June 29, 1948. I. L. LESAVOY 2,444,166

SHEET CONSTRUCTION

Filed June 6, 1945 2 Sheets-Sheet 1

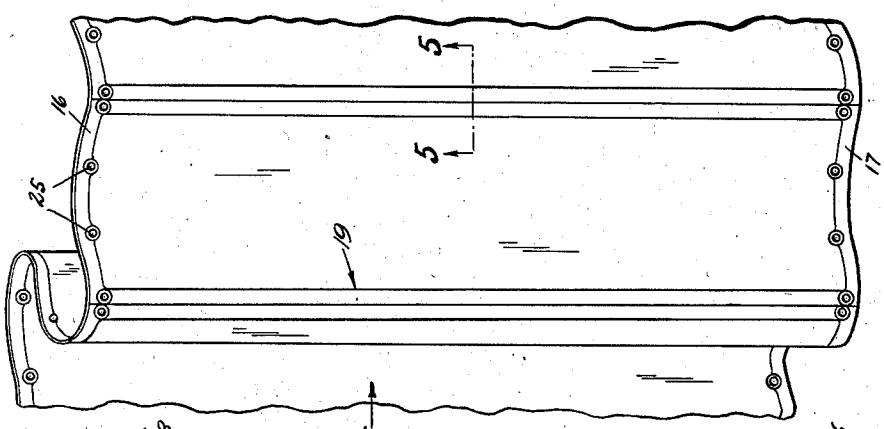


FIG. 1

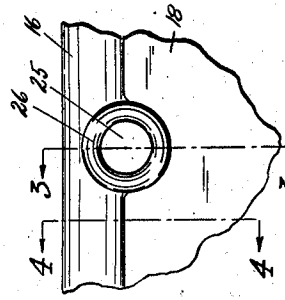


FIG. 2

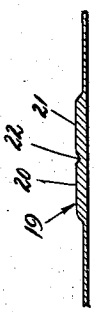


FIG. 5

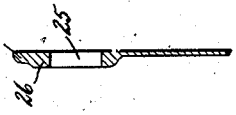


FIG. 3



FIG. 4

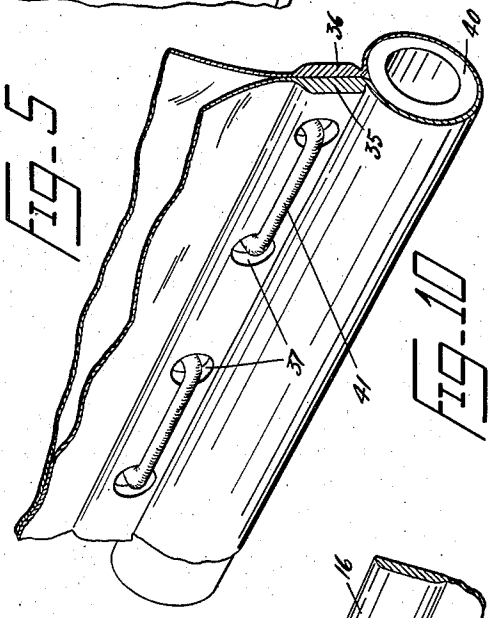


FIG. 10

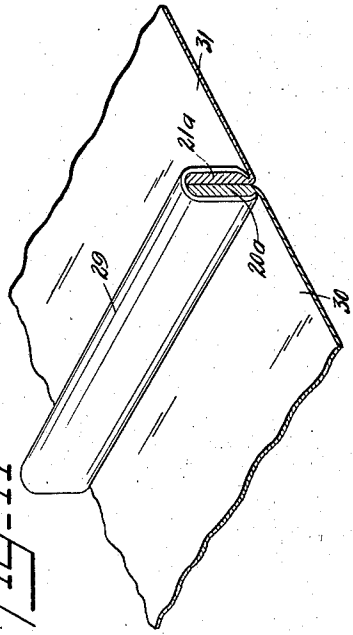


FIG. 11

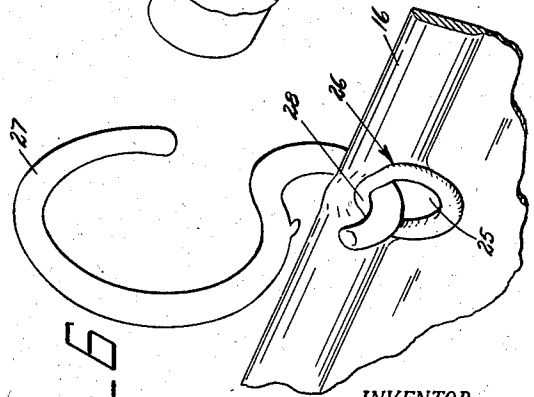


FIG. 6

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SHEET CONSTRUCTION

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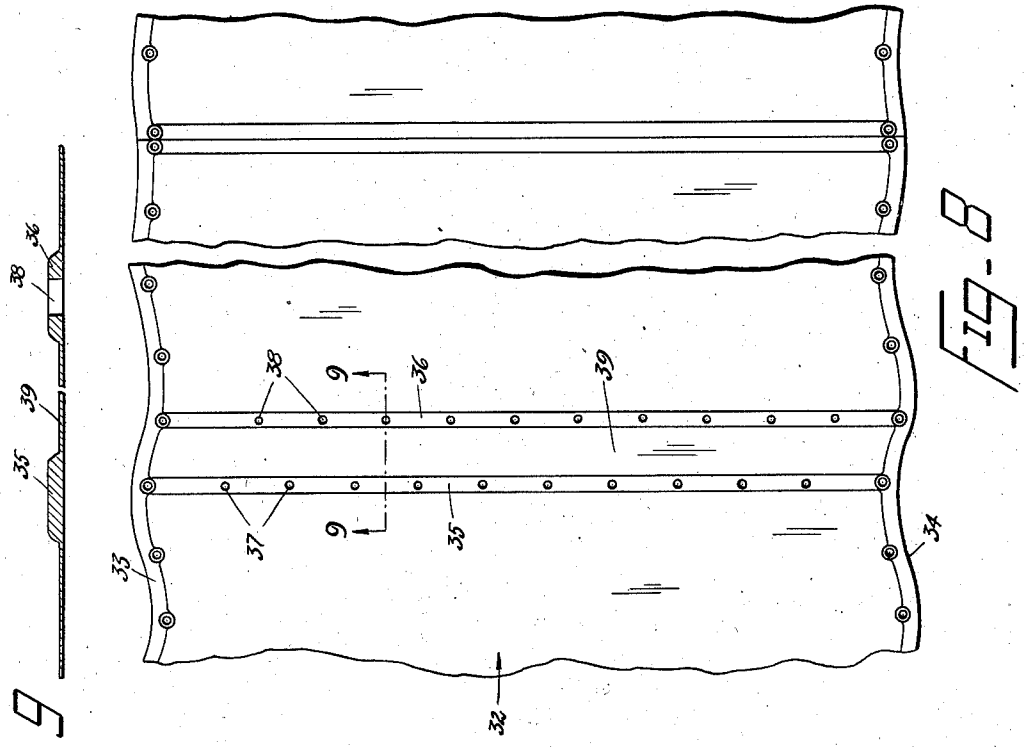


FIG. 8

FIG. 9

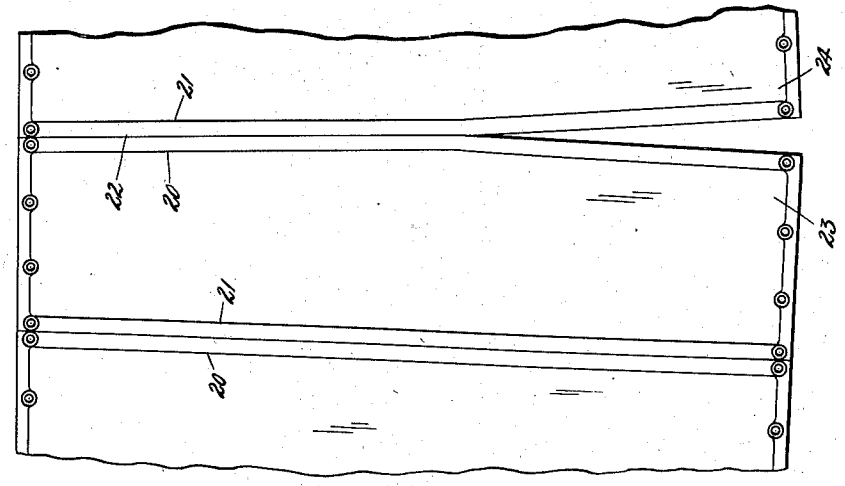


FIG. 7

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SHEET CONSTRUCTION

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7 Claims. (Cl. 160—330)

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This invention relates to a sheet construction, and more particularly to continuously produced sheets of plastic or other molded, pressed or rolled material adapted for use in or fabrication of shower curtains, screens, partitions, tents, awnings, portable swimming pools, bathinettes, chair coverings, and other articles wherein sheet material may be employed.

It is primarily within the contemplation of this invention to provide a sheet that could be produced on a mass production scale, and that could serve as suitable sheeting either for a single predetermined purpose, or for any one of a number of selected purposes. And in this aspect of my invention it is an important object to enable the sheeting to be used in different lengths or proportions in accordance with its intended function, without changing the setting of the sheet fabricating apparatus.

It is also an important object of my invention to provide suitable reinforcements in a sheet of the aforementioned class, whereby it may adequately serve its function without the danger of mutilation, thereby prolonging its useful life. And in this aspect of my invention it is an important object to provide both the longitudinal and transverse peripheral edges of the sheet with beaded reinforcements, thereby strengthening the sheets where they are most likely to begin to tear.

A further object of my invention is to provide reinforced holes in sheets of the above-mentioned category, whereby they may be safely used in shower curtains or other articles containing apertured portions subject to strain, as would be caused by the weight of a shower curtain suspended by a hook, or by the threading or lacing of such apertured portions.

Another object of my invention is to enable a sheeting of the aforesaid class to be readily and cleanly separated into a plurality of sections without the necessity of employing complex or tedious manual trimming operations.

It is another object of this invention to enable sheetings of said category to be conveniently used for shower curtains, whereby the transverse reinforcing beads become vertical ribs giving strength and stability to a suspended curtain and enabling it to remain in its preferred vertical position during the operation of the shower and to resist bending along a horizontal fold under the influence of the shower-induced draft.

It is still another object of my invention to enable said sheeting to be used in conjunction with the fabrication of chairs and other devices where-

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in the reinforced edges can serve as joints in either an interlocking or laced arrangement.

Other objects, features and advantages will appear from the drawings and the description hereinafter given.

Referring to the drawings,

Figure 1 is a fragmentary perspective of a sheet of plastic material according to one form of my invention.

Figure 2 is an enlarged fragmentary elevation of an edge portion of the sheet of Figure 1.

Figure 3 is a section of Figure 2 taken along line 3—3.

Figure 4 is a section of Figure 2 taken along line 4—4.

Figure 5 is a section of Figure 1 taken along line 5—5.

Figure 6 is a fragmentary perspective of the portion of the sheet illustrated in Figure 2, showing a shower curtain hook within the hole.

Figure 7 is a fragmentary elevation of the sheet of Figure 1, showing a partial separation of two adjacent sections.

Figure 8 is a fragmentary elevation of another form of my invention, illustrating a sheet with lacing holes therein.

Figure 9 is a section of Figure 8 taken along line 9—9.

Figure 10 is a fragmentary perspective of the sheet of Figure 8 laced around a tubular frame support adaptable for a chair frame, an awning, a baby bath, a portable swimming pool and the like, and

Figure 11 is a fragmentary perspective of another frame support operatively joining two adjacent sheets constructed according to my invention.

In the form of my invention illustrated in Figures 1 to 7, the sheet 15 is made preferably of a plastic material, so that it could be fabricated in predetermined or continuous lengths by mass production methods. In the preferred method, by the use of calender rolls, a continuous web of the sheet is produced, whereby it could be conveyed and guided into rolls of a predetermined yardage, or otherwise packed into suitable units for storage or transportation.

In the form illustrated, the sheet 15 is provided, along its entire extent, with the longitudinal reinforced lateral edges or beads 16 and 17, these reinforced portions being of greater thickness than the body portion 18 of the sheet. The web is also provided with a plurality of spaced transverse reinforced strips 19, also of a thickness greater than that of body portion 18 of the

sheet, and disposed between and joining the longitudinal beads 16 and 17.

In the preferred form of my invention, the strips 19 are each divided into two parts 20 and 21 separated by the scoring or indenture 22 running the length of the strip, thereby forming separation lines for dividing the sheet into predetermined lengths. Thus, as illustrated in Figure 7, adjacent sections 23 and 24 of the web are separated from each other either by slitting along line 22, or by applying a pull in opposite directions along the weakened transverse portion of the web defined by said line 22.

It is thus possible, with this sheet construction, to split the sheet, at predetermined intervals set by the scorings 22, to produce units in lengths that are mutliples of each section such as 23 and 24. And each unit is completely reinforced at its four peripheral edges with beads 16, 17, 20 and 21.

In the above-referred-to form of my invention, the lateral edge portions 16 and 17 of the sheet 15 are provided with a plurality of spaced peripherally reinforced holes 25, the reinforcement being, in the preferred form illustrated, in the shape of a ring 26 of thickened cross-section. These rings blend with the beaded edges 16 and 17, thereby providing a double insurance against rupture. Although the drawing illustrates, as a preferred form, an arrangement wherein only a portion of each ring extends into and merges with the marginal bead, the balance merging with the body 18 of the sheet, the invention is not limited to this particular form, inasmuch as the ring may completely merge with the bead throughout its entire extent, or may be free from the bead entirely, within the scope and intent of this invention.

If the sheet 15 is to be suspended, as might be required for a shower curtain or screen, a hook 27 is inserted in the holes 25, as shown in Figure 6. As the point of engagement of the hook is at the upper region 28 of the ring 26, the tendency of the sheet to rupture will be at or about that region. The reinforced structure of the ring 26 and the beaded portion 16 will, however, reduce the danger of such rupture.

If the sheet sections are to be used as a shower curtain, or for some other use requiring suspension from hooks, the holes 25 may be provided at one edge only of the sheet, if desired; but if provided at both lateral edges, the sheet may be operatively suspended from either edge.

It is important to observe that the transverse reinforced strips 19, or their component parts 20 and 21, become vertical ribs when the sheet sections are used as shower curtains or other analogous uses. Such ribs add stiffness to the sheet, prevent its deformation, and permit it to hang properly. And particularly when used as a shower curtain, these ribs serve the useful purpose of resisting the displacement of the curtain normally resulting from the shower draft, and also in similarly resisting the tendency of the curtain to bend back along horizontal folds under the same influence. In this way, the said ribs serve to replace the weighted members that are frequently attached to the bottom edge of shower curtains.

Another use of the ribs 19 is illustrated in Figure 11 wherein two adjacent beads or ribs 20*a* and 21*a* are shown in abutting relation and held together by clamp member 29 to form a juncture connecting sheet sections 30 and 31. This construction may have many uses, particularly where sheet sections are to be attached to each other to form continuous lengths, or where opposite edges

of a sheet section are to be joined in conjunction with a frame structure.

Figures 8 and 9 show a modification of my invention, the sheet 32 containing the lateral beaded edges 33 and 34 like edges 16 and 17 of the first form, but having two transverse spaced coactive beaded portions 35 and 36 containing holes 37 and 38, respectively, arranged so that they may be laced as hereinafter shown.

The beads 35 and 36 are spaced apart a predetermined distance so that they will be in abutting engagement with their respective holes in facing relation when the intermediate portion 39 of the sheet is wrapped around a tubular frame 40 (Figure 10). Lacing 41 is then drawn through the holes in said adjacent beads 35 and 36 in any known manner, to effect a secure anchorage for the sheet. This arrangement enables a two-ply sheet structure to be readily fabricated, whereby it may be conveniently used for chairs or other purposes requiring greater strength than could be provided by a single ply construction.

It is understood that the various embodiments above-described and shown in the drawings are illustrative of my invention and not employed by way of limitation, inasmuch as numerous changes and modifications may be made within the scope of the appended claims without departing from the spirit of this invention.

I claim:

1. A plastic sheet of the class described comprising a body portion, thickened lateral edge portions along the entire extent of the sheet, and a plurality of pairs of thickened transverse portions disposed between said lateral edge portions, certain of said thickened portions containing a plurality of spaced circumferentially reinforced holes.

2. A plastic sheet of the class described comprising a body portion, at least one thickened lateral edge portion along the entire extent of the sheet, and a plurality of pairs of thickened transverse portions disposed between the lateral edges of the sheet, certain of said pairs consisting of two spaced thickened portions each containing a plurality of spaced holes therein.

3. In a plastic sheet of the class described, lateral beaded edges along the entire extent of the sheet, and two transverse coactive beaded portions each containing holes therein in predetermined spaced relation, said transverse beaded portions being adapted, upon a folding of the sheet, for abutting engagement whereby the oppositely positioned holes will be in facing relation and whereby they may be adapted to receive suitable lacing therethrough.

4. A plastic sheet of the class described comprising a body portion, at least one thickened lateral edge portion along the entire extent of the sheet, a plurality of thickened transverse portions extending between the lateral edges of the sheet, and reinforced apertured portions along certain of said thickened portions, said apertured portions each comprising a reinforcing ring of greater thickness than said thickened portions.

5. A plastic sheet of the class described comprising a body portion, at least one thickened lateral edge portion along the entire extent of the sheet, a plurality of thickened transverse portions extending between the lateral edges of the sheet, and reinforced apertured portions along certain of said thickened portions, said apertured portions each comprising a reinforcing ring raised above the surface of the thickened portion

and extending into the body portion of the sheet.

6. A plastic sheet of the class described comprising a body portion, at least one thickened lateral edge portion along the entire extent of the sheet, and a plurality of pairs of thickened transverse portions disposed between the lateral edges of the sheet, each pair of transverse portions being contiguous along their entire length and separable from each other, whereby the sheet may be divided into separate peripherally reinforced sections, certain of said thickened portions containing a plurality of spaced circumferentially reinforced holes, the reinforcement comprising a ring raised above the surface of the thickened portion.

7. A shower curtain of plastic sheet material having an integral beaded portion along the upper edge thereof and a plurality of spaced vertical ribs formed integrally with the sheet and

joined to said upper beaded portion, whereby spaced longitudinal portions of the sheet will be reinforced against bending, and a plurality of spaced circumferentially reinforced apertured portions in said beaded portion.

I. LAWRENCE LESAVOY.

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