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GROMMET REINFORCEMENT FOR CANVAS MATERIAL

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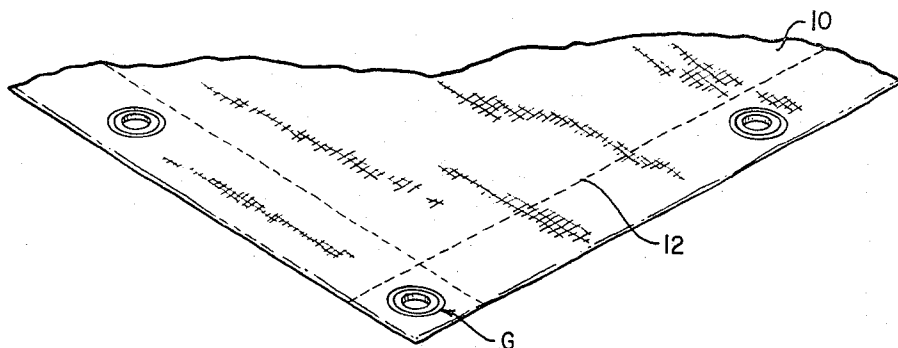


Fig. 1

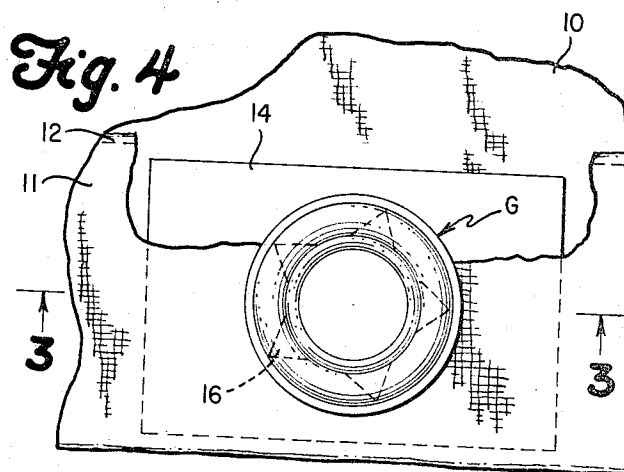
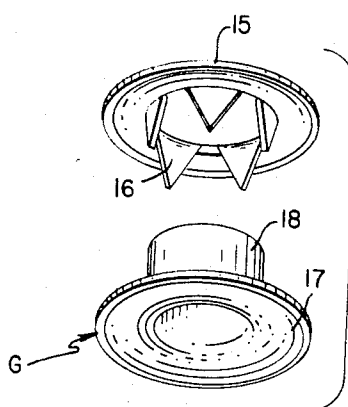


Fig. 2

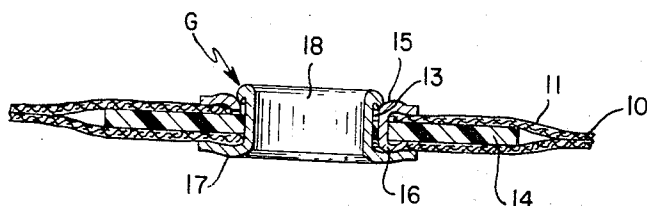



Fig. 3

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GROMMET REINFORCEMENT FOR CANVAS MATERIAL

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1 Claim. (Cl. 24-141)

This invention relates to the mounting of grommets, as used in waterproofed canvas products, such as tarpaulins, tents, awnings and the like.

Canvas products of the above type equipped with grommets have had difficulty in preventing the grommets from pulling through or tearing the material when subjected to severe stresses imposed thereon by ropes passing there-through. Reinforcements heretofore provided for coping with this problem have not been entirely satisfactory principally because they failed to hold the material positively to the grommet and because of inadequate support for the material where the stresses are the greatest.

An object of this invention is to reinforce the grommet area in canvas products of the above character so that the reinforcing elements, grommets and canvas material are so interconnected that they cooperate in a new and improved manner more effectively to militate against tearing and damage to the assembly and resist stresses of great magnitude.

Other objects and advantages of the invention will hereinafter appear and, for purposes of illustration but not of limitation, an embodiment of the invention is shown on the accompanying drawings, in which

FIGURE 1 is a top fragmentary perspective view of a sheet of canvas material provided with grommets;

FIGURE 2 is an enlarged fragmentary plan view of an edge portion of the sheet of canvas material showing one of the grommets and the reinforcing strip for same;

FIGURE 3 is a sectional view substantially on the line 3-3 of FIGURE 2; and

FIGURE 4 is an enlarged exploded view showing in perspective the two parts of the grommet.

The illustrated embodiment of the invention shows a sheet of canvas material 10, which may be waterproofed canvas for use as tarpaulins, tents, awnings and the like. The edge portions of the canvas material 10 are doubled upon itself to form a two ply thickness and these portions are secured by sewed seams 12. At the corners and along the side edge portions is a series of grommets G, which are secured and reinforced in a manner hereinafter described.

Disposed within the doubled edge portions in the region of the grommets are flat reinforcing pieces or strips 14, which, as shown, are rectangular in configuration but may be of any desired shape, such as triangular. As will more fully appear hereinafter, each of the reinforcing strips 14 extends a considerable distance on each side of the grommet. For example, the strip may extend beyond the grommet a distance of the order of the space from the center of the grommet to its periphery. Although the particular distance is not critical, it must be adequate to afford a reinforcement not only for the immediate area of the grommet but also for the adjoining area. If desired, the sewed seams pass through the reinforcing material 14 or, as in the corner portions, the two seams may extend through the reinforcing strip. The strip 14 is preferably of a somewhat stiff material having a certain

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amount of flexibility, such for example as vinyl plastic or polyethylene.

In practice, the reinforcing strips are placed in the desired area and thereafter a hole 13 is punched through both the canvas material (two thicknesses) and the reinforcing strip 14. After the hole is punched through the several plies, as indicated, one of the two grommet parts may be applied, this being the part having a sheet metal ring 15 with a circular row of teeth 16 extending at right angles from the edge of the hole in the ring. It should be understood that the hole 13 is of less diameter than the diameter of the circular row of teeth 16 so that when the ring 15 is applied, the teeth are forced through both thicknesses of the canvass material and also through the reinforcing strip 14 in a region spaced from the edge of the hole.

The other grommet part has a sheet metal ring 17 and an integral outwardly extending sleeve 18 of a size to extend through the hole in the ring 15. The sleeve 18 is then forcibly inserted through the registering holes in the canvas plies and the reinforcing strip 14 and the hole in the ring 15. Then by a suitable tool, such as is well known for this purpose, the free edge of the sleeve 18 is rolled or crimped over against the outer face of the ring 15 and the teeth 16 bent over or clinched inwardly against the adjacent ply of canvas material.

From the above description it will be manifest that an exceedingly secure connection is afforded between the grommet, the reinforcing strip and the canvas material so that it militates satisfactorily against the force exerted by a rope, for example, threaded through the grommet which would otherwise be of sufficient magnitude to tear the grommet from the material. Another advantage of the above construction where the grommet is disposed at a corner of the material is to prevent dog-earing thereto as is typical in such locations. An important feature of the invention is the embedding of the teeth not only in the canvas material but also in the reinforcing strip in a region away from the hole thereby to distribute the stress exerted against the grommet over the adjacent areas of the canvas material remote from the hole through same.

Numerous changes in details of construction, arrangement and choice of materials may be effected without departing from the spirit of the invention, especially as defined in the appended claim.

What I claim is:

A device of the class described comprising a sheet of canvas material the edge portions of which are doubled upon themselves to provide a pocket of two ply thickness, a flat relatively stiff plastic strip of reinforcing material in said pocket for each grommet intended therefor, each grommet consisting of a ring having a circular row of teeth on the inner side and a second ring having an integral central sleeve, the teeth of said first ring extending through both thicknesses of canvas material and said reinforcing strip, there being a hole punched through both thicknesses of canvas material and the reinforcing strip in such manner that the edge of the hole is spaced laterally from said teeth, the sleeve of said second ring extending through said hole with the free end crimped over against the outer face of said first ring and the teeth of said first ring being clinched against the adjacent canvas material, whereby appreciable portions of said plastic strip and canvas materials lie between said clinched teeth and said sleeve so that stresses imposed on the grommet

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are distributed over adjacent areas of the canvas material remote from the hole.

2,562,005
2,795,830

7/1951 Wenzel et al. ----- 24-141 XR
6/1957 Leatherman ----- 24-141

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FOREIGN PATENTS

14,524 1904 Great Britain.

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References Cited

UNITED STATES PATENTS

84,900 12/1868 Norcross ----- 24-141
629,754 7/1899 Popham ----- 24-141

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