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3,207,274

COVERINGS FOR SHELLS AND THE LIKE

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FIG. 1

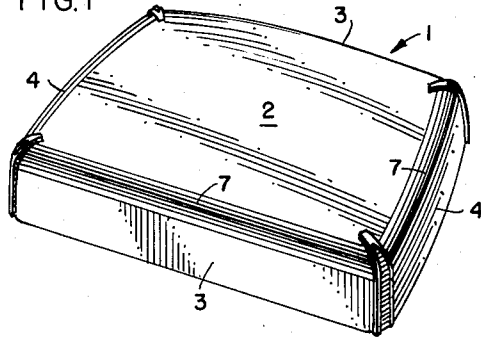


FIG. 2

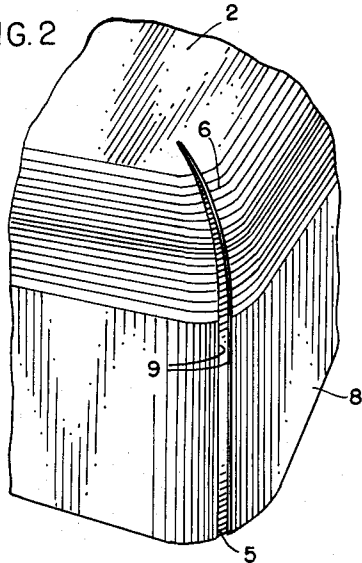


FIG. 3

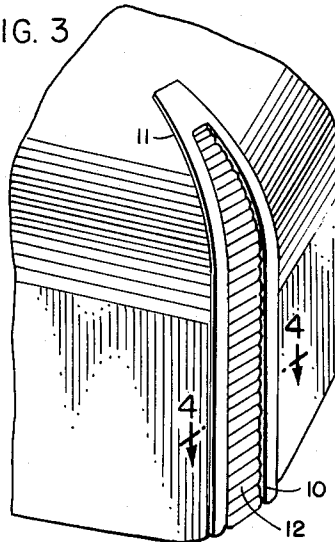


FIG. 4

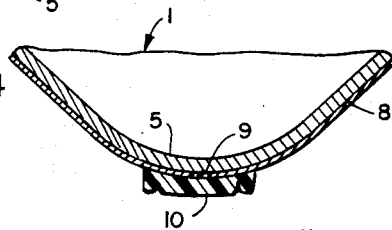
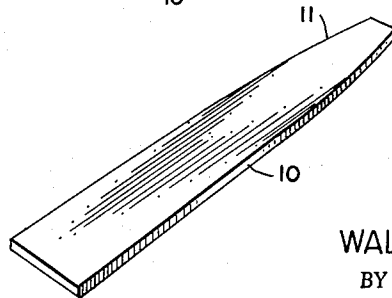


FIG. 5



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COVERINGS FOR SHELLS AND THE LIKE

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4 Claims. (Cl. 190—53)

This invention relates to the covering of hollow shells and the like with a flexible sheeting and, more particularly, pertains to improvements in the covering of hollow shells having rounded corners.

Hollow shells are used as component parts of articles of luggage, phonograph cases, courier cases, portable typewriter cases, etc. These shells are usually covered with a sheet of flexible material, such as leather, imitation leather, thermoplastic sheeting, woven Fiberglas, cloth or the like to improve the appearance of the item. One of the problems encountered in covering a shell with a single sheet of flexible sheeting is that the sheeting must have sufficient stretch so that it can be stretched at the corners of the shell without tearing. The majority of covering materials, however, do not have the requisite amount of stretch to permit their use in coverings of the aforesaid character.

This invention pertains to coverings wherein the cover sheeting may be cut at the portion of the covering across the corners of the shells to which the covering is applied. An area of sheeting is cut out at each corner so that the sheeting will not fold or overlap at the corner when it is adhered to the shell. The side edges of the cut out portion are abutted or are approximately abutted when the sheeting is applied to the shell. A strip of thermoplastic resin or polymer is then heat-sealed on the covered corner of the shell to hide the cut and also to provide a wear-resistant member.

It is, therefore, a primary object of the invention to provide improvements in covering structures and members having rounded corners. Another object of the invention is to provide improvements in the sheet coverings of hollow shells having rounded corners. Still another object of the invention is to provide wear-reinforcements for outer corners of hollow shells. A still further object is to provide wear-reinforcements heat-sealed to the outer corners of sheet-covered hollow shells.

The foregoing and numerous other important objects, advantages, and inherent functions of the invention will become apparent as the same is more fully understood from the following description, which, taken in connection with the accompanying drawings, discloses a preferred embodiment of the invention.

In the drawings:

FIG. 1 is a perspective view of a sheet-covered hollow shell used in the manufacture of articles of luggage, portable cases and the like;

FIG. 2 is a perspective fragmentary view of a corner of the shell of FIG. 1 prior to the application of a thermoplastic, wear-reinforced strip thereon;

FIG. 3 is a perspective, fragmentary view of said corner with a wear-reinforcement strip applied thereon;

FIG. 4 is a section in fragment taken on section 4—4 of FIG. 3; and

FIG. 5 is a perspective view of a wear-reinforcement strip.

Referring to the drawings, there is shown in the illustrated embodiment a hollow shell 1 comprising a side wall 2 and end wall pairs 3, 3 and 4, 4. These walls form a hollow shell adapted to be used as a part of an article of luggage, a portable case, and the like. Two such shells can be hinged together in opposing relationship to form an article of luggage or other hollow container or case.

The hollow shells 1 may be made of any material of suitable rigidity for the use desired. They may be made, for example, from metal, molded fiber, molded Fiberglas, molded wood chips, or the like wherein the fibers or chips are bonded together by a thermoplastic or thermosetting resin. They also may be made from molded thermoplastic or thermosetting resins.

The corners formed at the junctures of the end walls 3, 4 are, for purposes of the invention, preferably rounded corners 5 having dome corners 6. The side wall 2 and the end walls 3, 3 and 4, 4 may be joined by rounded corners 7.

The hollow shell 1 is covered by a flexible sheeting 8 adhered tightly to the walls 2, 3, 4. The corners of the flexible sheeting 8 are cut, prior to its being applied and adhered on the shell 1, to remove a section of the sheeting at each corner so that the cut edges 9 are in abutment or at least approximate abutment when the flexible sheeting is applied to and adhered on the shell. The depth to which the flexible sheeting is cut preferably is sufficient so that the cut extends slightly inwardly of the dome section 6 of the shell, as can be seen in FIG. 2.

The butted joint or the space between the cut edges 9 is covered by a reinforcement strip 10 which is a thermoplastic resin or polymer which is heat-sealable with or adhesively secured to the covering sheet 8. The strip 10 is adhesively secured to or heat-sealed on each corner of the covered shell. The strips 10 are of a length and width sufficient to cover any spacing between the edges 9 of the covering and preferably have dimensions large enough so that the strips 10 act as wear-reinforcement strips which protect the corners of the covered shell against tearing or gouging. If desired, the strips 10 may have tapered ends 11 or embossed designs, e.g., the transverse corrugations 12. The latter may be embossed into the thermoplastic strips by a heated shoe when the strips are heat-sealed on the corners of the covered shell.

The cover sheeting 8 may be a thermoplastic sheeting, such as vinyl sheeting, cloth with a thermoplastic resin or polymer coating on one side thereof and the like. The thermoplastic resin or polymer strips 10 may be pressed against the corners 5, 6 with a transverse and longitudinal curvature corresponding to the curvature of the corners 5, 6 and heat-sealed to the thermoplastic resin or polymer of the cover sheeting 8. Dielectric heat-sealing may be employed for this purpose. The strips 10 may also be sealed on the corners with pressure-sensitive adhesive or with quick-drying, wet adhesive. Similarly, the cover sheeting 8 may be secured in certain instances by heat-sealing to the outer side of the shell 1 or it may be secured thereon by the use of adhesive.

The method of applying the cover sheeting comprises laying the rectangular piece of flexible, cover sheeting 8 on the outer sides of the shell 1 and bonding the cover sheeting to the outer sides of walls 2, 3, 4. The corners of the sheeting preferably are trimmed or cut prior to bonding the cover sheeting on the shell along converging lines to provide a configuration giving the substantially abutted edges 9, 9. The strips 10 are bonded by adhesive or heat-sealing to the outer surface of sheeting 8 over the cut or trimmed edges 9, 9 at each corner to provide finished corners reinforced against wear. The invention is especially useful where the sheeting 8 is composed of polyvinyl chloride and the strips or corner pieces 10 are also composed of polyvinyl chloride.

It is thought that the invention and its numerous attendant advantages will be fully understood from the foregoing description, and it is obvious that numerous changes may be made in the form, construction and arrangement of the several parts without departing from the spirit or scope of the invention, or sacrificing any of

its attendant advantages, the forms herein disclosed being preferred embodiments for the purpose of illustrating the invention.

I claim:

1. A molded structure for use as a hollow shell of an article of luggage and the like comprising a hard, unitary molding of fibrous material defining a substantially rectangular dome wall and four end walls extending about the periphery of said dome wall at substantially right angles thereto and joined with the respective edges of said dome wall by rounded corners, the respective, contiguous ends of said end walls being joined by additional rounded corners, said walls and corners thereby defining a generally rectilinear, hard, hollow, unitary shell with the walls thereof joined by rounded corners as a unitarily molded body, a rectangular piece of flexible cover sheeting of poor stretch quality with a thermoplastic resin outer side secured to and covering the outer side of said walls of said shell, said cover sheeting lying smoothly against said walls and said first-mentioned rounded corners, said rectangular piece of cover sheeting having a segment cut out of each of the four corners thereof, the edges of said cut segments being substantially abutted at said additional corners, and a flexible, wear-reinforcement strip of thermoplastic resin extending along each of said additional rounded corners over said substantially abutted edges, said strips being bonded to said cover sheeting at said additional corners by a heat seal of said thermoplastic resin strips to said thermoplastic resin outer side of said covering.

2. A molded shell structure with cover sheeting thereover comprising a molded hollow shell with a molded rectangular side wall having along each of the four edges thereof an end wall, each end wall being substantially normal to said side wall, an elongated rounded corner extending longitudinally along each of said four edges and joining a respective one of said edges and its respective end wall, additional rounded corners at the four corners of said side wall joining the contiguous ends of the respective end walls, said additional rounded corners

extending at right angles to said first-mentioned rounded corners and intersecting respective pairs of said first-mentioned rounded corners at the four corners of said side wall, the respective junctures of said elongated rounded corners and said additional corners being dome corners, said side wall, said four end walls, said elongated, round corners, said additional rounded corners and said dome corners being integrally-formed as a molding of fibrous material, a flexible cover sheet adhered over the and lying smoothly against outer sides of said side wall, said end walls and said rounded corners, said cover sheet having cut out segments at the four corners thereof, the respective cut edges of said cut out segments being substantially abutted and extending side-by-side along a respective one of said four additional rounded corners and also across a respective one of said dome corners, said cover sheet having a thermoplastic polymer outer surface, and a wear-reinforcement strip of a thermoplastic polymer lying over each pair of the respective, substantially abutted edges and being bonded to said thermoplastic polymer outer surface adjacent said abutting edges.

3. A shell structure as claimed in claim 2 wherein said flexible cover sheet is a thermoplastic polymer sheet having poor, inherent stretch quality.

4. A shell structure as claimed in claim 3 wherein said wear-reinforcement strips are bonded by heat sealing to said outer surface.

References Cited by the Examiner

UNITED STATES PATENTS

2,116,571	5/38	Gurwick	93—35
2,338,035	12/43	Gerold	229—2.5
2,444,722	7/48	Bogoslowsky	229—5.5
2,808,192	10/57	Raisin	229—31
2,994,466	8/61	Thompson	229—30

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