United States Patent [19]

Rawlings

[11] **3,831,230**

[45] **Aug. 27, 1974**

[54] **INTERIOR CAP LINER**

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[52] U.S. Cl. **27/19,** 52/63
[51] Int. Cl. **A61g 17/04**
[58] Field of Search 27/19, 2; 52/63, 222

[56] **References Cited**

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Assistant Examiner—G. F. Dunn
Attorney, Agent, or Firm—Biebel, French & Bugg

[57] **ABSTRACT**

An interior cap liner for a casket is formed as a single, flexible, unitary, self-supporting and self-sustaining member. Structural reinforcing ribs are integrally formed in the liner to reinforce and rigidify it for self-support. The liner may easily be flexed for insertion into the casket cap, but is still strong and rigid enough to support decorative cover means attached exclusively to the liner inner surface. Within the cap, the peripheral edge of the liner rests in an unstressed condition on the casket cap's inwardly directed peripheral flange.

6 Claims, 11 Drawing Figures

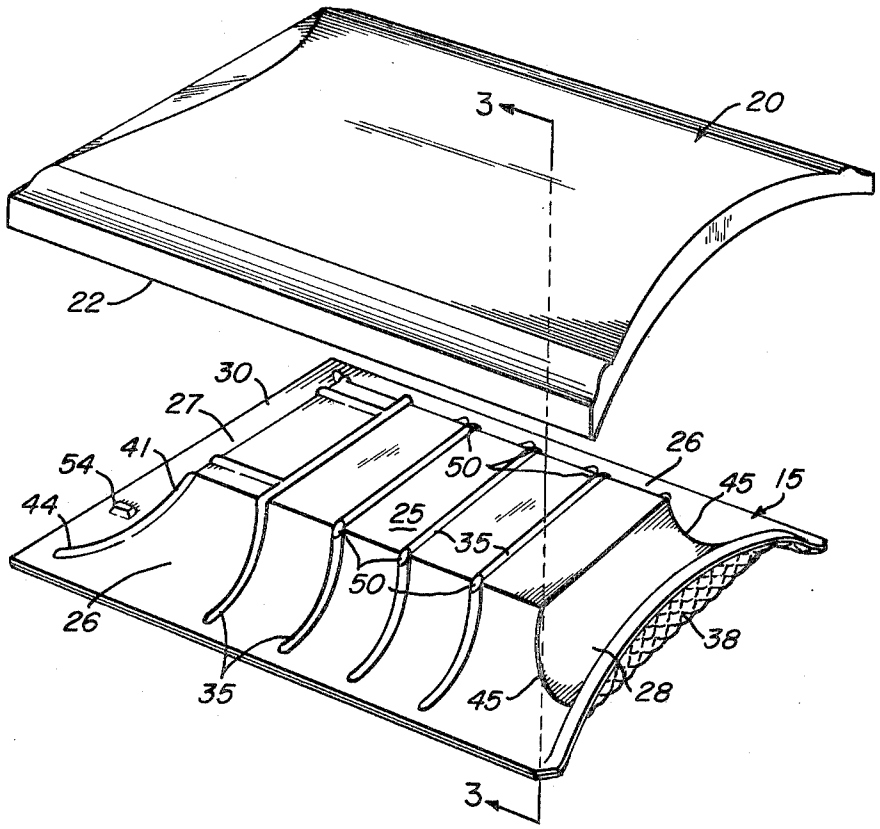


FIG-1

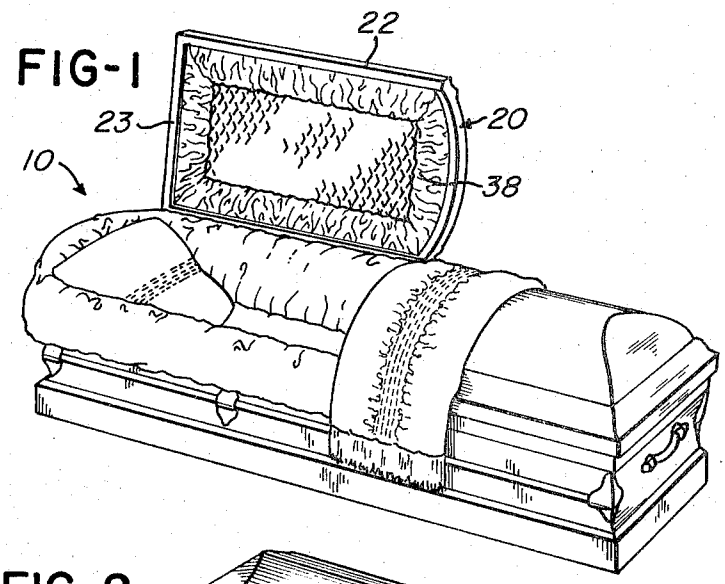


FIG-2

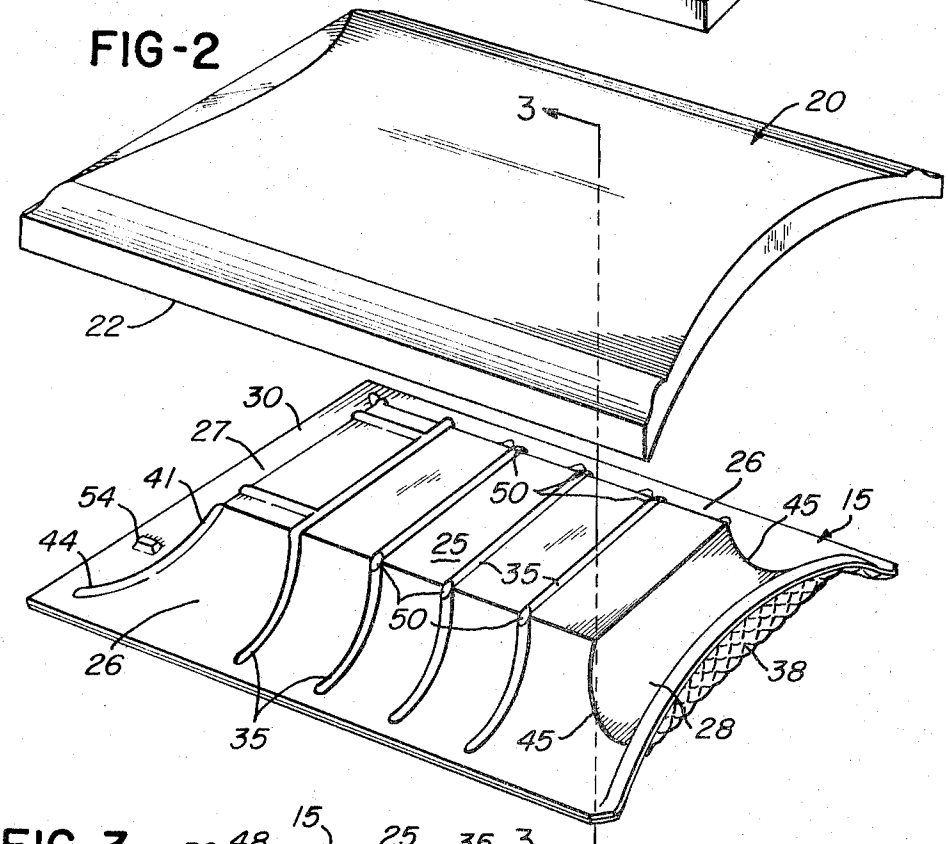


FIG-3

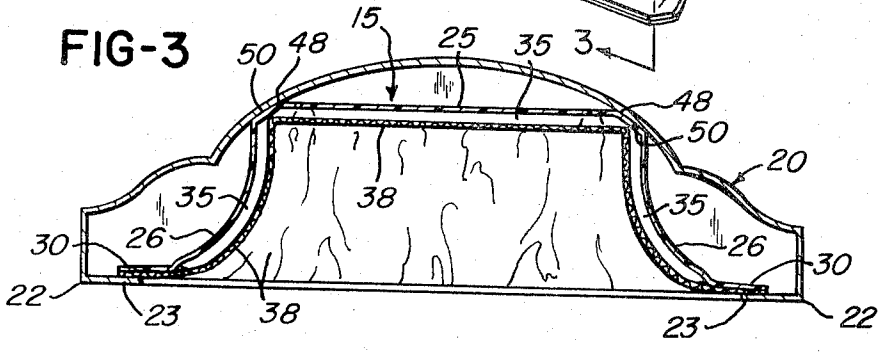


FIG-4

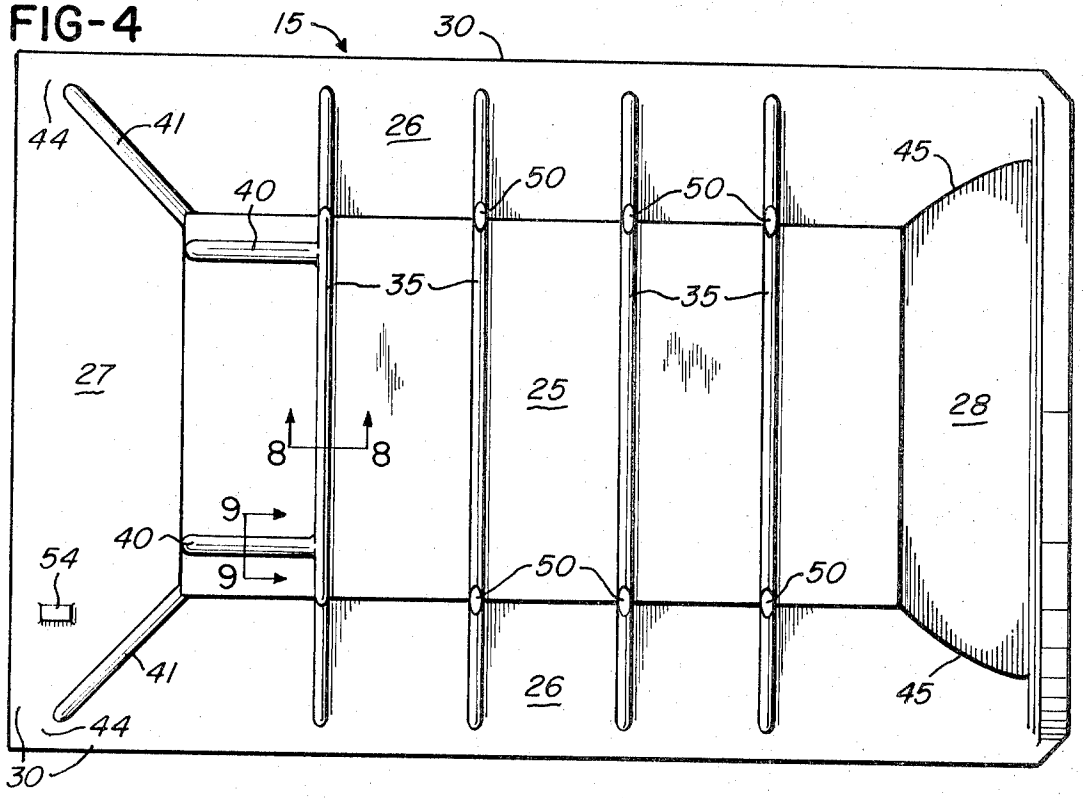


FIG-5

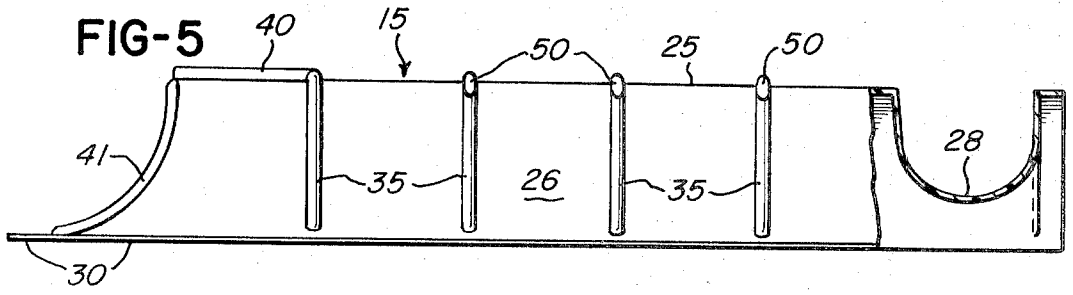


FIG-6

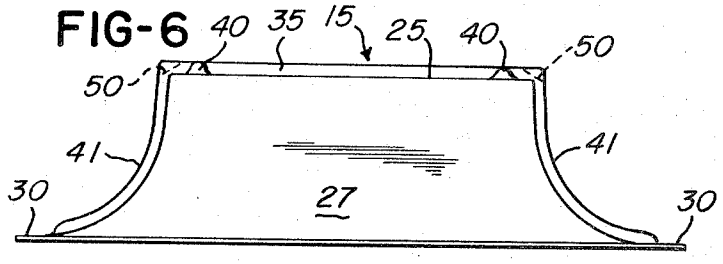


FIG-8

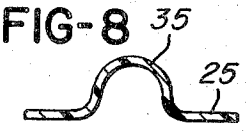


FIG-7

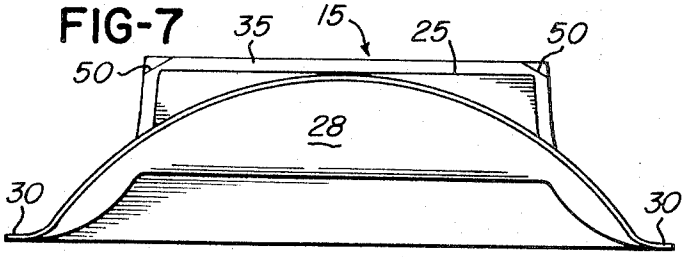


FIG-9

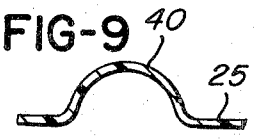


FIG-10

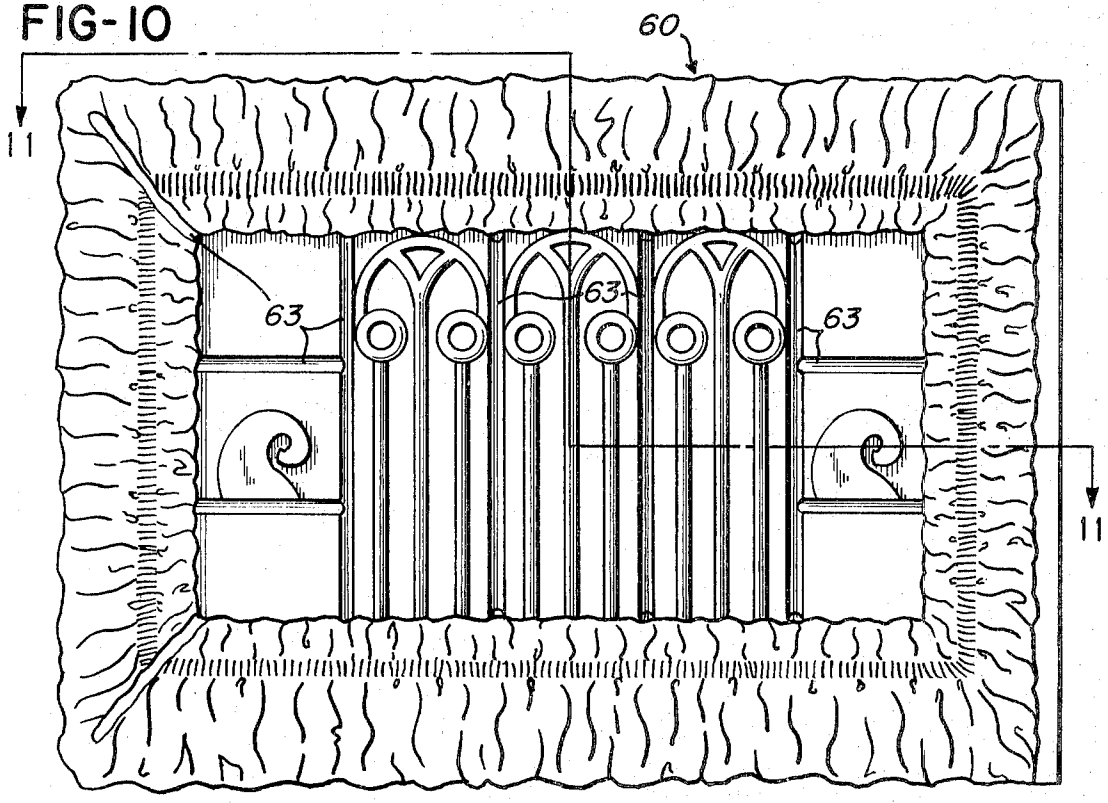
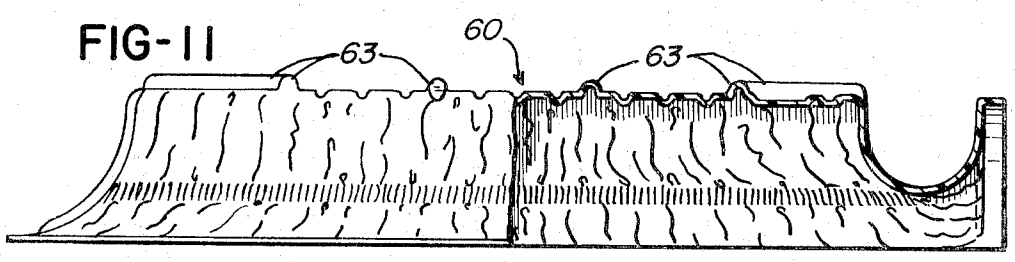


FIG-11



INTERIOR CAP LINER

BACKGROUND OF THE INVENTION

This invention relates to casket constructions, and more particularly to decorative interior linings therefor.

The manufacture of an attractive, upholstered casket has been an expensive and time consuming undertaking. Since the upholstery serves no functional purpose other than decoration, various efforts and suggestions have been made to reduce the high costs of such linings. Certain constructions have succeeded in reducing costs by using cardboard and/or plastic to simulate the appearance of stuffed upholstery, but the not inconsiderable additional weight of the decorative coverings attached to these liners frequently exceeds their strength limits. Experience has shown, for example, that simple liners made of plastic and covered with cloth have been unable to withstand the bumps, shocks, and so on encountered during shipment, and have frequently buckled, cracked, and fallen out of the casket caps. The prior art has attempted to meet this problem through the use of strong, multiple piece, interlocked liner members, the use of additional supporting frameworks, or both, and often in conjunction with special casket cap configurations. While these have provided the necessary support for such artifical liners, they have also added additional costs and complications.

Examples of prior attempts to solve this problem include U.S. Pat. Nos. Re 25,545, 3,157,936, 3,162,923, 3,204,318, 3,340,583, 3,407,459, and 3,487,513. None of these patents, however, discloses a single unitary, self-supporting and self-sustaining liner member. The majority of these references disclose liners fabricated from a multiplicity of pieces which must then be attached to one another before incorporation into the casket cap. Clearly, the manufacture and assembly of such multiple-piece liners involves considerable time and expense.

Several of these references disclose single-piece structures formed from thermo-plastic material. However, none of those structures is self-supporting. Rather, additional structural support and/or reinforcing members must be provided, and in several cases the casket cap must have a unique engaging configuration to clasp and hold the liner in position. As a result, these liners are not truly single-piece structures since they require additional structural members working in concert therewith. Further, installation of these one-piece liners is generally inconvenient since the liners and support members must be carefully engaged and interlocked. Not only are the costs thus increased, but the inconveniences and drawbacks remain since the same difficulties are again encountered whenever a customer wishes to substitute a different liner for the one originally shipped from the factory. Then the original liner must be disengaged from the retaining means, hopefully without damage thereto, and the other liner installed and properly engaged with the separate retaining members.

SUMMARY OF THE INVENTION

Briefly, the present invention provides an inexpensive, uncomplicated, and direct solution to the above problems. In the present invention the interior cap liner for the casket is formed from but a single piece of molded thermo-plastic material. The single, flexible, unitary liner member is made self-sustaining and self-supporting by the incorporation thereinto of integral structural reinforcing ribs. The reinforcing ribs rigidify the liner and enable it easily to support several pounds of decorative covering while simply resting in an unstressed manner on the peripheral flange of the lower edge of the casket cap.

The reinforcing ribs are generally curved along a radius in order to minimize the occurrence of stress points therein. Sharp corners and abrupt changes in the rib surface contours are therefore avoided, to prevent the ribs from cracking at such stress points. This is particularly important since the liner of this invention is completely free of additional external support members.

The edges of the central upper panel of the liner are located nearly adjacent the underside of the cap, and generally flattened locator surfaces are incorporated into several of the ribs at these points. These flattened surfaces engage the cap to locate and maintain the orientation of the plastic liner relative to the casket cap.

The interior cap liner of this invention may be used on any type of casket, including full open cap, perfection half couch, half couch, and hinge panel caskets. The ribs are provided as a series of generally parallel ribs extending from the front edge of the cap to the rear edge, making this invention fully compatible with any desired cap length.

Where additional economy is desired, the use of separate decorative cover means attached to the inner surface of the liner and supported thereby may be omitted. Instead, a decorative configuration may be fabricated and formed integrally into the liner member itself, as long as the structural reinforcing ribs are still included. However, the structural reinforcing ribs may be disguised into the decorative configuration itself, so as to belie their presence. They may be discontinuous, sinuous in shape, etc., as long as they combine and cooperate to provide the necessary structural and self-supporting rigidity.

This invention particularly provides for ease of assembly and ease of substitution of the casket cap liners, since the reinforced, self-supporting and self-sustaining liners of this invention are flexible enough to be easily insertable into the casket cap. The assembler simply rolls the edges slightly inward, slips the liner into the cap, and then releases the liner to allow it to spring back to its normal shape and to rest comfortably on the cap flange. The smooth curvature and contour of the reinforcing ribs then readily sustains the liner therein without the need for separate support and reinforcement.

It is therefore an object of this invention to provide a single, flexible, unitary, self-supporting, self-sustaining liner member for a casket cap; a liner member easily and flexibly insertable into the casket cap; having a peripheral edge which rests unstressed on the peripheral lower edge flange of the cap; having structural reinforcing ribs formed integrally therein to reinforce and rigidify the liner member for self-support on the cap flange; having reinforcing ribs which are curved and free of abrupt surface contour changes to minimize stress points thereon; having a series of generally parallel, transverse ribs extending substantially from the front edge to the rear edge of the cap; which is sup-

ported exclusively on the cap flange and is completely free of external support; which may have locator surfaces to engage the underside of the casket cap to maintain the orientation of the liner member relative to the casket; which is fully able to support a decorative cover means attached exclusively to the inner surface of the liner; which may have a decorative configuration fabricated and formed integrally into the liner member and incorporating at least some of the structural reinforcing ribs; which may be manufactured rapidly and inexpensively; which is readily adapted for use in virtually any casket; which can be readily and quickly interchanged for substitution of one design for another; and which will be self-retaining and self-supporting in the casket cap during all the stresses, bumps, vibrations, and so on of transit, without damage, while supporting the weight of additional decorative covering means attached to and supported exclusively by the liner member.

Other objects and advantages of the invention will be apparent from the following description, the accompanying drawings and the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a perfection half couch casket incorporating the interior cap liner of this invention, and in which a separate decorative covering means supported exclusively by the liner has been attached thereto;

FIG. 2 is an exploded perspective view of the cap and decorated interior cap liner of FIG. 1;

FIG. 3 is a cross-sectional view of the assembled cap and liner of FIG. 2, taken on line 3—3 thereof;

FIG. 4 is a top view of the liner of FIGS. 1–3, without the separate decorative covering;

FIG. 5 is a partially broken-away side view of the FIG. 4 liner;

FIG. 6 is an end view of the liner looking from left to right in FIG. 5;

FIG. 7 is an end view of the liner looking from right to left in FIG. 5;

FIG. 8 is a cross-sectional view of one of the reinforcing ribs taken generally on line 8—8 of FIG. 4;

FIG. 9 is a cross-sectional view of another reinforcing rib taken generally on line 9—9 of FIG. 4;

FIG. 10 is a perspective view of a modified interior cap liner according to the present invention, having a decorative configuration fabricated and formed integrally therein, and wherein the structural reinforcing ribs are incorporated into the decorative configuration; and

FIG. 11 is a partially broken-away cross-sectional view taken on line 11—11 of FIG. 10.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to the drawings, and more particularly to FIG. 1, there is illustrated a casket 10 incorporating the interior cap liner 15 of this invention. Casket 10 includes a casket cap portion 20 at the head end of the casket receiving the interior cap liner 15 therein. The lower edge 22 of cap 20 includes a peripheral, inwardly directed flange 23 extending entirely therealong and forming a ledge on which the interior cap liner 15 rests.

Liner 15 is a single, flexible, unitary structure formed preferably of easily molded thermo-plastic material, such as polystyrene or polyethelene. Liner 15 includes a central panel portion 25, convexly curved side roll portions 26, a convexly curved head roll portion 27, and a convexly curved bridge roll portion 28. Portions 26, 27, and 28 include a peripheral edge 30 which rests upon cap flange 23 when liner 15 is inserted into cap 20 (FIG. 3).

In order to impart the necessary strength and rigidity to liner 15 to enable the liner to the self-supporting and self-sustaining within cap 20 completely free of additional external support members, liner 15 includes a plurality of transverse, generally straight, unbroken, and parallel structural reinforcing ribs 35 which are formed integrally in liner member 15 as part of the shape and contour thereof. In essence, the ribs are the liner in the regions thereof where the ribs are located. Ribs 35 are arranged as a series which extends substantially from the front edge of the cap to the rear edge thereof, substantially from one longitudinal edge to the other, with each rib curved along the side roll portions 26 and extending across central panel portion 25. The ribs are generally curved in cross section, as may be seen particularly with reference to FIGS. 8 and 9, and are essentially free of abrupt changes in surface contours (FIGS. 2–9). The curvature and smooth contour of the ribs prevent the formation of stress points therein which would otherwise result wherever forces converged at sharp corners, and enable the liner 15 to be self-supporting while resting exclusively on cap flange 23, and to support several additional pounds of decorative covering means such as the cloth covering means 38 shown in FIGS. 1–3. The ribs maintain the shape of liner 15 under these loads and prevent the dislocation thereof during transit. The covering 38 may be attached to the liner by any conventional means, such as by gluing or by stapling.

Additional reinforcing ribs such as longitudinal ribs 40, having a cross-section substantially as shown in FIG. 9, are incorporated adjacent the head roll portion 27. Ribs 40 do not extend beyond central panel portion 25 onto the head roll portion since the ribs impart sufficient rigidity to the head roll even though located only on panel 25. The rigidity is also enhanced by corner ribs 41 located along the corners 44 between rolls 26 and 27. Where a half couch liner having a bridge roll portion 28 is used, as illustrated, additional corner ribs along the corners 45 between side rolls 26 and bridge roll 28 have been found unnecessary due to the strength imparted by the extensive and deep curvature of the bridge roll itself (FIG. 5).

When liner 15 is incorporated into cap 20, portions of liner 15 are brought adjacent a region 48 of the cap on the underside thereof (FIG. 3). This invention therefore includes several locator surfaces 50 which are provided on ribs 35 adjacent region 48 to engage the adjacent underside of the casket at region 48 to maintain the orientation of liner 15 relative to casket cap 20. In the illustrated embodiment, three such locator surfaces 50 are provided on each side of liner 15, and it has been found that these are sufficient to prevent the liner from shifting during transit. Other locator surfaces may of course be included in the liner 15 according to the needs of the particular design, or panel 25 may be curved itself to follow the inner contour of cap 20.

FIGS. 2 and 4 show a knee brace bracket indent 54 also molded into liner 15 to accommodate the knee

brace bracket (not shown) commonly included with caskets such as casket **10**.

Where it is not desired to use a separate decorative covering means **38**, the interior cap liner of this invention may have a decorative configuration fabricated and formed integrally into the liner itself. FIGS. **10** and **11** illustrate such a decorative liner **60** in which the decorative configuration in the liner member has been designed for direct use as the exposed decorative surface of the inside of cap **20**. Thus no additional decorative covering, such as cloth or flocking, is required, resulting in further simplicity and economy. Nevertheless, integral structural reinforcing ribs according to this invention must still be included in liner **60**, to impart the necessary strength and rigidity so that the liner will be self-supporting and self-sustaining when it rests in an unstressed condition on flange **23** in cap **20**. The reinforcing ribs **63** in liner **60** are thus camouflaged into the decorative configuration itself. Ribs **63** have the same configuration as ribs **35, 40,** and **41**, but may just as well be curved, sinuous, discontinuous, and so on. It is necessary only that the composite rib configuration be such that the ribs interact to provide the same structural strength afforded by ribs **35, 40,** and **41** (FIGS. **2–9**).

Other appropriate insert configurations may be selected according to this invention, according to the final effects desired. For example, side rolls **26** may be flat, panel **25** may be curved, the ribs may be formed upwardly, downwardly, or both, and so on.

It is also understood that while it is preferred to form the liner by a vacuum or pressure forming operation from thermo-plastic sheet material, it is within the scope of the invention to form the liner from suitable thermoplastic material such as by an injection molding operation.

While the forms of apparatus herein described constitute preferred embodiments of this invention, it is to be understood that the invention is not limited to these precise forms of apparatus, and that changes may be made therein without departing from the scope of the invention.

What is claimed is:

1. An improved casket cap liner adapted to be received and self-supporting on the inwardly turned peripheral flange of a casket cap, comprising a molded, unitary, self-supporting liner member molded from a single sheet of thermo-plastic material and having integrally molded therein a transverse series of generally parallel ribs extending substantially from the front edge of said cap to the rear edge thereof, said liner member being supported exclusively on the cap flange, said ribs maintaining the shape of said liner member and preventing dislocation thereof during transit, said member having a generally flat central portion and front and rear convexly curved portions, the junction regions between said flat and curved portions being positioned closely adjacent the inside surface of said cap, and integral locating means formed on said liner at said junctions for positioning said liner in said cap.

2. The liner of claim **1** wherein said integral locating means is formed in said ribs.

3. A casket cap liner for use with a casket cap formed with an inwardly directed cap-retaining flange on the lower edge thereof defining a cap-receiving opening, comprising:

a. a flexible, unitary, self-supporting and self-sustaining liner member formed of thermoplastic sheet material of substantially uniform thickness, said liner member having a perpheral dimension somewhat larger than the cap opening and terminating in a marginal edge adapted to rest within the cap in unstressed relation on an inside surface of the cap-retaining flange, and

b. a plurality of transversely elongated structural reinforcing ribs integrally formed with and from said member, said ribs being generally curved in cross section and essentially free of abrupt changes in surface contours to stiffen and rigidify said member for the self-support thereof when resting on the flange and to eliminate the need for additional stiffener elements.

4. The liner of claim **3** further comprising decorative covering means attached exclusively to the lower surface of said liner member and supported exclusively by said liner.

5. The liner of claim **3** further comprising a decorative configuration fabricated and formed integrally in the sheet material forming said liner member, and wherein at least some of said structural reinforcing ribs are incorporated into and are formed as part of said decorative configuration.

6. The liner of claim **3** further comprising a plurality of locator surfaces formed as an integral part of said member and proportioned to engage the adjacent surface of the cap inwardly of the flange to maintain a fixed orientation of said member relative to the cap.

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