a component of the tie interconnecting the supporting standard with a cartop rain gutter, the relationship of which has more clearly been set forth in FIG. 2;

FIG. 10 is a perspective view illustrating the detail of a cartop gutter engaging clip utilized in anchoring the adjustable ties; and

FIG. 11 is a top plan view of another embodiment of the construction of the present invention.

It will be apparent from the following description that, although the illustrated embodiments of the present invention have particular adaptation for use as cartop advertising media, the present construction also has equal application for stationary mounting arrangements.

It will be apparent from the drawings and ensuing description that the various components of the embodiments of either FIGS. 1 and 2 or FIG. 11 depend upon two major components; i.e., the supporting standard and the spacer-link member, generally referred to by the reference numerals 15 and 16, respectively. Both of these members, as well as the remaining components to be later described, are preferably of an injection-molded thermoplastic material, such as nylon or the like and an appropriate filler material. It will be apparent, however, that the various parts may also be stamped from sheet materials, such as flexible sheets of metal. In addition, the elements comprising the standards 15 and the spacer-links 16 may be separately fabricated and thereafter joined together as a unit (not shown). The embodiment of FIGS. 1 and 2 is illustrated herein in the form of a cartop advertising display assembly. In order to provide sufficient support in the simplest and most economical manner possible, a supporting standard 15 (see FIG. 3) has been provided which includes a vertical support, and a base portion with laterally extending arms, as well as means for releasably supporting placards thereon, the entire assembly being molded as an integral unit with the distended portion of the triangular placard arrangement.
laterally extending from the upright portion in opposed relative directions. Latching means are provided in the form of integrally molded, laterally projecting, bifurcated, flexible arms 19, more particularly illustrated in the view of FIG. 7, and which will be hereinafter described in detail.

Inasmuch as the standard 15 is preferably molded of a resiliently material, such as nylon, some degree of rigidity is required to provide adequate support. It has been found to be very satisfactory to mold the member with a series of sections divided by inwardly-disposed webs or flanges 20 defined by laterally projecting ribs 21. Details of this arrangement are clearly set forth in the views of FIGS. 3 and 5. The outermost ribs defines a marginal supporting framework 22, which framework and the laterally extending web or flange 23 act to support the laterally extending latching arms 19, four sets of such arms being illustrated. In order to economize on material, it will be apparent that windows 24 defined by the inner webs 20 may be provided for the dual purpose of saving material and also to permit molding of washers 25 and 26, the purpose of which will hereinafter be described. The washers 25 and 26 are molded simultaneously with the standard 15 under conventional molding practices.

As previously described, prior art display stands generally require a cartop luggage carrier construction which utilizes clips or the like for protecting the cartop. The present device conveniently incorporates integrally molded "fish hook" spearheads 27, which piercingly engage polystyrene foam blocks 28. The blocks 28 are relatively soft and conformable to any cartop shape, and are of such little cost as to permit their disposal after each use.

Having now described the supporting standard 15 in detail, it will be observed that this member is very versatile in its use. That is, a pair of standards 15 are all that are required for supporting the "torpedo" shaped configuration of FIGS. 1 and 2, and only three of such standards are needed for the triangular shaped display of FIG. 11 without requiring any further modification whatsoever. Describing, first, the display embodiment of FIGS. 1 and 2, and observing that like parts of the various embodiments are identified by like reference characters, it will be seen that the pair of standards 15 are disposed with the upright portion 17 thereof positioned intermediate the sides and ends of a pair of flat placards 30 (see FIGS. 2, 3 and 4). The placards are fastened together at opposite ends thereof by means of conventional fasteners, such as staples or the like. It will be apparent that no additional supporting framework is required, and that the placards 30 may be of conventional paperboard stock suitably treated to withstand deterioration under adverse weather conditions.

Although it is conceivable that the standards 15 may be used by themselves, experimental trials have proven that it is highly desirable to use an additional spacer member, such as the spacer-link 16 (see FIGS. 2, 4 and 6). Actually, the member 16 acts to retain the placards 30 in position against either bowing outwardly or inwardly, either of which condition may occur when the assembly is mounted on a cartop, as shown in FIG. 1, depending upon the speed of the car. There is a tendency to bow inwardly quite often which acts to bend the placard at its points of fastening to a respective supporting standard 15 and thereby cause scoring of the paperboard, which materially weakens the same. It will be obvious that the standards are preferably mounted as close to the ends of the placards 30 as possible in order to provide a relatively flat surface intermediate the standards where most of the message will be printed. Support will then be somewhat lacking at the center of the placards, which support may be provided by the spacer-link member 16. Obviously, another standard 15 may be disposed at the center, but at added expense and trouble. Both the standards 15 and the spacer-link members 16 utilize similar placard fastening means.

The placard fastening means, a portion of which has briefly been described above, comprises a pair of bifurcated, resilient arms 19, preferably molded integrally with the supporting standards 15 and the spacer-link member 16. It will be noted that the arms 19 project laterally of the upright portion 17 and from the opposite ends of the spacer-link member 16. With particular reference to FIGS. 7 and 8, it will be observed that the flexible arms 19 are provided with a beveled or tapered surface 31 at the outer extremities and are further provided with an intermediate notched detent 32 for receiving a placard 30, a backup washer 25, and a latching washer 26. It will be observed from FIG. 7 that the resilient or flexible arms 19 are normally substantially parallel with one another as shown in the solid line, and are compressible towards one another to the position shown by the dotted lines. Each of the washers 25 and 26 is provided with an elongated slot 33, which slot has its longest dimension substantially the same length as the distance between the base of each of the detent notches 32 of the arm 19. The washers 25 and 26 are molded integrally together until the aperture or slot 33 of the washer passes the highest point of the bevel and seats itself in the detent notch 32 of the spaced-apart arms 19. This washer 25 serves as a backup washer to provide additional supporting surface to the placard 30 and thereby minimize scoring at this point of stress. The arms 19 of either the members 15 or 16 are merely compressed together, as shown by the dotted lines of FIG. 7, as the washers 25 and placard 30 are inserted over the beveled end 31. A retaining or latching washer 26 is then placed in the same manner over the bifurcated arms 19 to hold the placard 30 in place.

Thus, the placards are conveniently fastened to the standards 15 and the spacer-link member 16 by merely, first forcing a backup washer 25 inwardly of the arms 19 and against the beveled surface 31 to compress the arms 19 together until the aperture or slot 33 of the washer passes the highest point of the bevel and seats itself in the detent notches 32 of the spaced-apart arms 19. This washer 25 serves as a backup washer to provide additional supporting surface to the placard 30 and thereby minimize scoring at this point of stress. The arms 19 of either the members 15 or 16 are merely compressed together, as shown by the dotted lines of FIG. 7, as the washers 25 and placard 30 are inserted over the beveled end 31. A retaining or latching washer 26 is then placed in the same manner over the bifurcated arms 19 to hold the placard 30 in place.

From FIGS. 2 and 5, it will be further observed that the present fastening means provides a versatile retainer as it permits the placards 30 to be held in place no matter where the fastening means is disposed. That is, it will be noted that the degree of bend at the various points of fastening in the view of FIG. 3 differs at various points along the plane defined by the placard 30. There is a relatively sharp angle formed at the points of juncture of the standards 15 and to the placards 30, whereas the arms 19 are disposed almost normal to the plane of the placard 30 at a fastening position of the member 16. Thus, no matter how the standards may be placed relative to the placards, the members will be retained in place and supported by a backup washer 25, which rocks on the respective arms 19.

The convenience is further depicted in the embodiment of FIG. 11, which will be described in detail hereinafter. The placards 30 and the washers 25 and 26 are removed from the arms 19 by merely compressing the arms 19 towards one another to the dotted line portion of FIG. 7.

In order to mount the display assembly of the present invention on either a cartop or other base, a facile tie has been provided and will be particularly described in connection with its use as a cartop supporting means. With reference to FIGS. 2 and 3, and 11, the arms 18 of the base portion of the standard 15 are provided with apertured ears 35 at the extremities thereof. A flexible cord 36 is threaded through the aperture of each of the ears 35 and terminates at one end in a restraining clip 37 engaging one side of an apertured portion 38 (see FIG. 10) of a gutter-engaging clip 39. It will be noted that the clip 39 includes a depending lip 40 arranged to directly engage a cartop gutter. A finger grasp 41 is also provided for holding the clip 39 in place while assembling the tie to the cartop gutter and for removing the same
after use. The opposite end of the cord 36 terminates in a restraining knot 42 engaging one side of an apertured buckle 43. The cord 36 is also threaded through apertures 44 (see FIG. 9) and slidably received therein for adjustment of the buckle. The buckle is held in place after adjustment by means of the open-ended elongate slot 45 terminating in a locking tongue 46.

It will be apparent that after centering the display assembly relative to a cartap as shown in FIG. 1, the assembly may be retained in place and adjusted in position by means of the above-described tie assembly including the cords 36, the clip 39 and the buckle 43. It might be mentioned herein that the preferred cord is of a plastic-coated, wire core variety.

When the spacers have been shortened to the desired adjusted length, the tongue 46 of the buckle 43 is caused to overlap an intermediate section of the cord adjacent thereto. Inasmuch as the buckle is preferably of the same resilient thermoplastic material used for fabricating the supporting standards 15 and the spacer-link member 16, it will be flexible and relatively simple to fasten to the cord 36. It will be observed that there is no undue strain upon the placards 30 as the ties are directly attached to the base arms 18 of the standards and do not interfere with the placards in any manner.

It will be apparent that, although the embodiment of FIG. 2 has been described and illustrated with two separate rate marks 30 joined together at opposite ends, it is within the scope of the present invention to provide placards of a single strip scored and folded intermediate its ends with the terminal edges joined by fasteners, such as staples or the like.

Referring in particular to FIG. 11, a second embodiment of the present invention will next be described. In this case, a very common form of political advertising display, as used on cartaps, is illustrated. Here the basic components above-described, with the exception of the placards, are also used without any modification whatsoever. The placards 30 may be formed of three separate sheets joined together, or as one continuous cardboard sheet fastened at an end 51 after having been bent to provide the triangular configuration. Obviously, a message may be silk screened or otherwise printed directly upon the surface of placard 50, or the placard may be used merely as a support for a pre-printed paper, pasted or otherwise fastened thereto. In the present embodiment, it has been found to be desirable to provide a stiffening member 52, which may be of a single continuous strip bent as shown and fastened to each of the three sides of the triangular configuration internally thereof.

To further exemplify the versatility of the components of this invention, it will be observed that the standards 15, buckles 43, clip 39 and cord 36 are used without modification. The spacer-link member is used without modification, but in a manner differing from its use in the embodiment of FIG. 2. A single supporting standard 15 is fastened near the apex of the triangular member in the same manner as heretofore described, the triangular member being apertured to receive the fastening arms 19 and their washers 25, 26. Two of the standards 15 are also utilized at an intermediate position spaced inwardly of the base of the triangle, and are fastened to both the placard 50 and to two sides of the stiffener 52 as illustrated in FIG. 11. Although not previously described, it will be further noted that the standard 15 is provided with an upstanding headed stud 53. The stud 53 is adapted to be received in a keyhole slot 54 of the spacer-link member 16. Thus, the member 16 here acts in the capacity of a link extending the standards 15 of the triangular configuration of FIG. 11. The member 16 and the standards 15, when joined together may be rigidly secured to a cartap or other support by means of the same tie arrangement as disclosed previously in connection with the embodiment of FIG. 2 with cords 36 being threaded through the apertured ears 35 and fastened and adjusted to a clip 39.

The spacer-link member 16 is shown in the present embodiment merely in the capacity of a linkage member, but obviously, if so desired, the member may also provide additional support (not shown) to the stiffener 52 by being disposed intermediate the opposite sides of the stiffener.

It will be apparent that the present invention provides a very useful and facile display stand construction wherein the various components are versatile in nature and which construction is of minor expense when compared to conventional constructions, and, in fact, one which may be of a disposable nature if so desired. Obviously, by using cardboard placards 30 and 50, these boards may be easily removed from the standards and spacer-link members by merely compressing the arms 19 of the fastening means together and sliding the washers 25 and the placards 30 past the dent notch 32. The placards and remaining components may then be stored for later use. The "torpedo" embodiment particularly lends itself to storage upon collapsing after removing the standards 15 and the spacer-link member 16. The triangular embodiment of FIG. 11 may be collapsed if removable fasteners are used at is end and at the adjacent supporting surfaces of the stiffener 52. The original message may be printed directly upon the cardboard and covered with a later message by merely pasting a newly printed paper sheet thereon.

Another important feature of this invention resides in the versatile arrangement of the various components. That is, it is within the realm of the present invention to provide an inexpensive (and if desired, disposable) enclosed cartap carrier of any desired shape; i.e., with side-walls such as those of either of the embodiments of FIG. 2 or 11, or rectangular (not shown), by merely providing a top and a bottom (not shown) for the side-walls similar to the placards 30 and 50, respectively. In such case, the standards 15, as described herein would be modified readily (not shown) by merely molding, or otherwise affixing fastening means, such as the flexible bifurcated arms 19 and washers 25, 26 to the upper side of the base arms 18 for retaining an apertured bottom board (not herein shown). The standards would then be moved closer to the ends of the "box" to provide grommet room.

In fact, since the bottom member will now furnish additional support, the standards 15 may be modified to remove the upright portion 17 and merely act as a base for the "box." Stiffeners may be utilized for additional vertical support when needed.

Another embodiment contemplated by the present invention, but not specifically illustrated, is to merely use the base arms 18 of the standard 15 (with the upright portion 17 omitted) as a carrier for elongate objects, such as fishing poles or skis. The components of the tie assembly would also be used without modification. Here, the flexible notched fastener arms 19 and washers 25, 26 would be utilized as fastener means, but would be molded or otherwise affixed to the top surface of the base arm 18 for engagement with an apertured flexible strap (not shown) which may be of treated paperwood, sheet metal or molded materials.

It will be apparent that the present invention has provided a versatile combination of elements which not only find use as facile and inexpensively manufactured components for advertising display stands (either stationary or transportable), but also of a design permitting simple modification to provide cartap carrier embodiments.

We claim:

1. Support means in combination with a surface to which said support means is to be attached, said support means comprising:

(a) a plurality of spaced apart, supporting standards which include a base portion having opposed, laterally extending arms;

(b) sheet-like members each located in a plane substantially parallel to said standards;

(c) means for fastening said sheet-like members to
said standards comprising a retaining member extending laterally of said standards and being bifurcated to provide a pair of flexible arms having tapered ends defining oppositely disposed retaining detents spaced inwardly thereof and having inner and outer ends, said bifurcated arms being further arranged to protrude through an aperture of a respective sheet-like member, and a relatively rigid locking washer having at least a first and second face and having an aperture arranged to slidably receive said bifurcated arms when compressed towards one another as said sheet-like member and said washer are forced inwardly of said taping ends, said washer means being retained in a locking position in said detent outwardly of said sheet-like member upon release of said flexible arms to normal positions so that said first face of said washer means is flush against said sheet-like member while said second face abuts the outer end of said detent.

2. A display stand construction comprising:
(a) a plurality of flat, apertured placards;
(b) a plurality of spaced apart, T-shaped supporting standards, each comprising an upright portion and a base portion having opposed arms extending laterally of said upright portion, the upright portion of said standards being disposed adjacent to said placards; and
(c) means for fastening said placards to said standards comprising a retaining member extending laterally of said upright portion and being bifurcated to provide a pair of flexible arms having tapered ends defining oppositely disposed retaining detents inwardly thereof, said bifurcated arms being further arranged to protrude through an aperture of a respective placard, and a locking washer having an aperture arranged to slidably receive said bifurcated arms when compressed towards one another as said apertured placard and said washer are forced inwardly of said tapered ends, said washer being retained in locking position in said detent outwardly of said flexible arms to normal position.

3. The display stand construction of claim 2, wherein there is provided spacer means intermediate said placards, said spacer means comprising a member having a dimension transversely of said placards at least as great as the width of the upright portion of said standard.

4. In the fastening means of claim 1, an apertured backup washer disposed on said flexible arms in face to face contact with the sheet-like member as well as abutting said outer end of said detent so that said sheet-like member is between said locking and backup washers.

5. A display stand construction for an automotive vehicle having a top equipped with rain gutters disposed at opposite sides thereof, said construction comprising:
(a) a pair of flat, apertured placards joined together at opposite sides thereof;
(b) a plurality of spaced apart, T-shaped supporting standards, each comprising a one-piece molded member including an upright portion and a base portion having opposed arms extending laterally of said upright portion, the upright portions of said standards being disposed between said placards intermediate the joined ends thereof;
(c) means for fastening said placards to said standards comprising a retaining member extending laterally of said upright portion and being bifurcated to provide a pair of flexible arms having tapered ends defining oppositely disposed retaining detents inwardly thereof, said bifurcated arms being further arranged to protrude through an aperture of a respective placard, and a locking washer having an aperture arranged to slidably receive said bifurcated arms when compressed towards one another as said apertured placard and said washer are forced inwardly of said tapered ends, said washer being retained in locking position in said detent outwardly of said flexible arms to normal position.

7. A display stand construction comprising:
(a) a pair of flat, apertured placards joined together at opposite sides thereof;
(b) a plurality of spaced apart, T-shaped supporting standards, each comprising a one-piece molded member including an upright portion and a base portion having opposed arms extending laterally of said upright portion, the upright portions of said standards being disposed between said placards intermediate the joined ends thereof; and
(c) means for fastening said placards to said standards comprising a retaining member extending laterally of said upright portion and being bifurcated to provide a pair of flexible arms having tapered ends defining oppositely disposed retaining detents inwardly thereof, said bifurcated arms being further arranged to protrude through an aperture of a respective placard, and a locking washer having an aperture arranged to slidably receive said bifurcated arms when compressed towards one another as said apertured placard and said washer are forced inwardly of said tapered ends, said washer being retained in locking position in said detent outwardly of said flexible arms to normal position.

8. The display stand construction of claim 7, wherein there is provided spacer means intermediate the joined
sides of said placards, said spacer means comprising a member having a dimension transversely of said placards at least as great as the width of the upright portion of said standards.

References Cited in the file of this patent

UNITED STATES PATENTS

<table>
<thead>
<tr>
<th>Patent Number</th>
<th>Inventor</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>612,636</td>
<td>Zusi</td>
<td>Oct. 18, 1898</td>
</tr>
<tr>
<td>928,469</td>
<td>Miles</td>
<td>July 20, 1909</td>
</tr>
<tr>
<td>1,835,480</td>
<td>Fendorf</td>
<td>Dec. 8, 1931</td>
</tr>
<tr>
<td>1,890,348</td>
<td>Weatherhead</td>
<td>Dec. 6, 1932</td>
</tr>
<tr>
<td>1,942,444</td>
<td>O'Connor</td>
<td>Jan. 9, 1934</td>
</tr>
<tr>
<td>2,112,178</td>
<td>Selph</td>
<td>Mar. 22, 1938</td>
</tr>
<tr>
<td>2,196,417</td>
<td>Kelsen</td>
<td>Apr. 9, 1940</td>
</tr>
<tr>
<td>2,209,403</td>
<td>Kittner</td>
<td>July 30, 1940</td>
</tr>
<tr>
<td>2,373,778</td>
<td>Quimby</td>
<td>Apr. 17, 1945</td>
</tr>
<tr>
<td>2,440,821</td>
<td>Godwin</td>
<td>May 4, 1948</td>
</tr>
<tr>
<td>2,606,381</td>
<td>Wilson</td>
<td>Aug. 12, 1952</td>
</tr>
<tr>
<td>2,722,625</td>
<td>Bingeman</td>
<td>Nov. 1, 1955</td>
</tr>
<tr>
<td>2,729,413</td>
<td>Fetter</td>
<td>Jan. 3, 1956</td>
</tr>
<tr>
<td>2,960,786</td>
<td>Wagner</td>
<td>Nov. 22, 1960</td>
</tr>
<tr>
<td>3,075,311</td>
<td>Maillette</td>
<td>Jan. 29, 1963</td>
</tr>
</tbody>
</table>

3,153,394