

RAD: 12-165292- -2	FECHA: 2013-08-30 09:42:06
DEP: 2020 DIRECCION DE NUEVAS CREACIONES	EVE: 1 REGISTRO/DEPOSITO/CONCESION/DEPOSITO
TRA: 3 PATENTES DE MODELO DE UTILIDAD	FOLIOS: 5
ACT: 519 PRESENTACION	

Abogado(a)/Señor(a)
MARIA VICTORIA HENAO HERNANDEZ

Asunto:	Radicación:	12-165292- -2
	Trámite:	3
	Evento:	1
	Actuación:	519
	Oficio:	16195
	Folios:	5

Patente de Invención				Patente de Modelo de Utilidad	X
Vía Nacional	X				
Vía PCT (Fase Nacional)		Capítulo I		Capítulo II	
No. Solicitud Internacional					
Fecha de Presentación Internacional					

Como resultado del Examen de Fondo realizado, con fundamento en el artículo 85 y en concordancia con el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica:

Descripción:	Rad. N° 12-165292-00000-0000	24/Septiembre/2012
Reivindicaciones:	Rad. N° 12-165292-00000-0000	24/Septiembre/2012
Dibujos:	Rad. N° 12-165292-00000-0000	24/Septiembre/2012

En el presente documento se aplicará lo establecido en la Circular Única en su Título X, con respecto a que cuando la solicitud contenga más de diez (10) reivindicaciones y no se haya pagado la tasa complementaria, sólo se estudiarán las cubiertas por la tasa pagada al momento de realizar el examen de patentabilidad consagrado en el artículo 45 de la Decisión 486.

Título de la solicitud: “Moldes reutilizables y desarmables para conformar ataúdes” (Fl. 1).

El problema planteado en esta solicitud, consiste la necesidad de evitar los problemas generados en la fabricación de ataúdes convencionales, entre los cuales, están los problemas medioambientales por el uso de la madera, como la deforestación, y el alto costo debido a la cantidad de láminas de madera que se necesitan en su conformación.

Para resolver este problema técnico, la solicitud en estudio propone un molde para la conformación de ataúdes, que se caracteriza por una lámina con bordes transversales y longitudinales, los cuales tienen dobleces con una serie de orificios, para acoplarse con otros moldes mediante una unión atornillada.

El objeto de la presente Solicitud se relaciona con la Clasificación Internacional de Patentes (CIP): A 61 G 17/00.

3. Reivindicaciones relativas a un uso o a un segundo uso (Art 14 y 21 D 486)

La reivindicación 1, que se refieren al molde para conformar ataúdes, ya patentado, no puede ser objeto de nueva patente, por el simple hecho de atribuírsele un uso distinto al originalmente comprendido por la patente inicial, de acuerdo con el Art 21. Lo anterior, debido a que tal y como está redactada la reivindicación citada, las características reclamadas en ésta ya habían sido enseñadas previamente en el documento D3, lo cual se demuestra en el examen de patentabilidad.

4. De la Solicitud de Patente

Reivindicaciones (Art 30 D 486, Art 22 PCT)

El capítulo reivindicatorio no es claro porque:

- 1- Los números de referencia no se muestran en los dibujos, lo cual dificulta identificar las características estructurales en los mismos, por lo tanto, no se logra identificar con facilidad cuales son los bordes longitudinales o transversales de la lámina que se reclama. Se sugiere al solicitante incluir dichos números en los dibujos, con el fin de dar mayor claridad a la solicitud.
- 2- La expresión *“para acoplarse entre sí a otros moldes mediante el ajuste de tornillos y tuercas”* (reivindicación 1), define una función, efecto, ventaja o resultado a alcanzar de los orificios del producto reclamado. De acuerdo con lo anterior, se sugiere al solicitante eliminarla.
- 3- En la reivindicación 5, se reclama el ataúd el cual es un elemento ajeno al producto reclamado. De acuerdo con lo expuesto en la solicitud, se entiende que su objeto se relaciona con el molde para la conformación del ataúd, y no el ataúd como tal. De acuerdo con lo anterior, se sugiere eliminar la reivindicación 5 ya que no está relacionada con el objeto de la solicitud.

Cabe agregar, que las características del molde que se mencionan en dicha reivindicación, ya habían sido reclamadas en la reivindicación 2, por lo tanto, ésta también carece de concisión.

- 4- Se presentan incoherencias entre la reivindicación 3 y la reivindicación 6, ya que en la reivindicación 3 se menciona que la longitud de la lámina varía entre 50 cm hasta 220 cm, mientras que en la reivindicación 6 se indica que esta misma longitud está entre los

20 cm hasta 40 cm. De acuerdo con lo anterior, se sugiere al solicitante definir un único rango concreto.

Descripción (Art 28 D 486)

Al igual que en las reivindicaciones, en la descripción se presentan números de referencia que no están incluidos en los dibujos. Cabe aclarar, que dichos números deben guardar coherencia entre la descripción, las reivindicaciones y los dibujos. Por lo tanto, se sugiere al solicitante hacer las correcciones correspondientes.

Por su parte, tampoco se logra identificar un rango concreto para la longitud de la lámina (1) a través de sus bordes longitudinales (3), por lo cual, se sugiere definir claramente un rango concreto.

5. Determinación del Estado de la Técnica

El estado de la técnica se determinó con base en la fecha de presentación de la solicitud de patente nacional: septiembre 24 de 2012, y se encontraron los siguientes documentos que anticipan el objeto de esta solicitud:

Item	Documento	Título	Fecha de Publicación
D1	US 6'745.442	'Ready to assemble metal casket'	8/Junio/2004
D2	US 1'989.962	'Casket'	5/Febrero/1935
D3	CO 03-100.558	'Encofrado metálico con accesorios para moldeado de concreto'	30/Noviembre/2004

El documento D1 ¹ divulga un ataúd de metal que puede conformarse fácilmente en una locación remota, debido a que posee diferentes piezas para su armado (resumen).

El documento D2 ² divulga mejoras en el diseño de ataúdes, no solo en funcionalidad en la interacción de sus características estructurales, sino también en su estética (Pág. 1, líneas 12 a 19).

El documento D3 divulga una formaleta metálica que, en general, consta de una estructura metálica que, junto con accesorios, conforma un conjunto de elementos modular, utilizado para la formación de muros, divisiones o paredes (Resumen, Anexo D1-1).

6. Examen de Patentabilidad (Art 14 D486)

Novedad (Art 16 D486)

La reivindicación 1 consiste en un molde para conformar ataúdes caracterizado *“porque consiste de una lámina alargada (1) que está conformada por dos bordes transversales (2) y dos bordes longitudinales (3)...”* (Ver *pág. 12 incluida bajo el Rad. N° 12-165292-00000-0000*).

Comparación de las características técnicas **esenciales**, con las del Estado de la Técnica:

Características esenciales	D1	D2	D3
Molde para conformar bloques caracterizado por:	Ataúd caracterizado por:	Ataúd caracterizado por:	Formaleta caracterizada por:

1 <https://docs.google.com/viewer?url=patentimages.storage.googleapis.com/pdfs/US6745442.pdf>

2 <https://docs.google.com/viewer?url=patentimages.storage.googleapis.com/pdfs/US1989962.pdf>

Lámina alargada que está conformada por dos bordes transversales y dos bordes longitudinales, los cuales se disponen entre sí para conformar cuatro esquinas.	Lámina alargada (22) que comprende dos bordes transversales y dos bordes longitudinales, los cuales se disponen entre sí para conformar cuatro esquinas (Fig. 3).	Lámina alargada con dos bordes longitudinales y dos bordes transversales, los cuales se disponen entre sí para conformar cuatro esquinas (Fig. 1; Pág. 1, línea 44).	Lámina alargada (11) conformada por dos bordes transversales y dos bordes longitudinales, los cuales se disponen entre sí para conformar cuatro esquinas (Anexos D1-Fig. 1, D1-Fig. 5 y D1-2).
La lámina además comprende una superficie externa y una superficie interna hueca.	La lámina (22) además comprende una superficie externa y una superficie interna hueca (Figs. 2C y 2E).	La lámina además comprende una superficie externa y una superficie interna hueca (Fig. 1).	La lámina (11) además comprende una superficie externa y una superficie interna hueca (Anexos D1-Fig. 1 y D1-Fig. 5).
Los bordes transversales tienen dobleces y los bordes longitudinales tienen dobleces a manera de lengüetas que exhiben una serie de orificios.	Los bordes transversales tiene dobleces (30), (24) y (25) y los bordes longitudinales cuentan con la lengüeta (52) con sus correspondientes orificios (Fig. 3; Col. 6, líneas 1 a 18).	Los bordes longitudinales y transversales tienen dobleces (52) a manera de lengüetas que exhiben una serie de orificios (54) (Fig. 1; Pág. 1, línea 44).	Los bordes transversales tienen dobleces (13) y los bordes longitudinales tienen dobleces (2) a manera de lengüetas que exhiben una serie de orificios (14) (Anexos D1-Fig. 1 y D1-Fig. 5).

Las características **esenciales** del molde de la reivindicación 1 habían sido divulgadas previamente en D1 a D3. En consecuencia, la reivindicación 1 no es nueva.

7. Conclusión

Los requisitos de Patentabilidad de la presente Solicitud están afectados así:

Item	Documento	Reivindicaciones afectadas	Requisito que afecta
D1	US 6'745.442	1	Novedad
D2	US 1'989.962	1	Novedad
D3	CO 03-100.558	1	Novedad

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de treinta (30) días contados a partir de la fecha de notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

Se invita al solicitante se sirva indicar, si así lo considera, su renuncia al término faltante de treinta (30) días para dar respuesta a este requerimiento y presentarla por escrito.

Finalmente, se le recuerda al solicitante que si como respuesta a este requerimiento llegara a modificar el capítulo reivindicatorio y éste contenga más de diez (10) reivindicaciones, no pagará la tasa de modificación voluntaria pero sí la correspondiente al pago por reivindicación adicional.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Única No. 10 de 2001.



JOSÉ LUIS SALAZAR LÓPEZ
Director de Nuevas Creaciones (c)

El anterior requerimiento fue notificado por fijación en lista, de fecha 2013-09-03

Elaboró: Monica Andrea Gutierrez Almonacid
Revisó: Rosa Patricia Tellez Chavarro



US006745442B2

(12) **United States Patent**
Biondo et al.

(10) **Patent No.:** **US 6,745,442 B2**
(45) **Date of Patent:** **Jun. 8, 2004**

(54) **READY TO ASSEMBLE METAL CASKET**

(75) Inventors: **John P. Biondo**, Aurora, IN (US); **Carl J. Holbert**, Batesville, IN (US); **Walter A. Hullemeyer**, Batesville, IN (US); **Leonard D. Kincer**, Sunman, IN (US); **Louis J. Scheele**, Batesville, IN (US)

(73) Assignee: **Batesville Services, Inc.**, Batesville, IN (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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Primary Examiner—William L. Miller

(74) *Attorney, Agent, or Firm*—Wood, Herron & Evans, L.L.P.

(21) Appl. No.: **09/911,323**
(22) Filed: **Jul. 23, 2001**
(65) **Prior Publication Data**
US 2003/0029008 A1 Feb. 13, 2003

Related U.S. Application Data

(62) Division of application No. 09/356,550, filed on Jul. 19, 1999, now Pat. No. 6,301,758.
(51) **Int. Cl.**⁷ **A61G 17/00**
(52) **U.S. Cl.** **27/6; 27/4; 27/10**
(58) **Field of Search** **27/4, 6, 10, 2; 220/6, 7, 680; 413/1**

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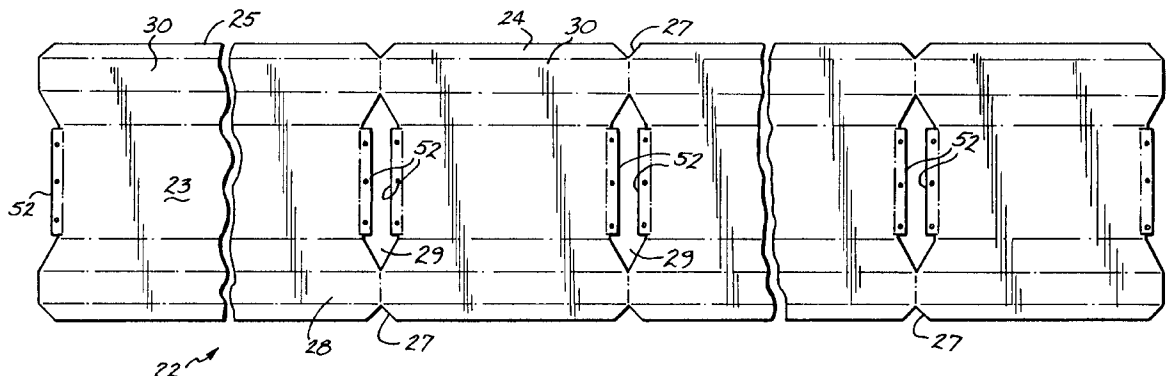
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(57) **ABSTRACT**

A metal casket that is readily assembled at a location remote from the location of manufacture. The casket has several different potential embodiments. For example, first and second tabs on respective first and second side walls are overlapped to form a joint connecting the first and second walls. In another embodiment, a plurality of side walls has peripheral slots extending from lower sections of respective walls. A bottom has a periphery extending into the peripheral slots of the side walls to join the bottom and the side walls together. In a further embodiment, a portion of a plurality of side walls have an upward opening groove for receiving a decorative material. In a still further embodiment a casket cover includes a cap providing an exterior finish of the casket and a dish disposed within the cap to provide an interior finish for the cover of the casket. The cover further has a frame with a first slot for receiving an edge of the cap and a second slot for receiving an edge of the dish. A header is connected to the cap and provides support for the dish and the frame to form an end of the cover.

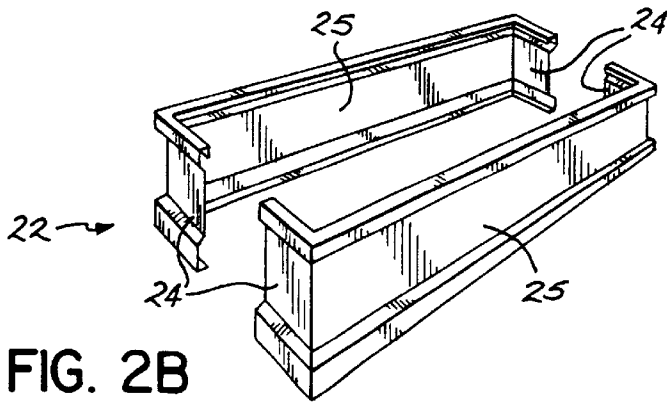
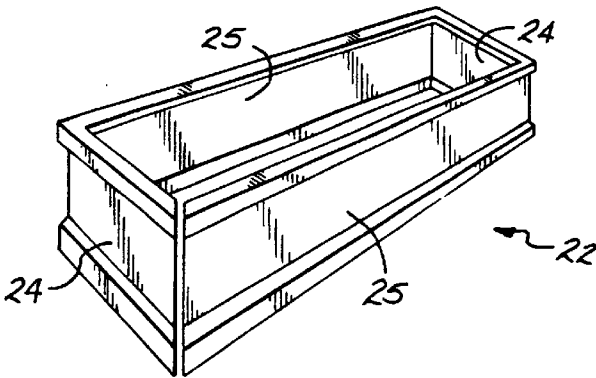
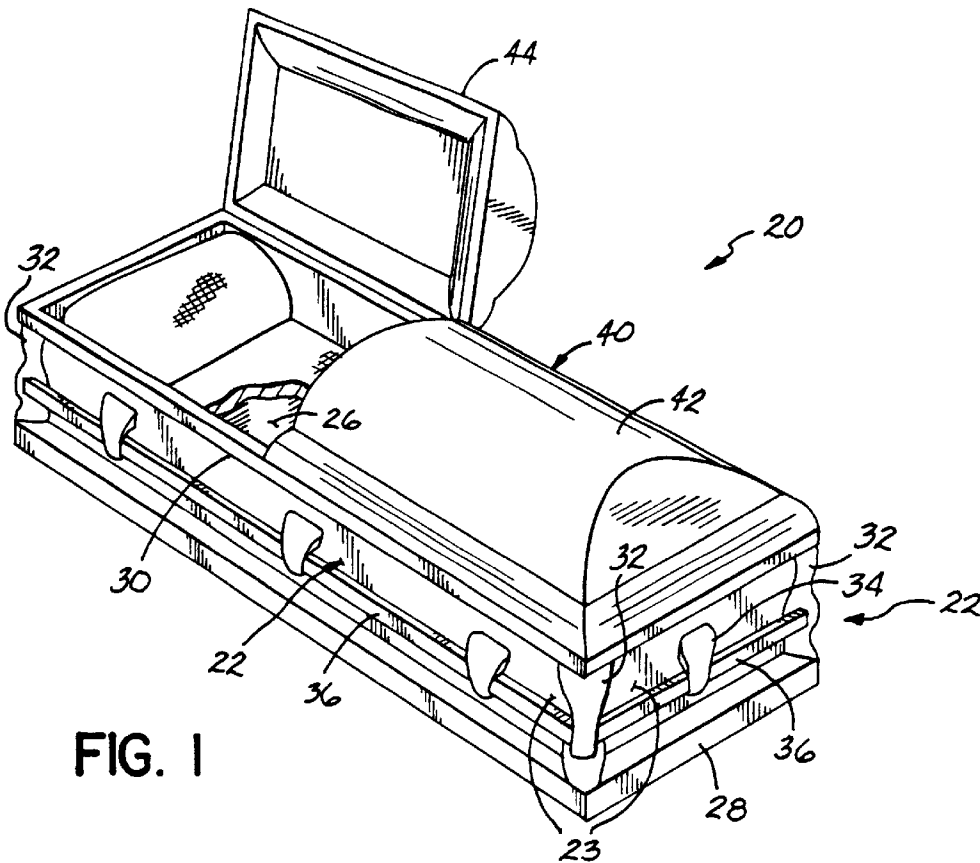
33 Claims, 25 Drawing Sheets



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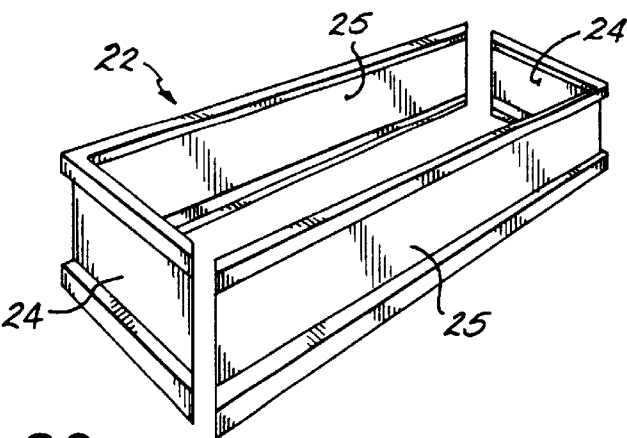


FIG. 2C

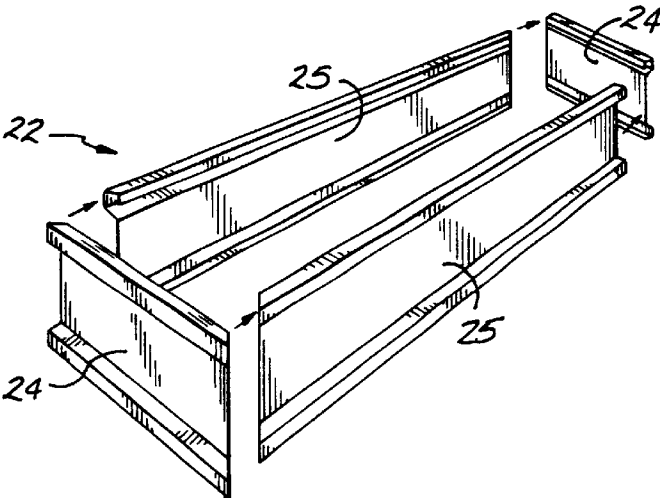


FIG. 2D

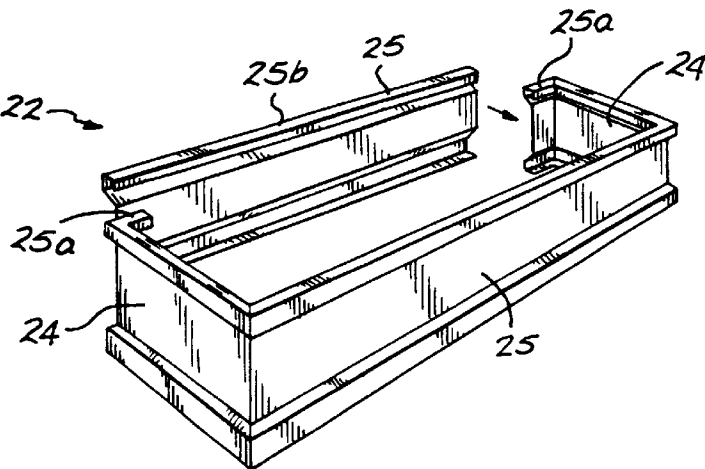


FIG. 2E

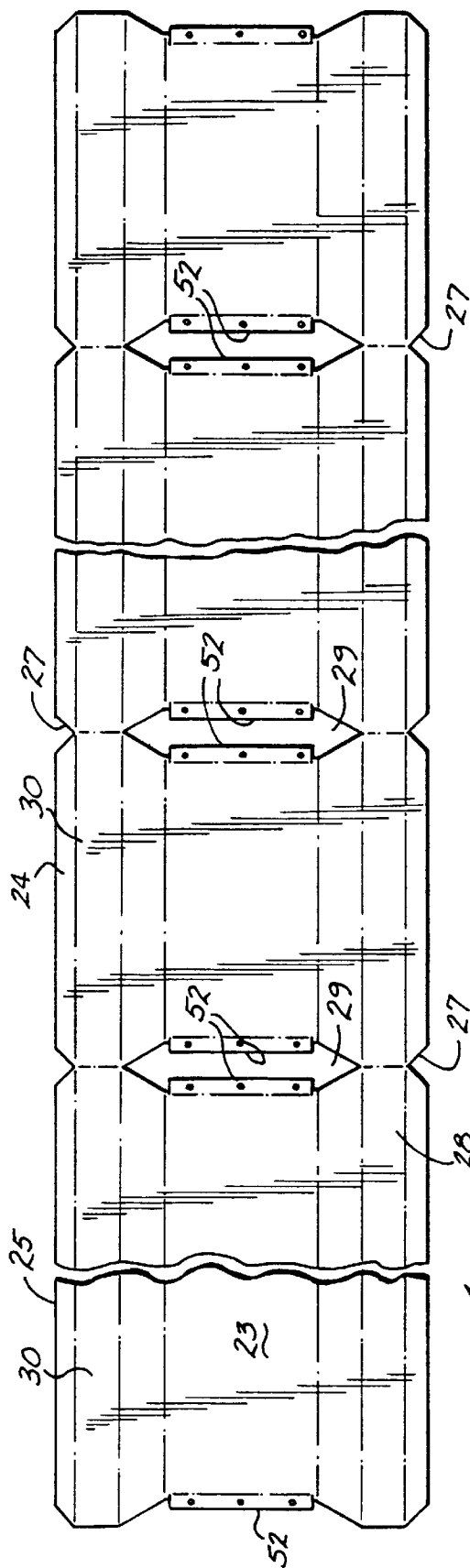


FIG. 3

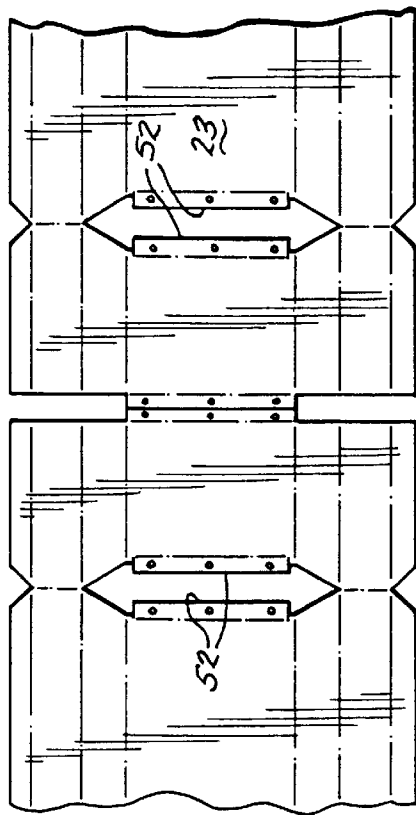


FIG. 3A

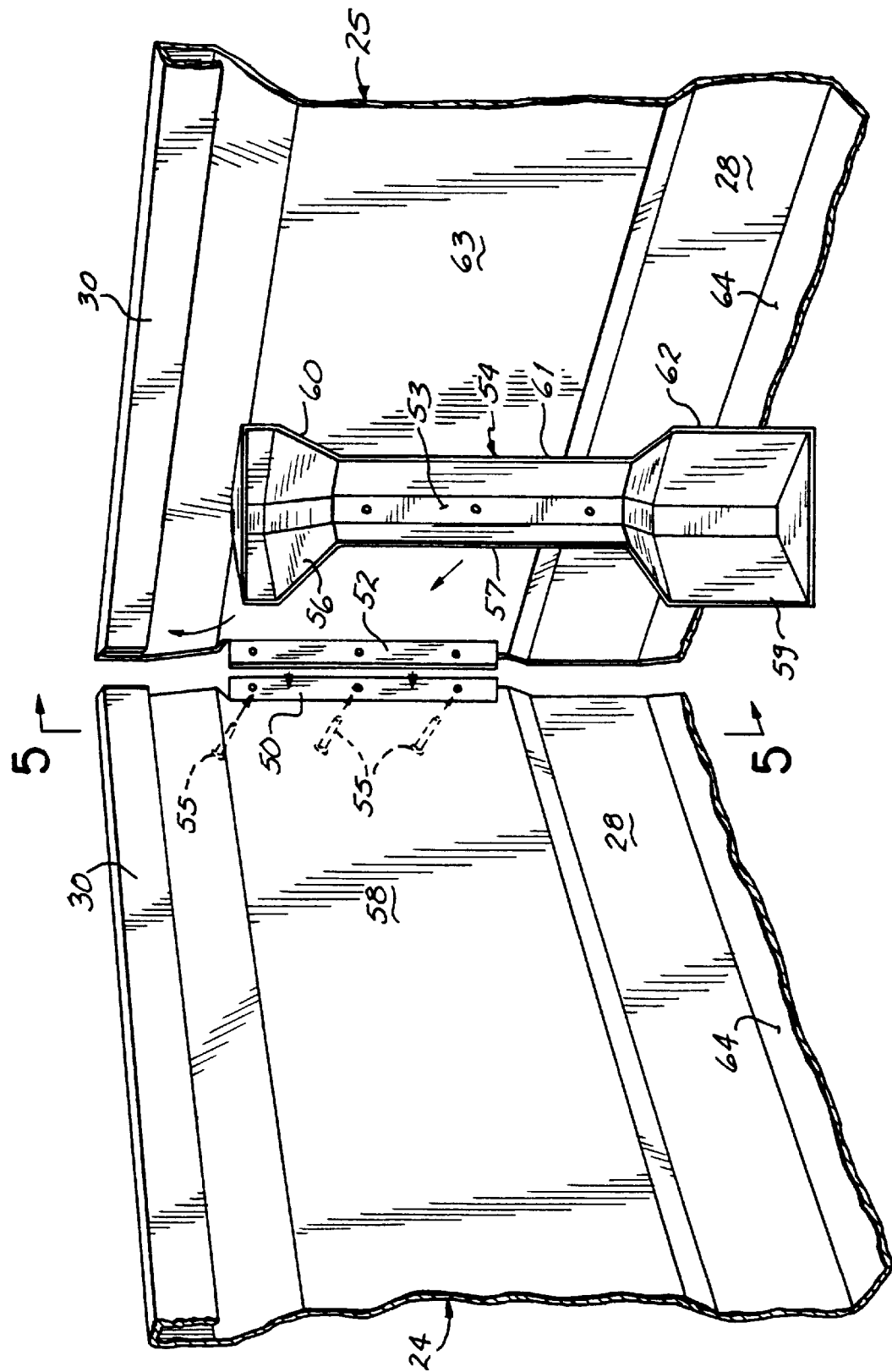


FIG. 4

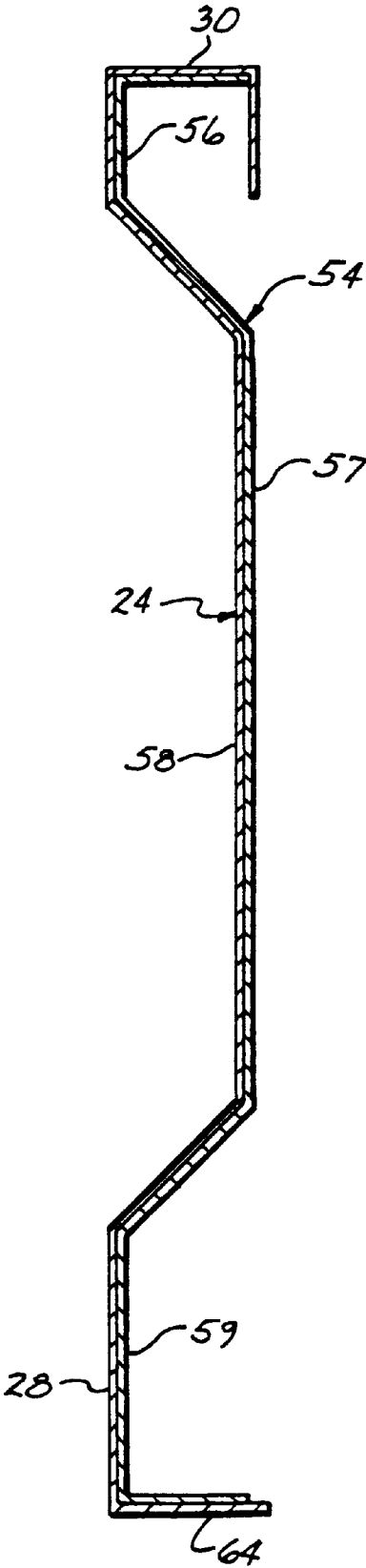


FIG. 5

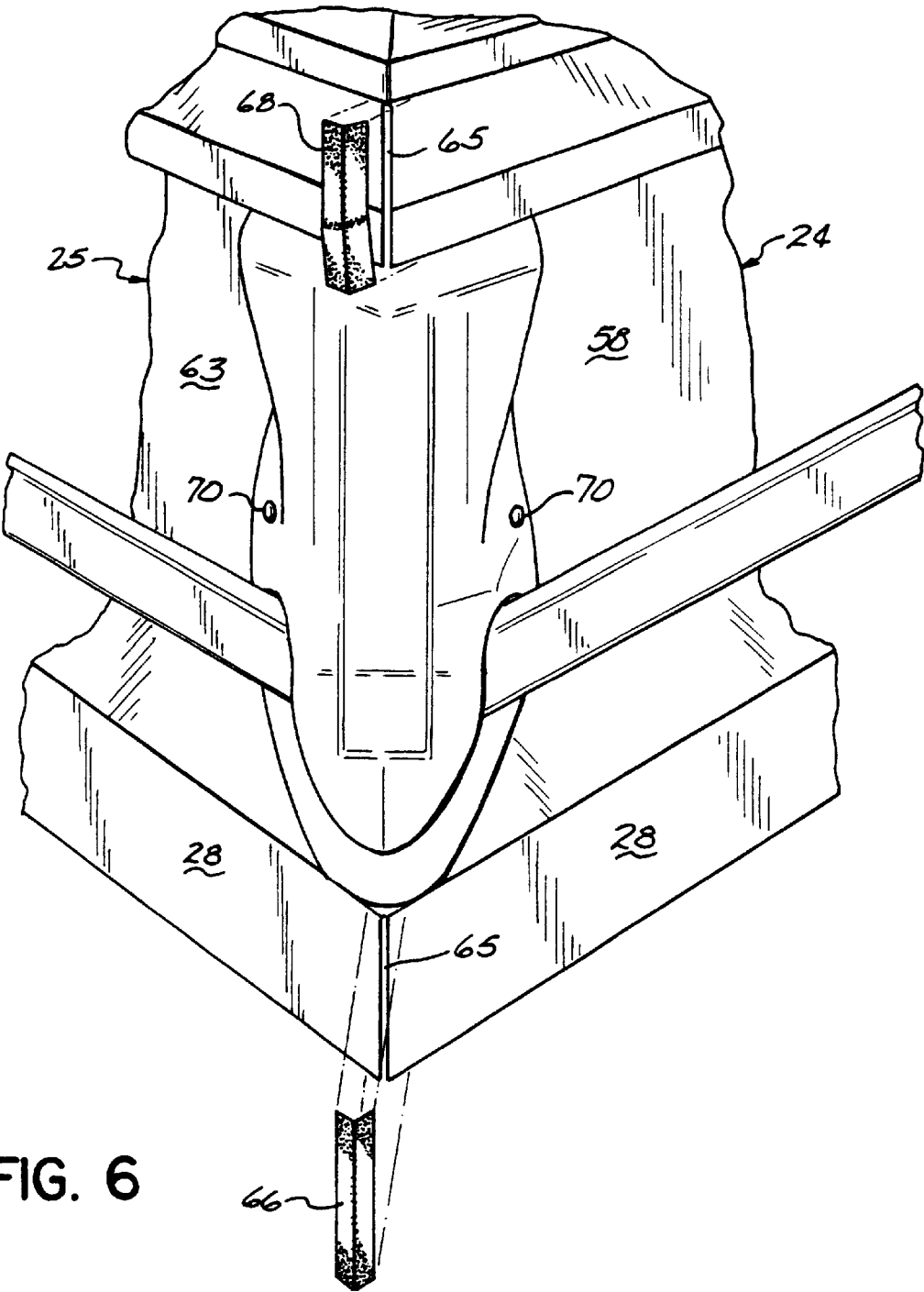


FIG. 6

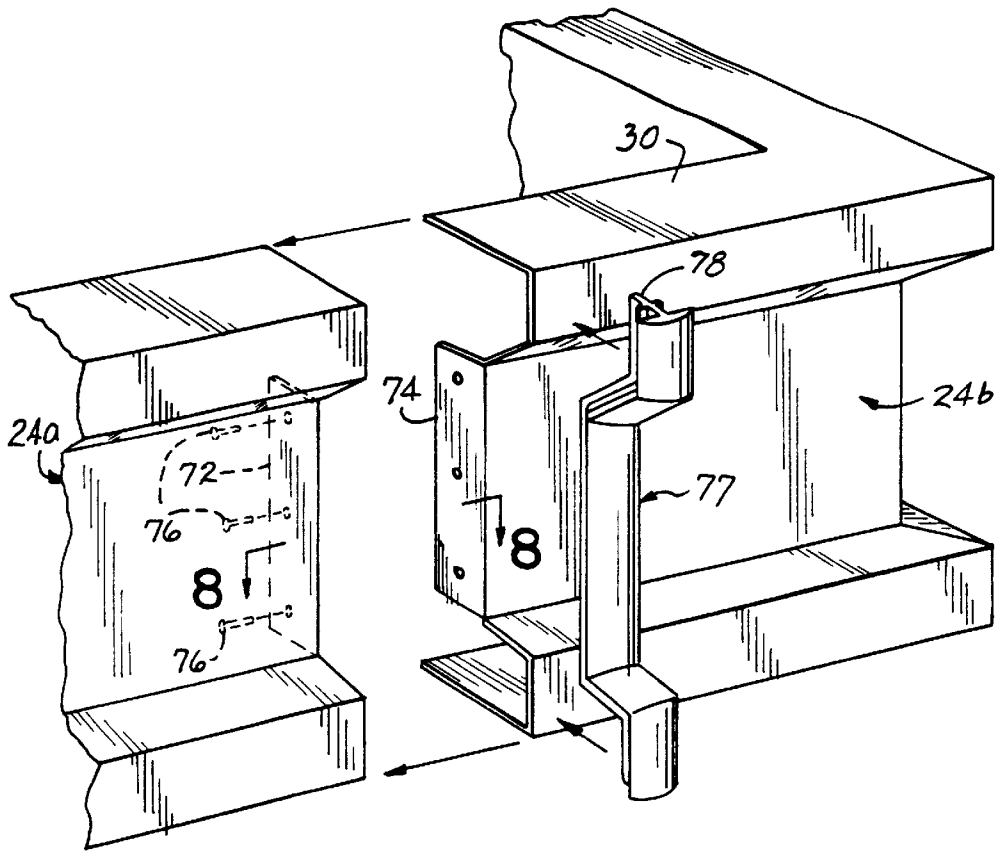


FIG. 7

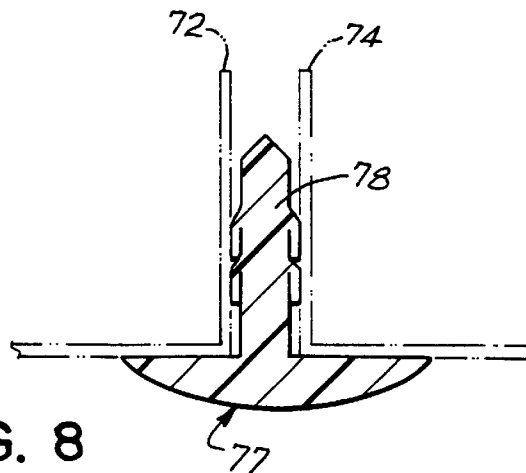


FIG. 8

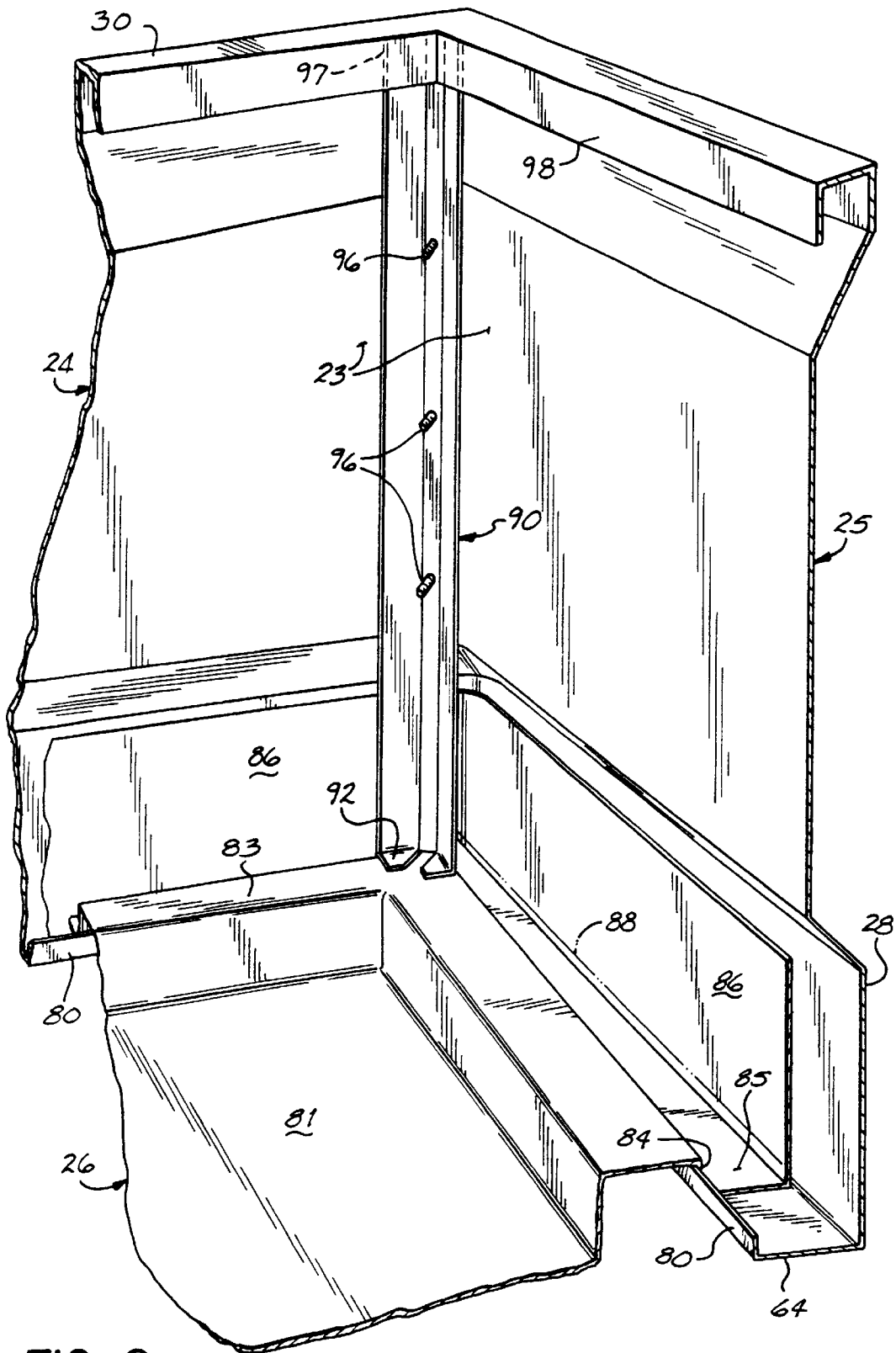


FIG. 9

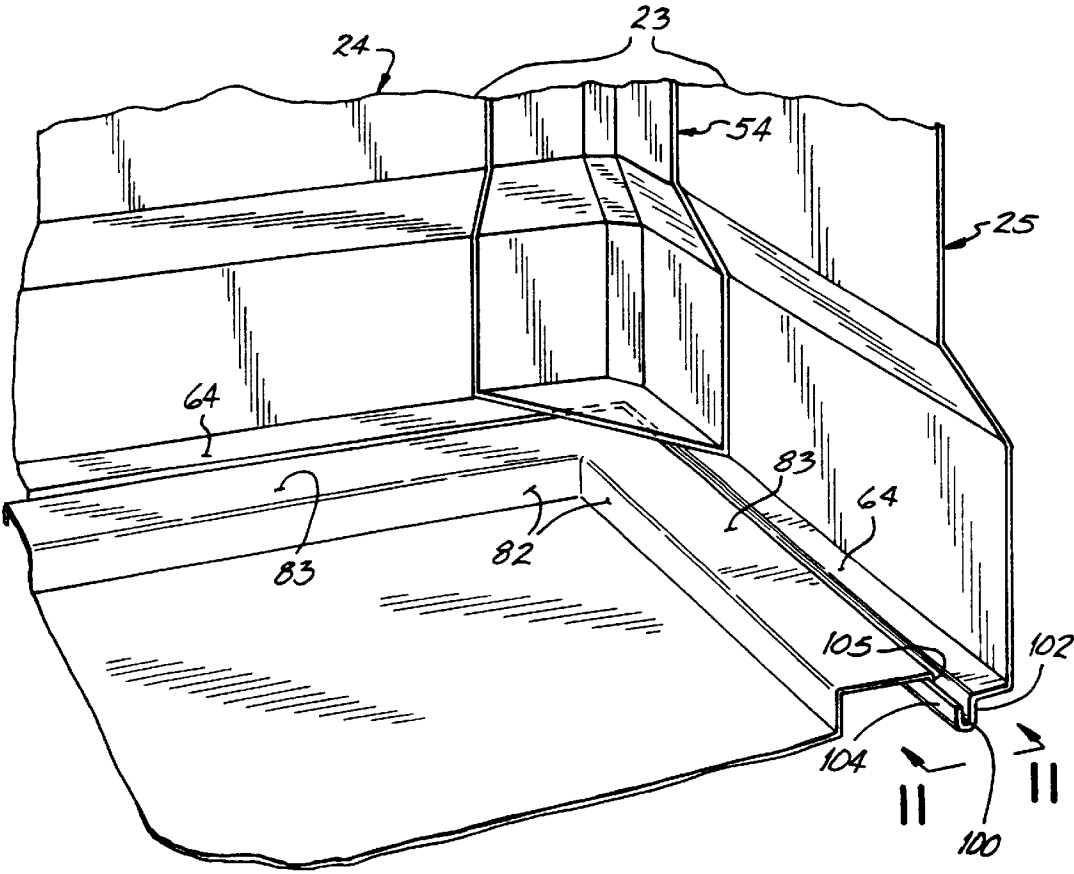


FIG. 10

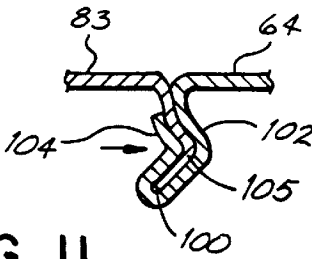


FIG. 11

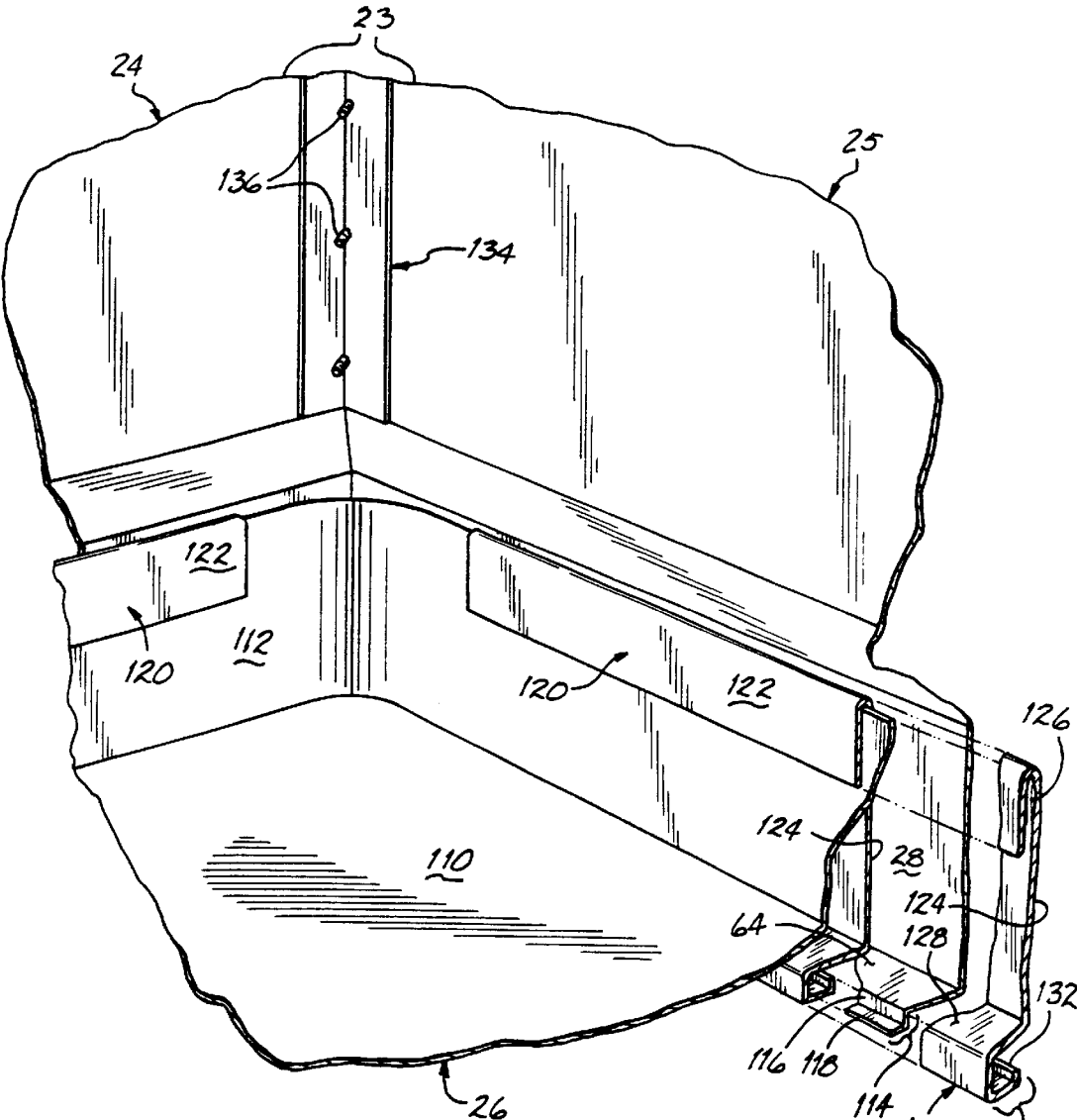
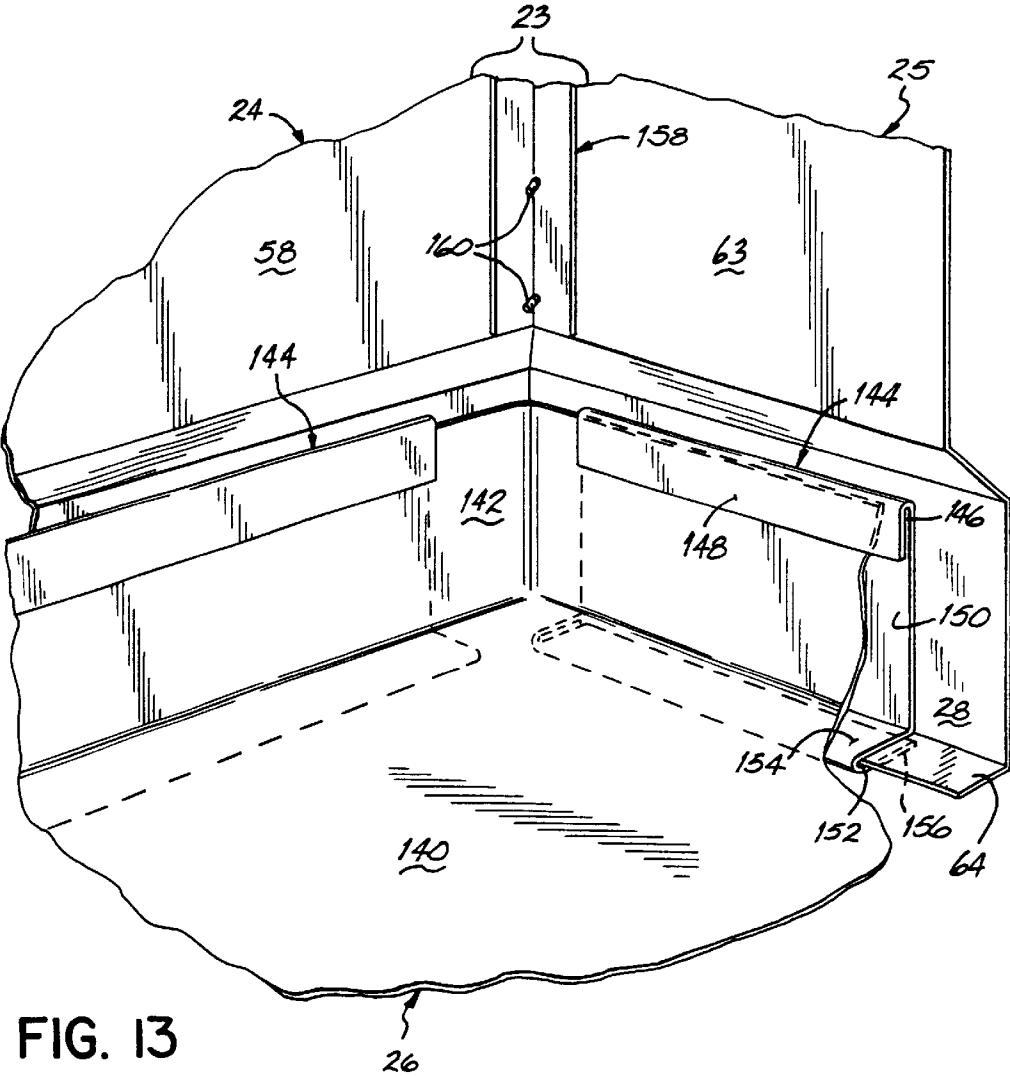
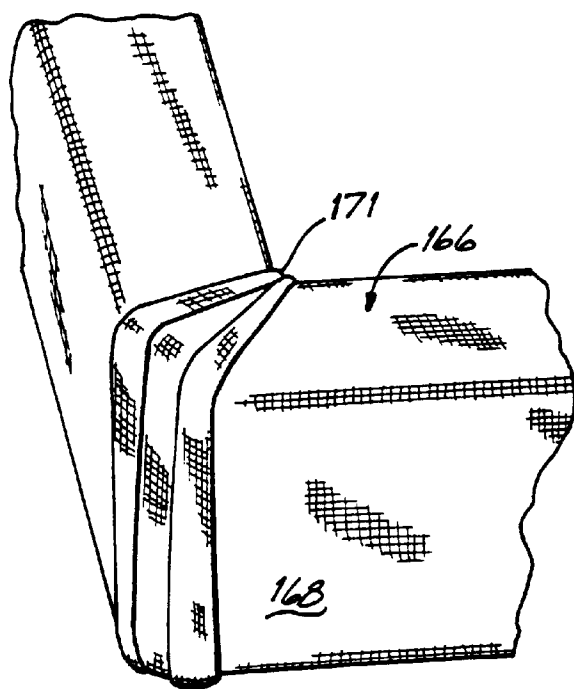
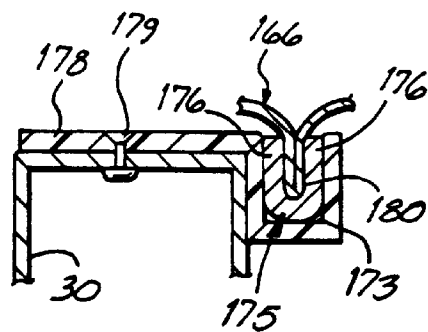
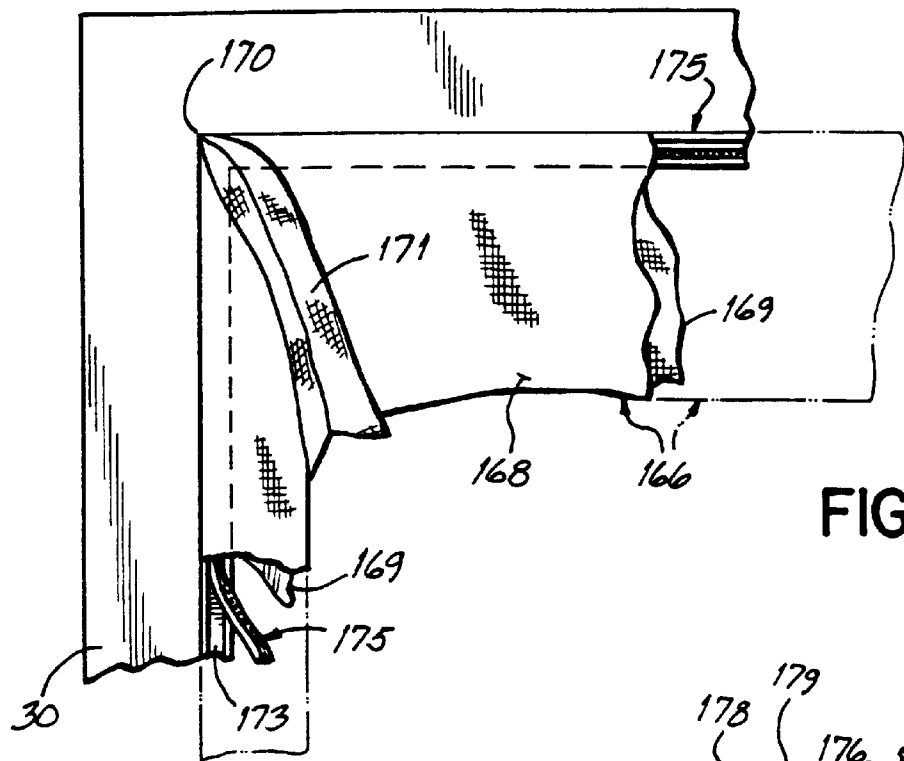


FIG. 12





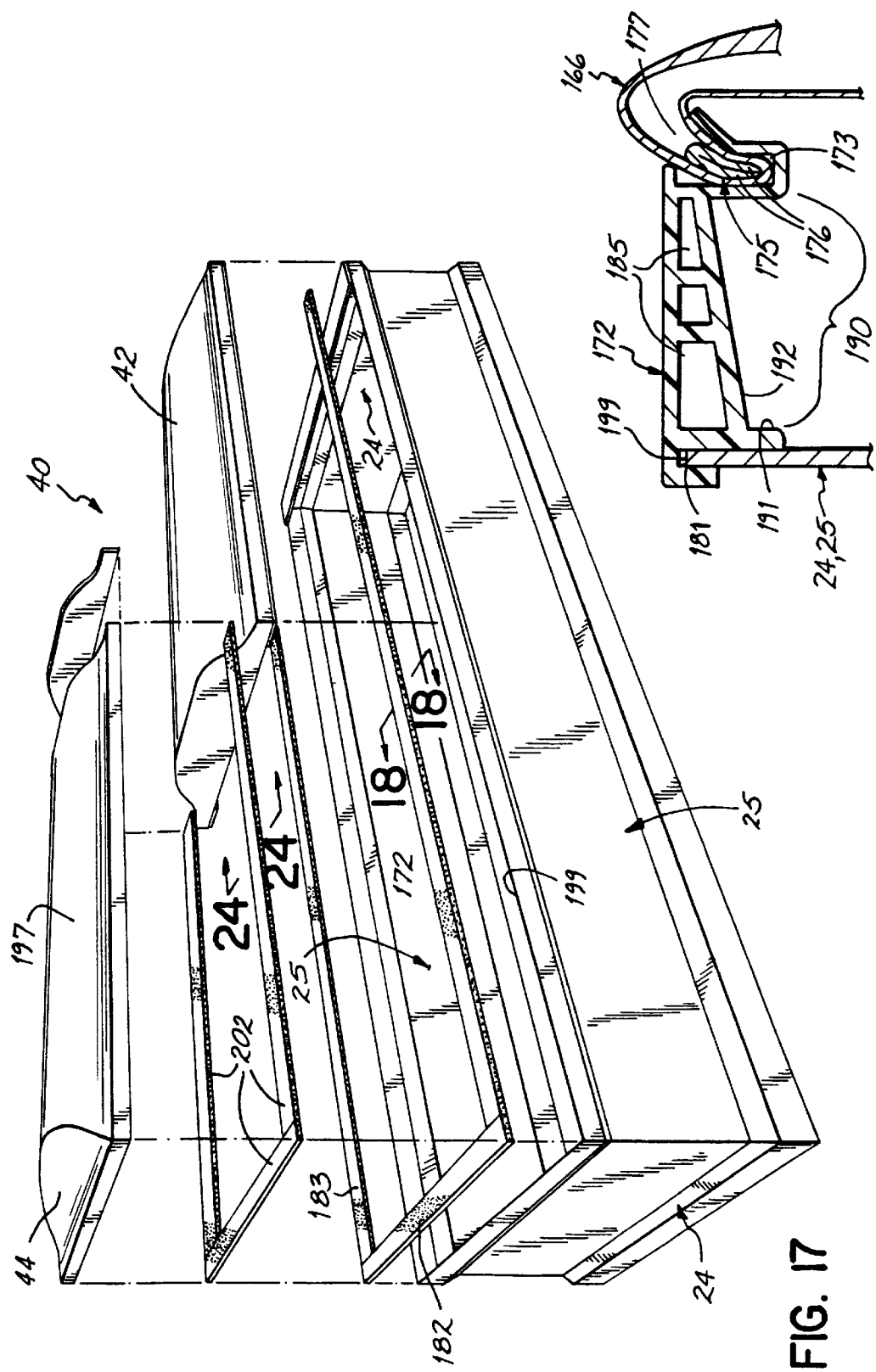


FIG. 17

FIG. 18

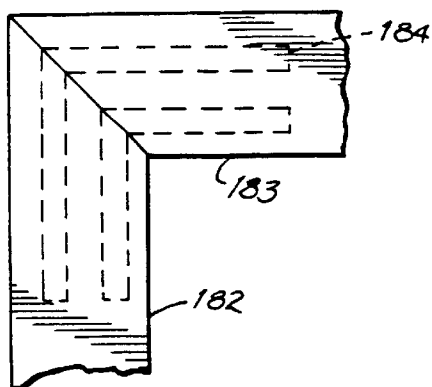


FIG. 19

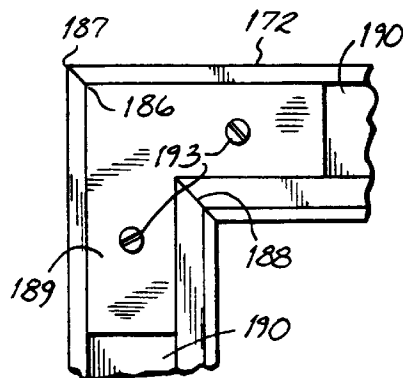


FIG. 20

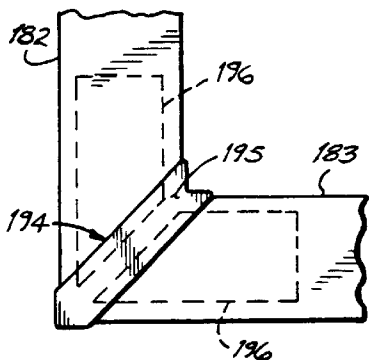


FIG. 21

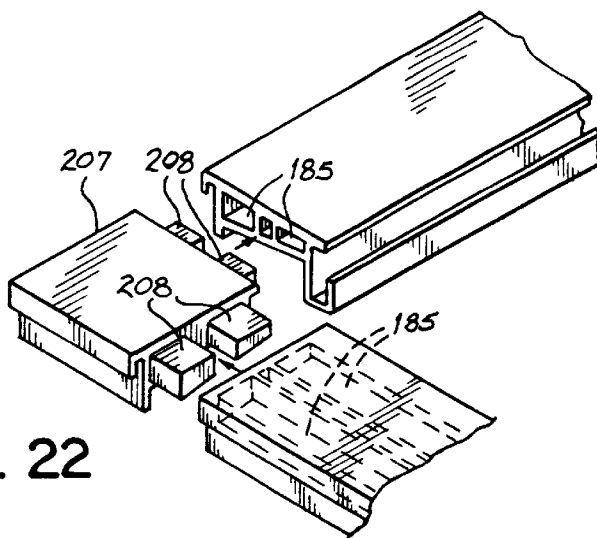


FIG. 22

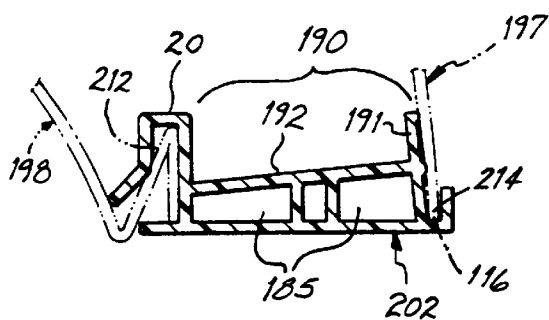


FIG. 24A

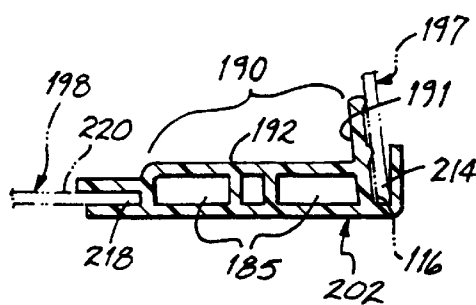
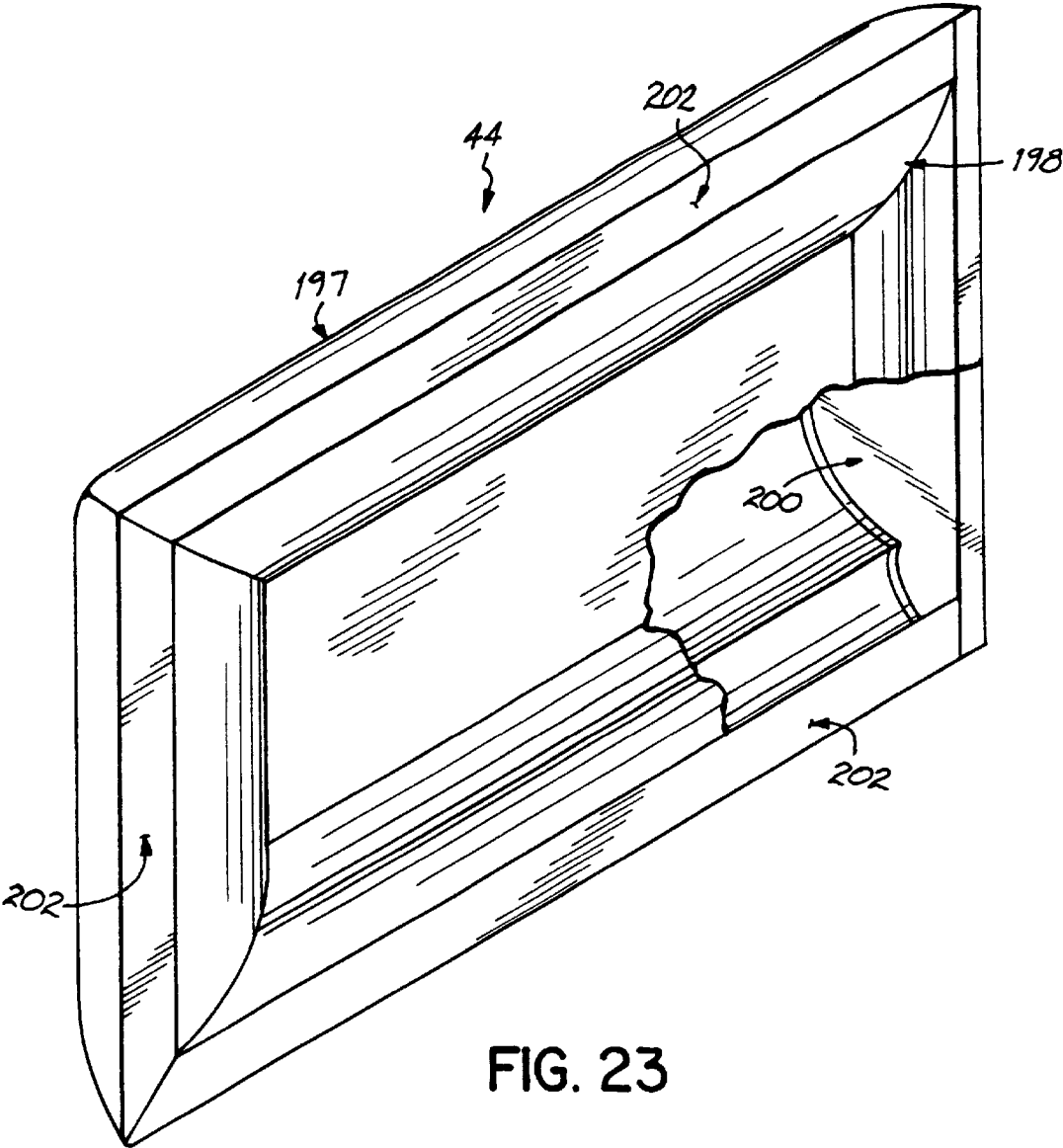


FIG. 24B



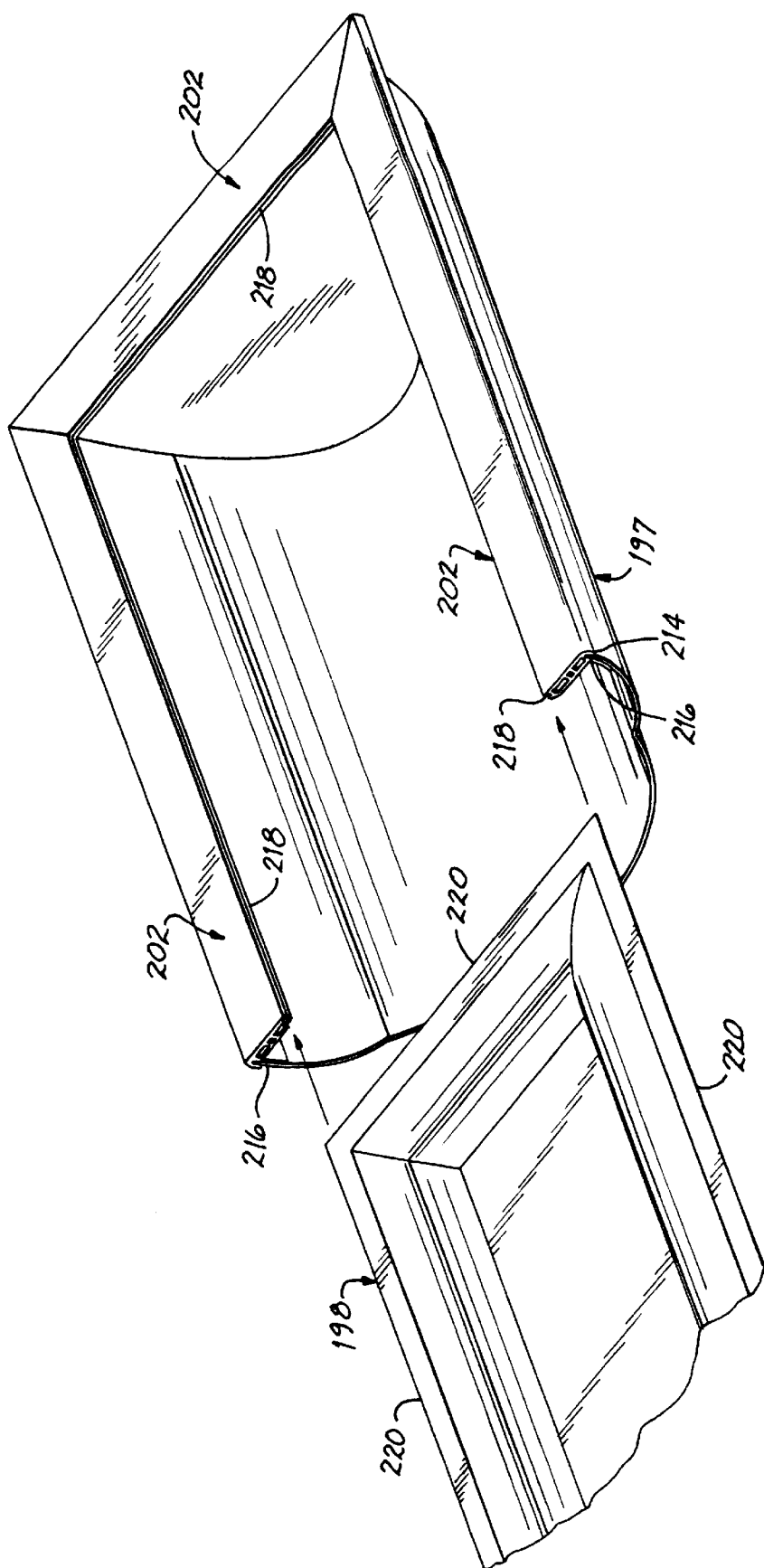
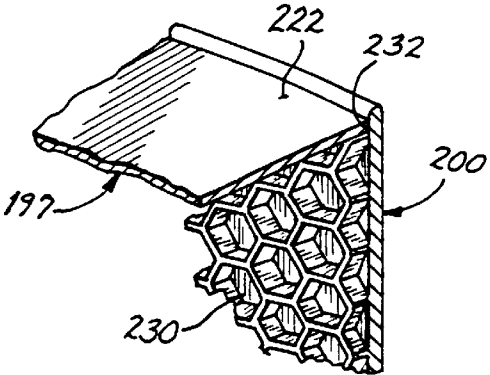
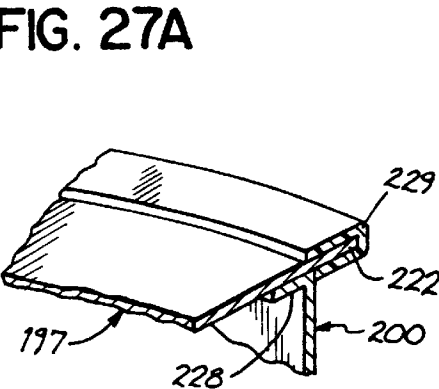
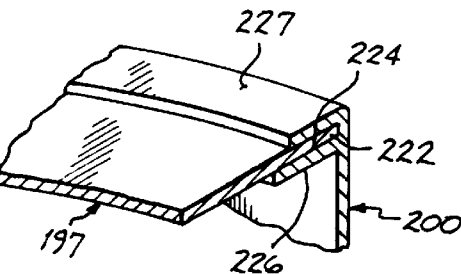
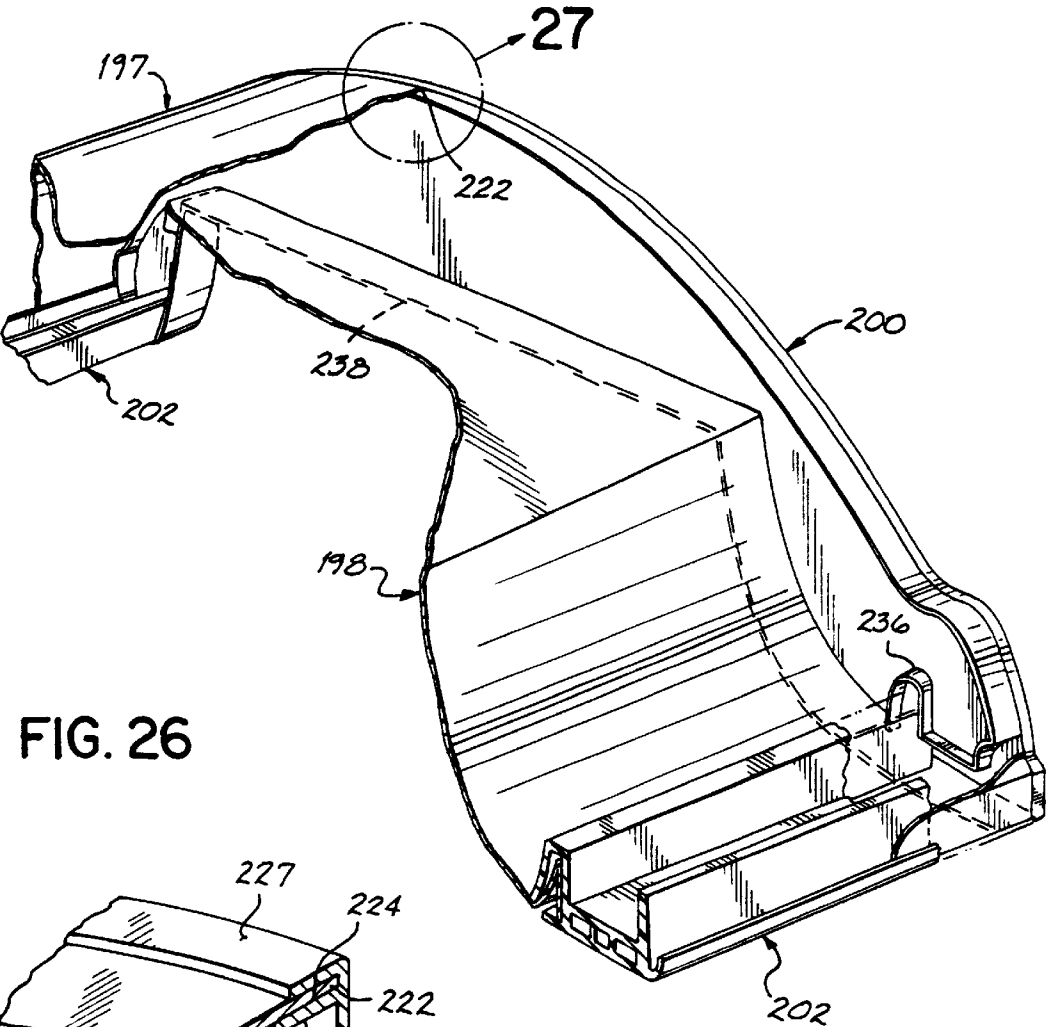


FIG. 25



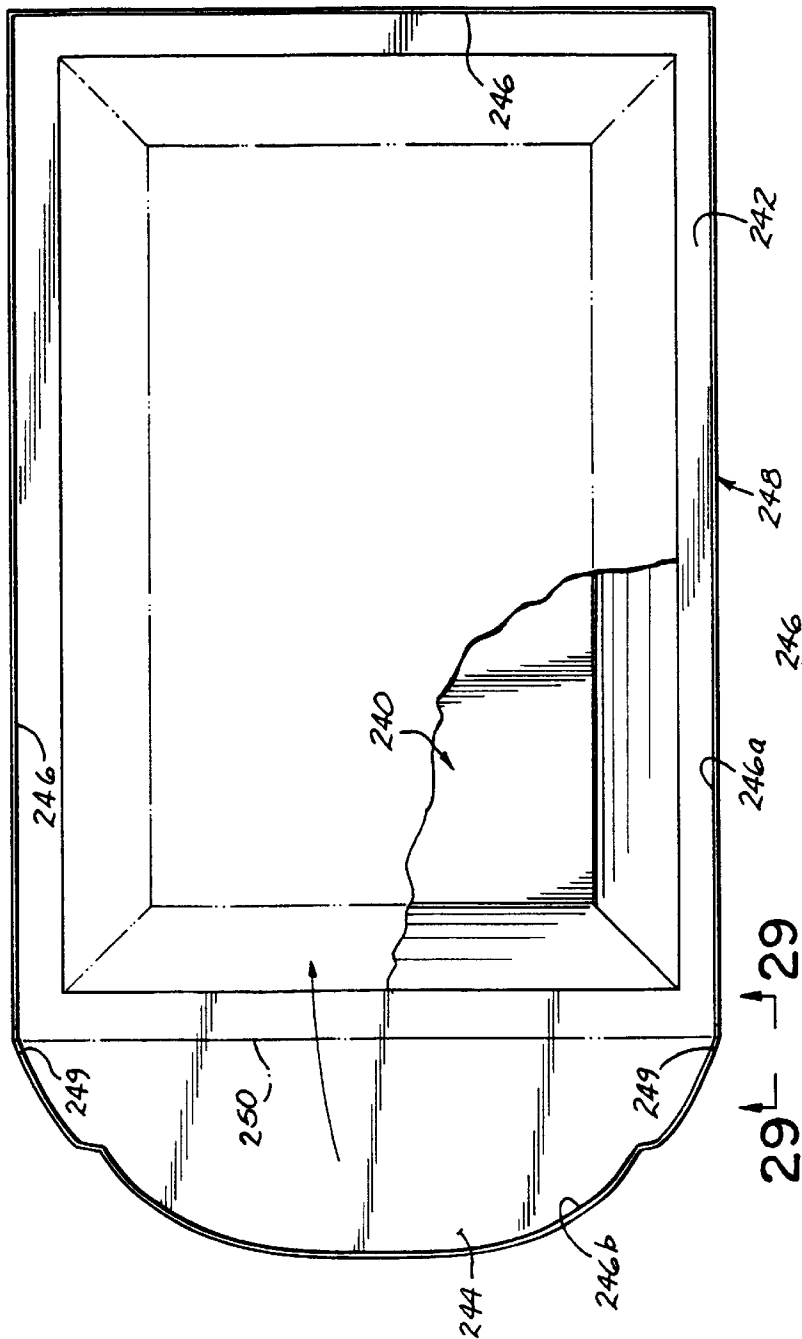


FIG. 28

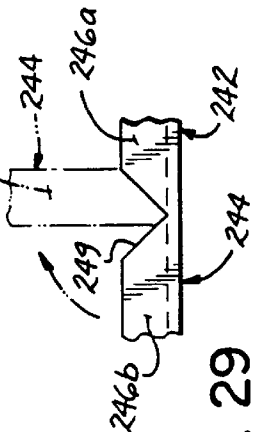


FIG. 29

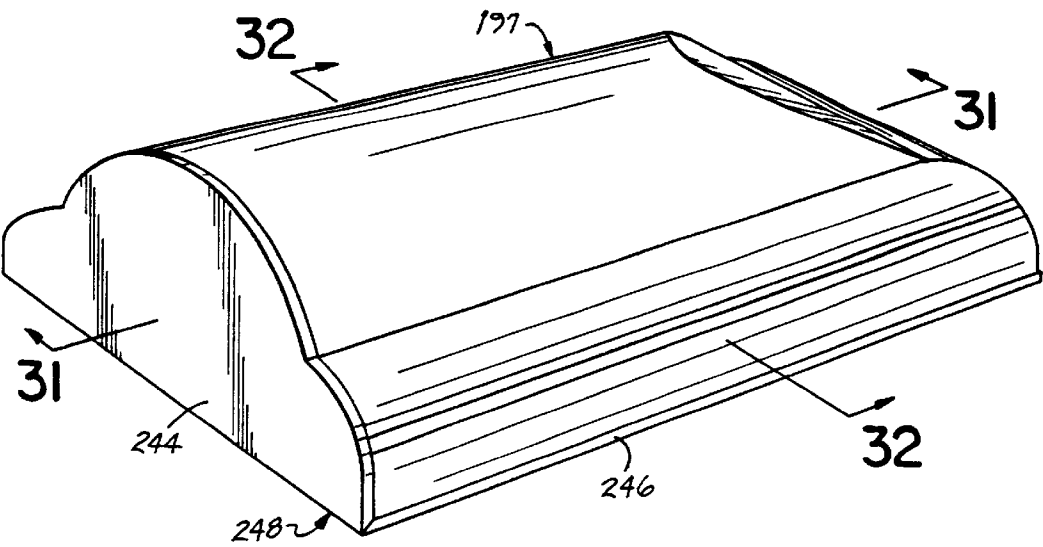


FIG. 30

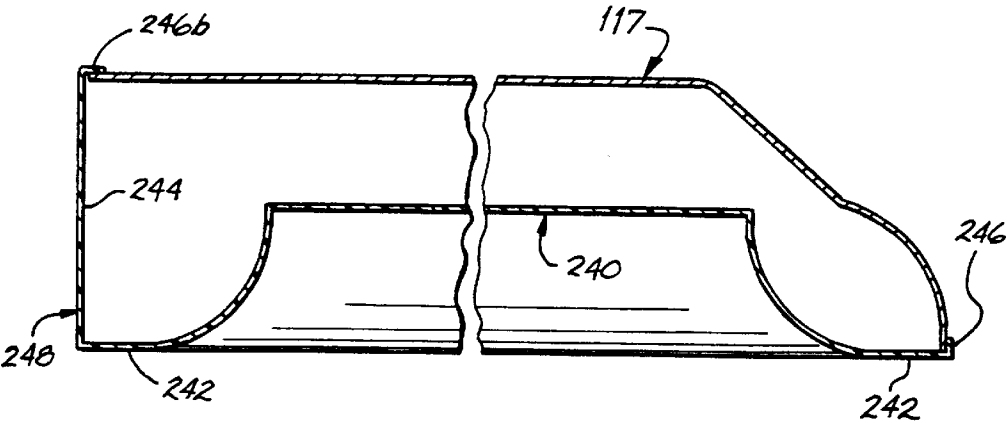


FIG. 31

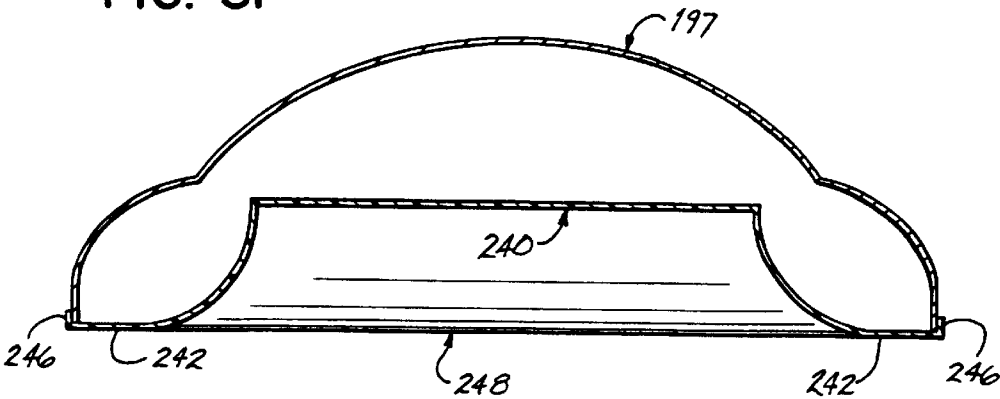


FIG. 32

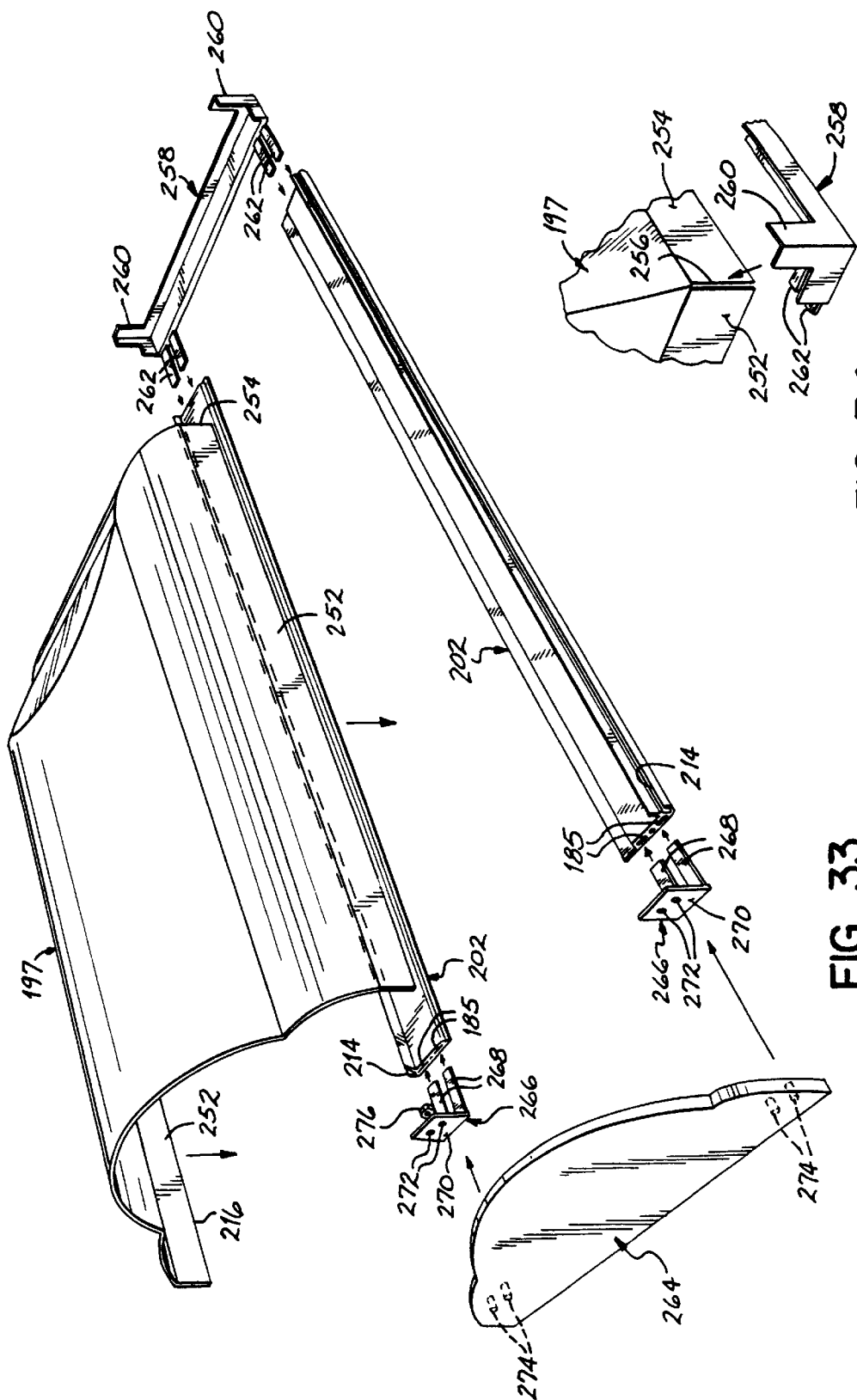
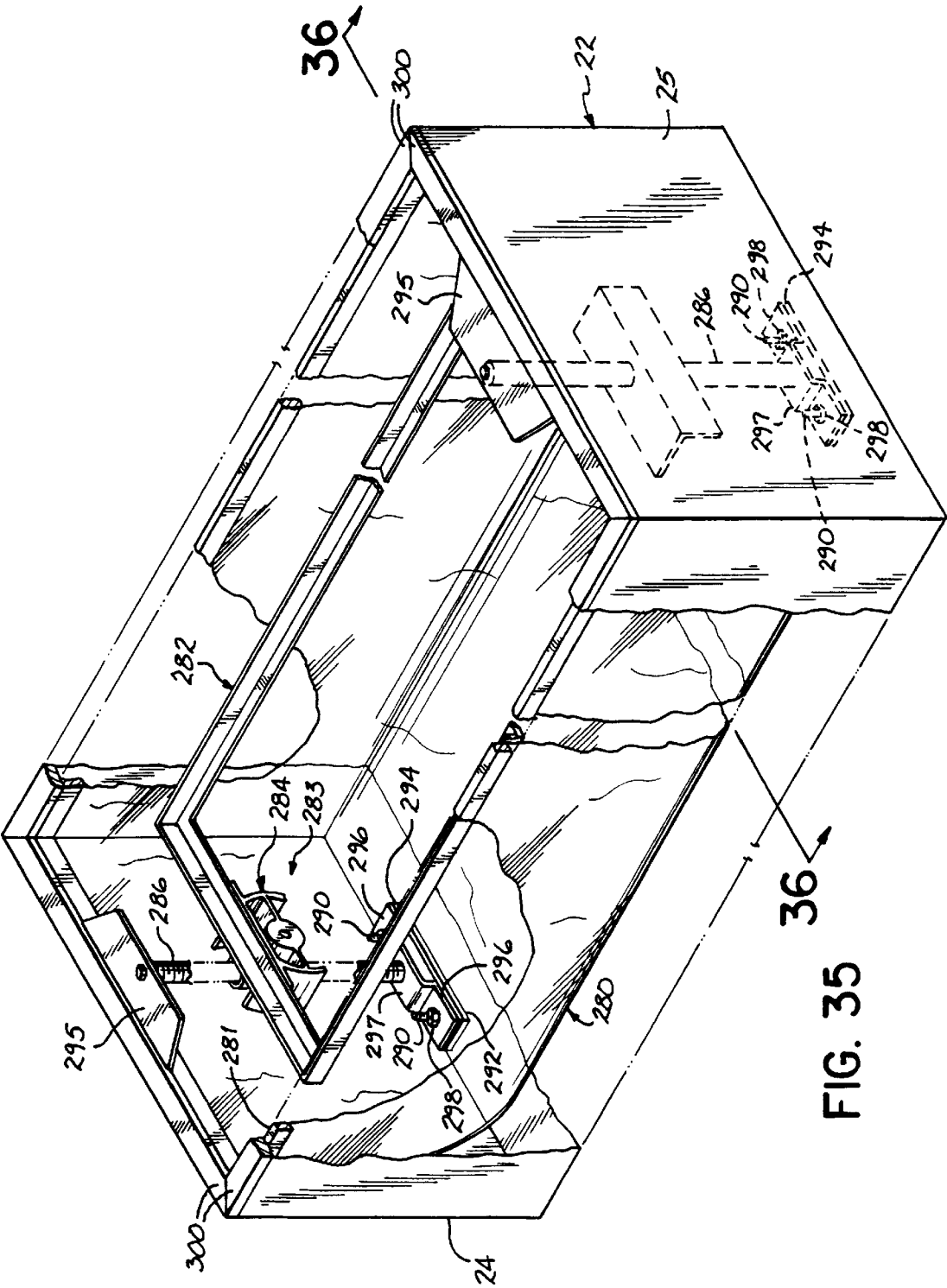


FIG. 34

FIG. 33



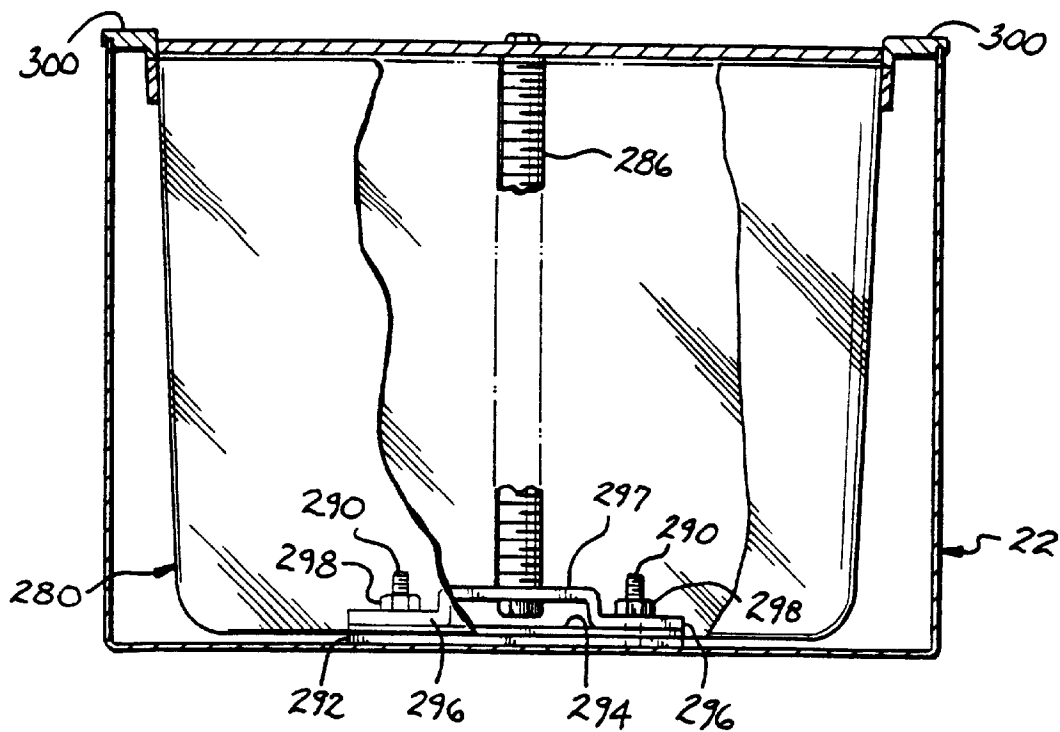


FIG. 36

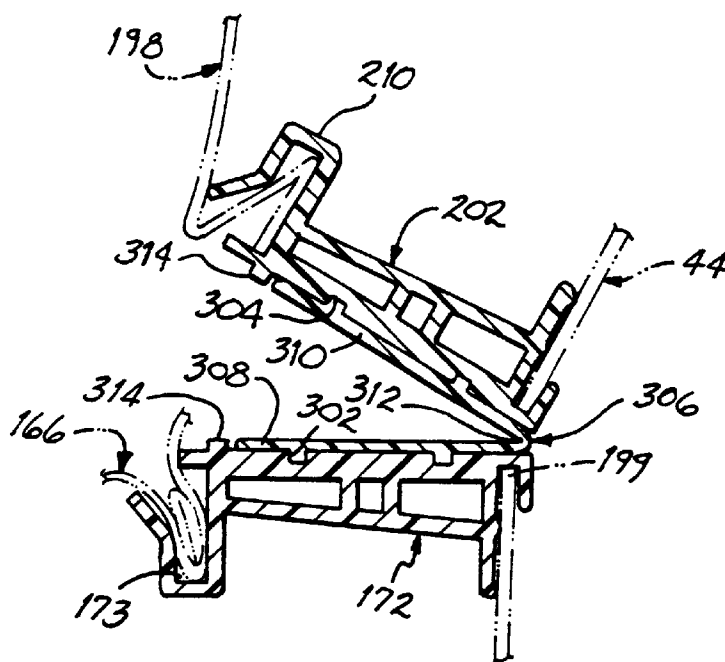
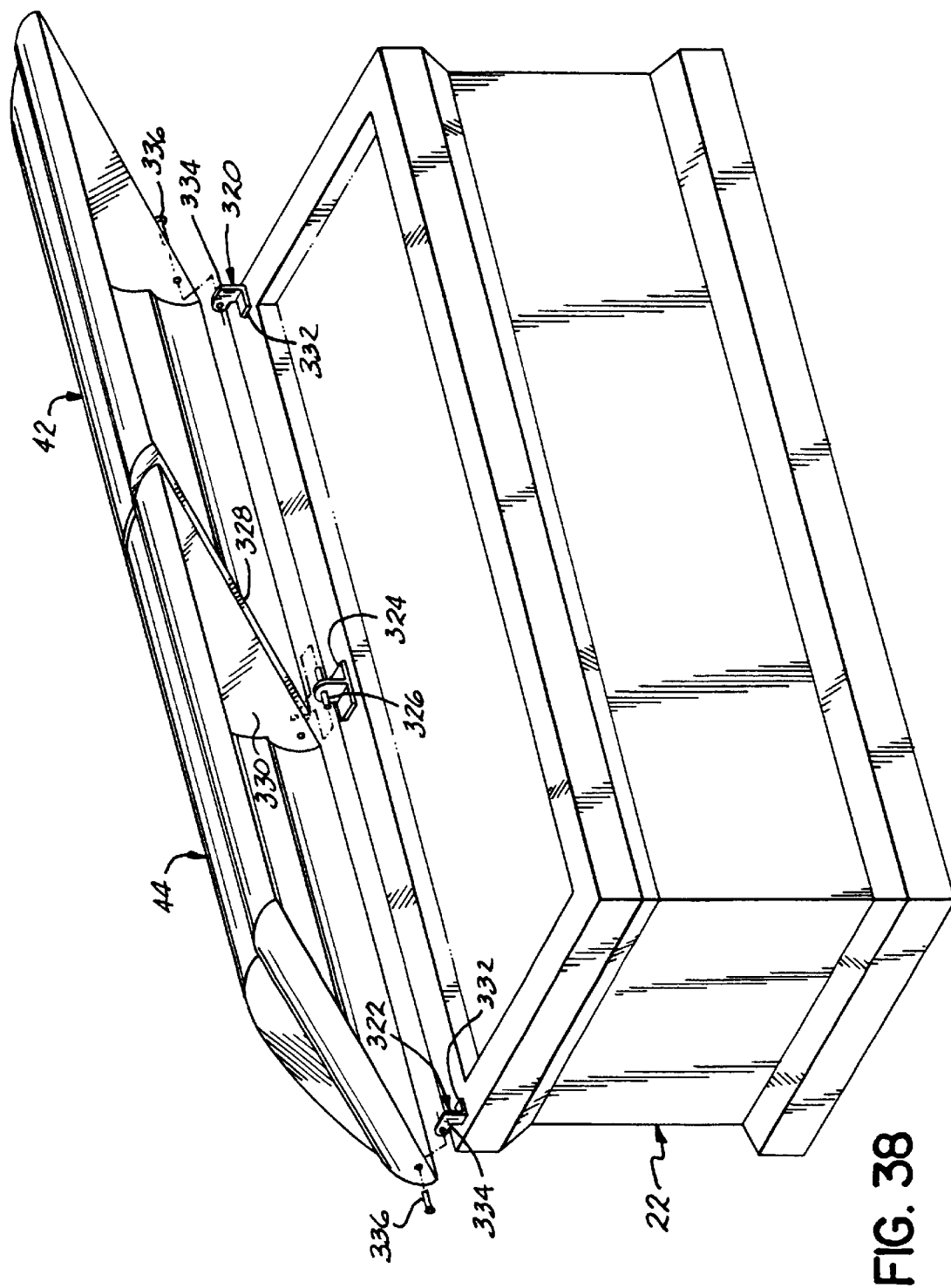


FIG. 37



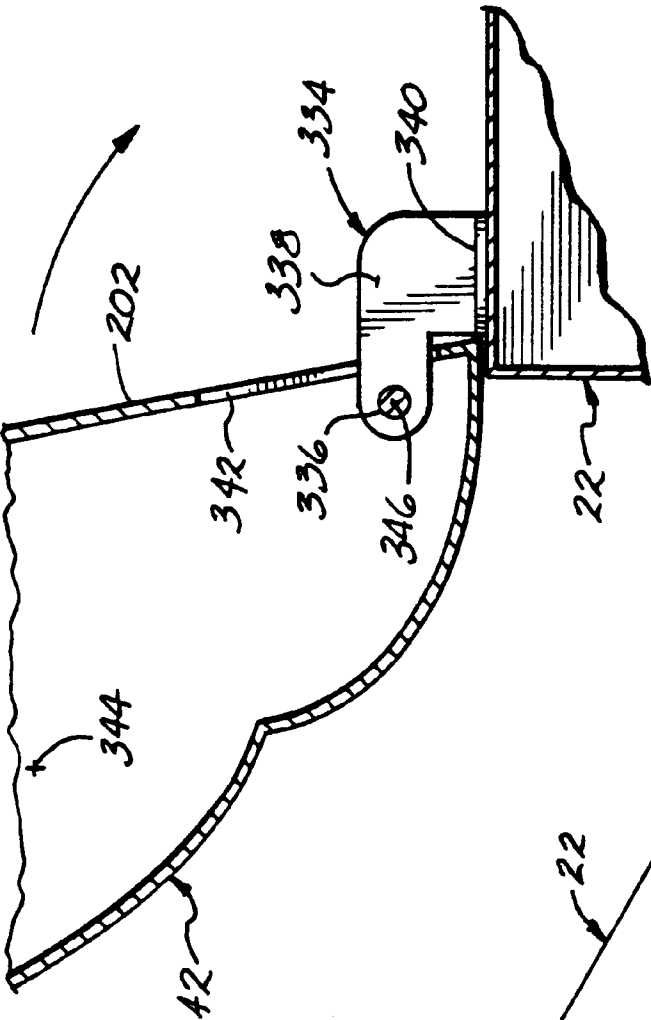


FIG. 39

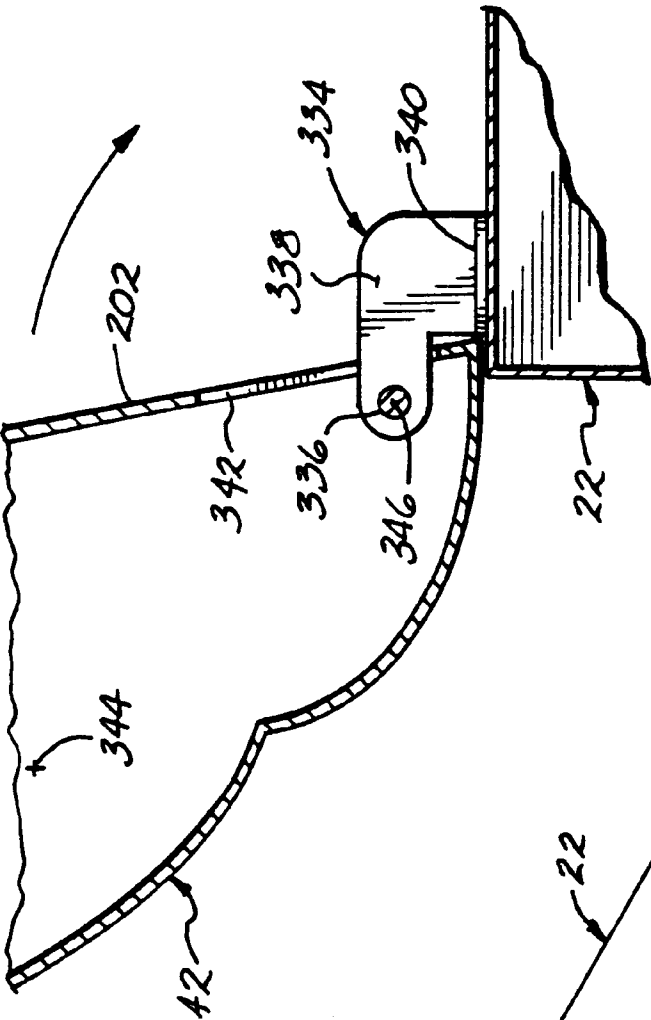


FIG. 40

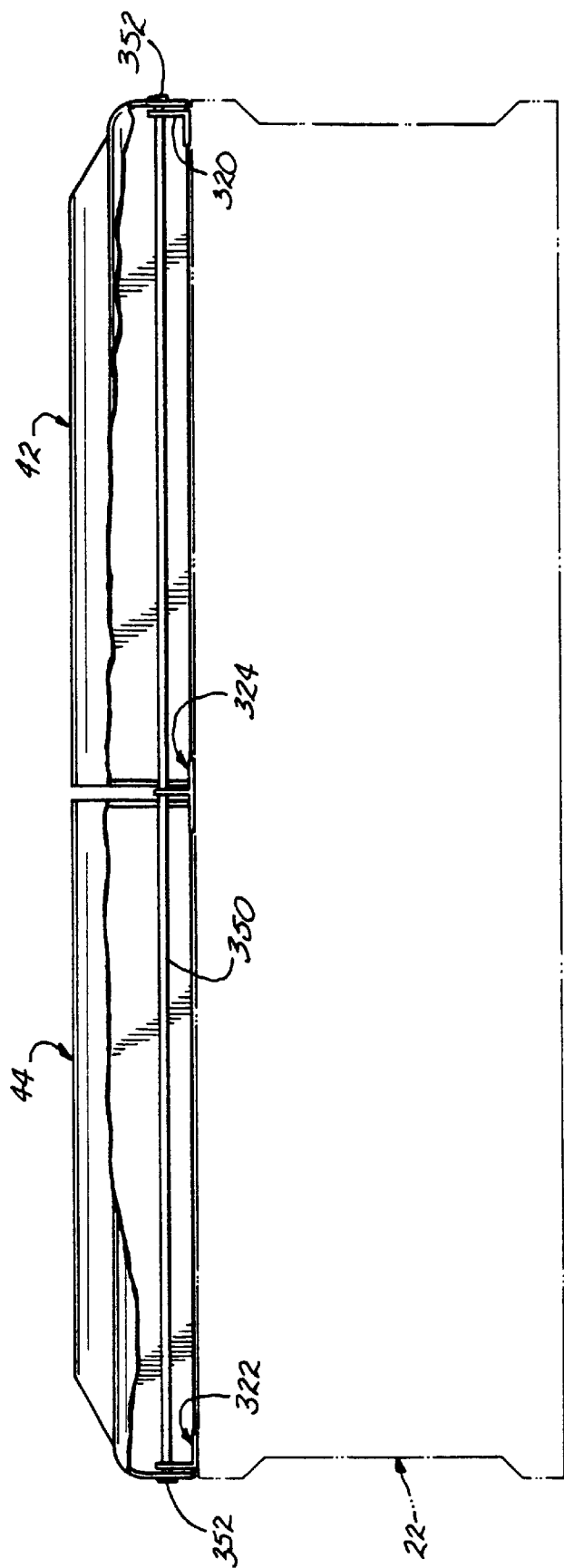


FIG. 4I

READY TO ASSEMBLE METAL CASKET

This application is a Division of U.S. Ser. No. 09/356, 550, entitled "Ready to Assemble Metal Casket", filed July 19, 1999, now U.S. Pat. No. 6,301,758, and is hereby expressly incorporated herein by reference in its entirety.

FIELD OF THE INVENTION

This invention relates to caskets and more particularly, to a metal casket that can be shipped as a compact collection of casket parts and then easily assembled at a remote location.

BACKGROUND OF THE INVENTION

Caskets typically include a base or shell formed as a complete unit together with a lid or cover hinged to the base. The lid or cover is either a single cover extending the full length of the casket or separate lower and upper cover portions which are often capable of being individually opened and closed. Since the cover and shell are designed as a unit and coordinated with one another, typically the structure of the casket is completely or substantially completely manufactured at one facility and shipped as a fully assembled unit to its destination. A fully assembled casket occupies a large space and, as a result, shipping and storage costs are high.

Over recent years, there has been a continuing effort to provide a casket design that is comprised of a group or kit of components and subassemblies that may be very compactly packaged for shipping and therefore, more efficiently and economically transported through the distribution system to the destination of use of the casket. Preferably, the casket is easily assembled at a location remote from the factory, and the final product is as functional and visually appealing as if the casket had been fully assembled at the manufacturing facility. The success of such an operation depends to a great extent on the capability of the casket design to eliminate, from the assembly process, operations requiring great skill or complicated and expensive tooling.

Prefabricated or ready to assemble wooden caskets are known in the art as disclosed in U.S. Pat. Nos. 4,930,197 and 5,709,016. Prefabricated and ready to assemble metal caskets are also known in the art as disclosed in U.S. Pat. Nos. 5,448,810 and 5,813,100. As with wooden caskets, the manufacture and assembly of metal caskets is labor intensive and requires highly skilled labor using complex and expensive equipment. For example, metal casket parts are first fabricated and then welded together. The weld joints must be finished with a grinding operation, and thereafter, surfaces of the casket are finished typically by spray painting. While known prefabricated ready to assemble metal caskets function reasonably well, there is a continuing effort to provide simpler, less expensive and more easily assembled metal caskets that have comparable quality to those metal caskets assembled at a supplier's manufacturing facility.

SUMMARY OF THE INVENTION

The present invention provides a ready to assemble casket that is easily assembled at a location remote from where the components of the casket have been manufactured. The invention has the advantages of permitting a metal casket to be more economically packaged, shipped and stored prior to use. Further, the metal casket can be assembled with a minimum of simple tools and complicated welding and finishing operations are not required.

In accordance with the principles of the present invention and in accordance with one embodiment, the present invention provides a casket having a plurality of side walls including a first wall having a first tab extending from an edge of the first wall and a second wall having a second tab extending from an edge of the second wall. The first and second tabs are overlapped to form a joint connecting the first and second walls. A bottom is connected to lower portions of the side walls to form a shell therewith; and a cover is mounted on upper portions of the side walls to form a closure for the shell.

In another embodiment, the invention provides a casket having a plurality of side walls with peripheral slots extending from lower sections of respective walls. A bottom has a periphery extending into the peripheral slots of the side walls to join the bottom and the side walls together so that the bottom and side walls form a casket shell. A cover is mounted on upper portions of the side walls to form a closure for the shell.

In a further embodiment of the invention, a casket has a plurality of side walls wherein a portion of the side walls has an upward opening groove. A decorative material extends around the portion of the side walls and is secured in the groove. A bottom is connected to the side walls to form a shell; and a cover is mounted on upper portions of the side walls to form a closure for the shell.

In a still further embodiment of the invention, a casket includes a plurality of side walls and a bottom having a periphery connected with lower sections of the side walls to form a shell. A cover is mounted on upper portions of the side walls to form a closure for the shell, and the cover includes a cap providing an exterior finish for the cover of the casket and a dish disposed within the cap and providing an interior finish for the cover of the casket. The cover further has a frame with a first slot for receiving an edge of the cap and a second slot for receiving an edge of the dish. A header is connected to the cap and provides support for the dish and the frame to form an end of the cover. In another aspect of the invention, the cover is secured to the shell with a living hinge.

These and other objects and advantages of the present invention will become more readily apparent during the following detailed description taken in conjunction with the drawings herein.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a casket assembly in accordance with the principles of the present invention.

FIGS. 2A-2E are perspective views of alternative end and side wall structures that may be used to construct a casket shell.

FIGS. 3 and 3A are plan views of one embodiment of a sheet metal stamping that may be used to fabricate a casket shell.

FIG. 4 is a perspective view of one embodiment of a disassembled interior corner of the casket assembly of FIG. 1.

FIG. 5 is a cross-sectional view taken along line 5-5 of FIG. 4 and illustrates a cross-section of the assembled corner.

FIG. 6 is a perspective view of an exterior corner of the casket assembly of FIG. 1.

FIG. 7 is a perspective view of an embodiment of a disassembled joint in a side wall of the casket assembly illustrated in FIG. 1.

FIG. 8 is a cross-sectional view taken along line 8—8 of FIG. 7.

FIG. 9 is a perspective view of one embodiment of an interconnection of side walls with a bottom of the casket assembly illustrated in FIG. 1.

FIG. 10 is a perspective view of a second embodiment of an interconnection of side walls with a bottom of the casket assembly illustrated in FIG. 1.

FIG. 11 is a cross-sectional view taken along the line 11—11 of FIG. 10.

FIG. 12 is a perspective view of a third embodiment of an interconnection of side walls with a bottom of the casket assembly illustrated in FIG. 1.

FIG. 13 is a perspective view of a fourth embodiment of an interconnection of side walls with a bottom of the casket assembly illustrated in FIG. 1.

FIG. 14 is a partial perspective view of a corner of a shell illustrating casket material folded toward the inside of the casket and one embodiment for securing material to the finished shell in accordance with the principles of the present invention.

FIG. 15 is a partial perspective view of the corner of the shell of FIG. 14 illustrating casket material folded toward the outside of the casket.

FIG. 16 is a cross-sectional view taken along line 16—16 of FIG. 14 and illustrates a second embodiment of an extrusion for securing material to a casket shell.

FIG. 17 is a perspective view of the casket shell and cover with the shell extrusions and cover components being shown disassembled.

FIG. 18 is a cross-sectional view taken along line 18—18 of FIG. 17 and illustrates a first embodiment of an extrusion for securing material to a casket shell.

FIG. 19 is a top plan view of one embodiment for joining shell rim frame members to form a corner in accordance with the principles of the present invention.

FIG. 20 is a bottom plan view of another embodiment for forming a corner in the shell rim frame.

FIG. 21 is a top plan view of a further embodiment of a corner construction for the shell rim frame.

FIG. 22 is a disassembled partial perspective view of another embodiment for forming a corner in the shell rim frame.

FIG. 23 is a bottom perspective view of a portion of the cover of the casket in accordance with the principles of the present invention.

FIG. 24A is a cross-sectional view taken along line 24—24 of FIG. 17 and illustrates one embodiment of a peripheral frame that is used to join the edges of the external cap and internal dish in accordance with the principles of the present invention.

FIG. 24B is a cross-sectional view taken along line 24—24 of FIG. 17 and illustrates a second embodiment of a peripheral frame member for joining the peripheral edges of the cap with the dish.

FIG. 25 is a perspective view illustrating how a molded dish and cap are assembled with a U-shaped frame.

FIG. 26 is a partial perspective view illustrating one embodiment of a connection between a header and a cap in accordance with the principles of the present invention.

FIG. 27A is a partial perspective view of encircled area 27 of FIG. 26 illustrating one embodiment of a connection between an edge of a header and an adjacent end edge of a cap in accordance with the principles of the present invention.

FIG. 27B is a partial perspective view of encircled area 27 of FIG. 26 illustrating another embodiment of a connection between an edge of a header and an adjacent end edge of a cap in accordance with the principles of the present invention.

FIG. 27C is a partial perspective view of encircled area 27 of FIG. 26 illustrating a further embodiment of a connection between an edge of a header and an adjacent end edge of a cap in accordance with the principles of the present invention.

FIG. 28 is a partial plan view of an integral header and dish molded as a single piece and the header in an unfolded position in accordance with the principles of the present invention.

FIG. 29 is a partial elevation view of area 29—29 of FIG. 28 illustrating the integral header and dish of FIG. 28 and illustrating how the header is folded 900 with respect to the dish.

FIG. 30 is a partial perspective view of the integrally molded header and dish assembled with a cap in accordance with the principles of the present invention.

FIG. 31 is a cross-sectional view taken along line 31—31 of FIG. 30 illustrating a longitudinal cross-section of a molded header and dish assembled with the cap.

FIG. 32 is a cross-sectional view taken along line 32—32 of FIG. 30 illustrating a front to back cross-section of the molded header and dish assembled with the cap.

FIG. 33 is a perspective view of an other embodiment of a casket cover frame in accordance with the principles of the present invention with the casket cover components being shown disassembled.

FIG. 34 is a partial perspective disassembled view of a cap corner of the embodiment shown in FIG. 33.

FIG. 35 is a partially broken away perspective view of a casket interior that includes a fluid bag liner and a bed lift mechanism in accordance with the principles of the present invention.

FIG. 36 is a cross-sectional view taken generally along line 36—36 of FIG. 35 illustrating the assembly of the bed lift mechanism with the fluid bag liner.

FIG. 37 is a partial cross-sectional view of a hinge extending along a rear edge of a casket and pivotally connecting a casket cover with a casket shell in accordance with the principles of the present invention.

FIG. 38 is a disassembled perspective view of a casket shell and cover illustrating one embodiment of a hinge system for pivotally connecting the casket cover to the shell in accordance with the principles of the present invention.

FIG. 39 is a partial perspective view of a casket shell and cover using the hinge of FIG. 38 with the cover in the open position.

FIG. 40 is a cross-sectional view taken along lines 40—40 of FIG. 39 illustrating the casket cover maintained in the open position by the hinge of FIG. 38.

FIG. 41 is a partially broken-away side elevational view of a casket shell and cover illustrating an alternative embodiment of a hinge system for pivotally connecting the casket cover to the shell in accordance with the principles of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIG. 1, a presently preferred embodiment according to this invention of a casket 20 is shown. The

casket 20 includes a generally rectangular shell 22 with four upstanding interconnected vertical walls 23 and a bottom 26. Each of the vertical walls 23 has a base element 28 and an upper rim element 30. Corner members 32 in association with brackets 34 support handles 36 that extend around the periphery of the casket 20.

The casket 20 also includes a cover 40 positioned on the upper edges of the shell 22. The cover 40 includes a lower or foot cover section 42 and an upper or head cover section 44. The upper section 44 is pivotally attached to an upper edge of the shell 12 independently of the lower section 42 so that the upper section 44 can be raised to the illustrated open position or lowered to a closed position (not shown). The sections 42, 44 of the cover 40 are pivotally attached to an upper edge of the shell 22 by hinges or other pivoting mechanisms (not shown) as is known in the art. The lower cover section 42 may or may not be pivotally mounted on the shell 22.

FIG. 1 is demonstrative of a finished casket as it would be received from the factory of the casket supplier. However, in accordance with the principles of the present invention, the casket of FIG. 1 is comprised of a group or kit of subassemblies and components that are shipped from the factory in an unassembled state. The casket is then assembled at a site remote from the factory preferably using only a few simple tools and not requiring any welding or surface finishing in the final assembly process. However, in some of the embodiments described herein, welding may be used as a joining process if so.

Casket Shell Constructions

There are many potential unassembled configurations of the casket in which the casket shell 22 is designed in one or more separate pieces that are joined at one or more corners or at one or more locations intermediate the corners as illustrated in FIGS. 2A-2E. For example, referring to FIG. 2A, the shell 22 may be fabricated from a one or more pieces of formed sheet metal providing the desired vertical cross-sectional shape. The formed sheet metal has a length equal to the perimeter of the shell 22, and the sheet metal is then bent or folded to form the 90° corners such that the ends meet at one of the corners. Those ends are joined as will be further described. Another embodiment is illustrated in FIG. 2B in which the formed sheet metal of the shell is sheared to lengths equal to the sidewalls 25 and partial end walls 24. Those pieces are then bent or folded to the illustrated shape, and the end walls 24 are then joined as will be subsequently described. FIG. 2C illustrates a variation of the embodiment in FIG. 2A in which the shell is comprised of two pieces each having an end wall 24 and side wall 25. The two pieces are joined together at diagonal corners to form the complete shell 22. A further embodiment is illustrated in FIG. 2D in which separate end walls 24 and side walls 25 are formed and joined at their ends, thereby forming the corners of the shell 22. In FIG. 2E, a single shell component is formed to include the two end walls 24, a single full side wall 25 and partial side walls 25A. Another partial side wall section 25B is provided and is joined to the partial side wall portions 25A and 25B to form the complete shell 22. While five examples of combinations of partial or full end walls 24 and side walls 25 are illustrated in FIGS. 2A-2E, as will be appreciated, the shell 22 can be assembled from many other different combinations; and all of those combinations are within the spirit and scope of the present invention.

FIG. 3 illustrates one example of a piece of formed sheet metal that may be used to form the casket shells 22 illustrated in FIGS. 2A, 2C and 2D, that is, shell constructions which are joined at the corners. The sheet metal of the shell

22 can be manufactured from a single piece of prefinished metal, for example, a sheet metal coil of prefinished 20 gauge steel. The sheet metal coil is stamped, bent and/or roll formed in a continuous process to provide the desired cross-sectional profile of the walls 23 including respective base portions 28 and upper rim portions 30. One such a cross-section is shown in FIG. 5. The lengths of respective end and side wall sections 24, 25 are delineated by cutouts 27 and 29 that are located at the desired corners of the shell 22. Opposed connecting tabs 52 at the corners are also formed during the stamping process. The stamped and/or formed sheet metal is then sheared to lengths corresponding to the lengths of the desired combinations of full or partial side or end walls. Thus, when the sheared stamping is folded at 90° to form a corner, the tabs 52 are brought into an overlapping relationship. The free ends of the bent pieces are then joined together to provide the desired shell configuration, some examples of which are illustrated in FIG. 2.

If shell constructions are desired that required joining pieces intermediate the corners as shown in FIGS. 2B and 2E, the end or side walls 24, 25 may be formed or stamped as illustrated in phantom in FIG. 3. In this embodiment, a stamping process removes material from the base section 28 and the upper rim 30 in addition to forming the tabs 52. The stamping is then sheared to form two pieces each having a tab 52. The tabs 52 are then bent or folded toward the inside of the shell to 90°, and the shell sections are then brought together, thereby bringing the tabs 52 together as well as opposing ends of the base 28 and upper rim 30. The joint is then completed in a manner as will be subsequently described.

After the end and shell side walls 24, 25 and their respective bases portions 28 and upper rims 30 have been roll formed and/or stamped and bent to form the corners as described with respect to FIGS. 2 and 3, the joints at the corners or intermediate the corners must be made. One design for joining the corners is illustrated in FIG. 4. To assemble the corner, the tabs 50, 52 are brought into an overlapping relationship which functions to bring together the ends of the walls 24, 25 including the base and rim elements 28, 30, respectively. An adhesive is applied to all areas of a backing corner plate 54 which contact surfaces of the end and side sections 24, 25. The corner plate 54 is then positioned in the internal corner formed by the intersection of the ends of the side sections 24, 25, thereby providing a support for and strengthening the corner. The three piece assembly 24, 25, 54 may be temporarily supported by a simple fixture (not shown) that is positioned to the outside of the end and side sections 24, 25 with supporting V-blocks (not shown) contacting the outside surfaces of the rim 30 and lower base 28 of the end and side sections 24, 25. Those three components may also be temporarily held by a spring operated clamp arm (not shown) extending from the supporting fixture. The assembly is then secured or tacked together by fasteners 55 that extend through the overlapping tabs 50, 52 and a rear wall 53 of the corner plate 54. Any suitable number of fasteners 55 may be used, and the fasteners 55 may be screws, bolts, rivets or other known fastening devices. Thus, the fasteners 55 maintain the integrity of the corner structure until the applied adhesive has cured. The adhesive has a further function of providing a seal at the intersection of the ends of the end and side sections 24, 25 to prevent fluids from escaping.

When the corner is properly assembled as shown in FIG. 5, outer surfaces of an upper rim portion 56 of the backing corner are disposed immediately adjacent inner surfaces of

an upper rim portion 30 of the end wall 24. Similarly an outer surface of a central wall portion 57 of the backing corner plate 54 is disposed immediately adjacent an inner surface of a side wall portion 58 of the end wall 24, and outer surfaces of a base portion 59 of the backing corner plate 54 are disposed immediately adjacent inner surfaces of a base portion 28 of the end side 24. In a similar manner, the backing corner plate 54 has an upper rim portion 60, central wall 61 and base portion 62 that are disposed adjacent respective an upper rim portion 30, a central wall 63 and a base portion 28 of the side wall 25. As will be appreciated, instead of each of the end and side sections 24, 25 having singular long tabs 50, 52, respectively, the tabs 50, 52 may be replaced by a plurality of tabs located in the same general area and designed to overlap and receive a fastener 55.

FIG. 6 illustrates an exterior of the fabricated corner described with respect to FIG. 4. While the central wall portions 58, 63 are brought together with the tabs 52, the base sections 28 and upper rim portions 30 will not join perfectly together. In fact, normally, there will be a gap 65 at the junction of the base sections 28 and upper rim portions 30 which is unsightly and unacceptable in a finished casket product. Therefore, to cover the gaps 65, the intersections of the lower base sections 28 of the respective end and side wall sections 24, 25 are covered by a lower external trim piece 66 which is adhered or glued in place. Similarly, an upper external trim piece 68 is similarly applied to the exterior of each of the intersections of the upper rails 30 of the respective end and side wall sections 24, 25. A corner trim piece 32 is applied to the outside of the corner to cover the joined tabs 52 and is secured by fasteners 70, adhesive or other means. The trim pieces 32, 66, 68 provide an acceptable finished appearance to the exteriors of the corner intersections of the walls 23. The trim pieces 32, 66, 68 may be molded, for example, injection molded, from plastic or other suitable material.

Referring to FIG. 7, in the embodiments illustrated in FIGS. 2B and 2E, it may be desirable to split an end wall 24 of the casket into separate sections 24a, 24b. The wall sections 24a, 24b are then joined together in the fabrication process as an alternative to, or in addition to, the joining one or more corners of the casket as described with respect to FIGS. 4-6. Referring to FIG. 7, end wall sections 24a, 24b have respective tabs 72, 74 that are directed toward the interior of the casket. Fasteners 76 extend through the tabs 72, 74 to connect the end wall sections 24a, 24b together. As previously described, an adhesive may be applied between the tabs 72, 74 to further secure the end wall sections 24a, 24b together. If the end wall sections 24a, 24b are fabricated very accurately, such as by a roll forming process, the resulting seam or joint between the end wall sections 24a, 24b may not be objectionable. However, alternatively, it may be desirable to utilize a trim piece 77 that covers the joint between the end wall sections 24a, 24b to improve the appearance. The trim piece 77 may be made from injection molded plastic or other material and attached to the end wall 24 by an adhesive. As shown in FIG. 8, the trim piece 77 may have a flange 78 that is wedged between the tabs 72, 74. A bracket 34 (FIG. 1) may also be used to obscure the joint between the end wall sections 24a, 24b either in place of, or in addition to, the trim piece 77 depending on the location of the tabs 72, 74 as well as the quality of the joint between the tabs 72, 74. For example, if the tabs 72, 74 are close to the centerline of the end wall 24, the bracket 34 may be sufficient to cover the joint between the tabs 72, 74. However, the appearance of the joint may dictate that both the bracket 34 and the trim piece 77 be used. In another

embodiment, If the tabs 72, 74 are positioned at a location offset from the centerline of the end wall 24, then the bracket 34 would not cover the joint, and the trim piece 77 would normally be used.

While FIGS. 4-6 illustrate a preferred construction of a corner of the casket, the backing plate 54 may be modified in some respects to accommodate different constructions of the shell 22. The structure of the shell 22 must first adequately support the weight of the contents of the casket. In addition, it is preferable that the lower portion of the shell 22, for example, the lower 4 inches, provide a nonprotective seal, so that if a small amount of fluid accumulates in the bottom of the shell 22, the fluid will not leak from the casket.

FIG. 9 illustrates a first embodiment for attaching the bottom 26 to the walls 23, for example, respective end and side wall sections 24 and 25. The walls 23 have a generally horizontal flange 64 that extends from the base element 28 and terminates with a generally vertical, upturned lip 80. Thus, the base element 28, flange 64 and lip 80 form a generally J-shaped channel or peripheral slot 79 extending from the lower edge of the walls 23 inward toward the interior of the casket 20. The bottom 26 is fabricated to form a pan area 81 with a peripheral raised wall section 82. The wall section 82 intersects at its upper edge a peripheral generally horizontal surface 83 that, in turn, intersects at its outer edge a downward directed, generally vertical peripheral wall section 84. The peripheral wall section 84 intersects at its lower edge a peripheral, generally horizontal surface 85 that, in turn, intersects at its outer edge an upper directed or, generally vertical, peripheral outer wall section 86. Thus, the wall section 84, surface 85 and peripheral wall 86 form a generally U-shaped upturned channel. The outer wall section 86 is higher, for example, 4 inches, and thus, being integral with the pan area 81 of the bottom section 26, is effective to contain small quantities of fluid in the casket 20. The entire bottom 26 from the pan section 81 to the peripheral side wall 86 may be drawn from a single piece of sheet metal. Alternatively, the entire bottom 26 from the pan section 81 to the peripheral surface 85 may be stamped from a single piece of sheet metal to include a short lip 88 (shown in phantom). The outer side wall 86 may then be fabricated and assembled with the bottom 26 by welding and/or adhering the wall section 86 to the lip 88.

In the assembly process, the bottom 26 is located in its desired position for assembly. The flange 64 of the walls 23 is located below the peripheral surface 85 of the bottom 26 such that the peripheral surface 85 of the U-shaped channel of the bottom 26 is located in the peripheral slots 79 of the walls 23. Adhesive may be applied between the flanges 64 and peripheral surface 85 and/or between the outer walls 86 and the walls 23 as desired. Thereafter, the corner formed by the intersection of the ends of the walls 23 is assembled by positioning the overlapping tabs as previously described and attaching corner backing plates 90 to the interior of the walls 23. The assembly of the walls 23, bottom 26 and corner plates 90 comprises the shell 22. Since the outer walls 86 of the bottom 26 function as a liquid seal, it is not required that the corner plates 90 perform that function; and therefore, the corner plates 90 have a different configuration than that illustrated in FIG. 2. The corner plates 90 provide structural support for the assembly of the corner at the intersection of the walls 23. In this second embodiment of a corner assembly, each corner plate 90 has a lower end formed into a foot 92 that is located on top of the peripheral surfaces 83 of the bottom 26. Therefore, upon securing the corner plate 90 with fasteners 96 and adhesive as previously described, the corner plate 90 also locks the bottom 26 with respect to

the sidewalls **23** so that the surface **85** is secured within the channels **79** of the walls **23**. Adhesive may be applied between the foot **92** and the surfaces **83**. Since it is intended that the bottom **26** with the outer walls **86** provide a liquid seal, preferably fasteners are not used inside the perimeter of the outer walls **86**. An upper end **98** of the corner plate **90** is disposed behind a downward projecting lip **98** within the upper rim portions **30** of the end and side walls, **24**, **25**, respectively.

FIGS. **10** and **11** illustrate an alternative construction of the bottom section **26** with the walls **23**. In this embodiment, each of the flanges **64** that extend horizontally inward from the lower edge of a respective base element **28** of the walls **23** has a peripheral slot or peripheral groove **100** formed on its inner-directed peripheral edge. The slot or groove **100** has a space between its walls **102**, **104** that is slightly larger than the thickness of the bottom section **26**. The bottom **26** has an interior peripheral raised wall **82** that intersects at its upper edge a generally horizontal peripheral surface **83**. The peripheral surface **83** intersects at its outer edge a downward directed wall **105** having a lower peripheral edge **106**. In the assembly process, the peripheral edge **106** of the bottom section **26** is inserted into the peripheral groove **100** with an adhesive; and as shown in FIG. **11**, the groove **100** is then crimped either at selected locations or, continually, over its length to mechanically secure the bottom **26** to the walls **23**, thereby forming the shell **22**. The groove **100** may also be rolled with a roll seaming machine. The walls **23** are also connected at their ends with a corner plate **54** in a manner as described with respect to FIGS. **4-6**. Sufficient adhesive is used with the corner plate **54** and the groove **100** so that a minimal amount of fluid is retained within the shell **22** for some period, for example, several days.

FIG. **12** illustrates a third embodiment of the bottom **26** with the walls **23**. The bottom **26** is normally made of metal and includes a pan area **110** having a generally vertical peripheral outer wall **112**. The pan area **110** and outer wall **112** may be fabricated together using a metal drawing process or may be fabricated separately and joined to form a liquid type seal, thereby holding liquid within the volume of the bottom **26**. The base element **28** of the walls **23** has a inner directed horizontal flange **64** extending from its lower edge. Extending from the inner directed edge of the flange **64** is an L-shaped element **114** having a generally vertical wall **116** intersecting the inner edge of the flange **64** and a second generally horizontal wall **118** extending inward toward the interior of the casket **20**. The bottom **26** is connected to the walls **23** by means of metal clips **120**. Each clip **120** extends substantially the full length of each of the walls **23**.

The upper ends of the clips **120** have upper sides **122** that are folded over and substantially parallel to the main vertical walls **124** to form a groove or peripheral slot **126** that receives the upper edge of the outer walls **112** of the bottom **26**. The clips **120** have an inner directed generally horizontal lower side **128** that extends from the bottom of the vertical side **124**. At the inner edge of the lower side **128**, the clips **120** terminate with a downward and outward directed, generally J-shaped element **130**. The J-shaped element **130** terminates on its outer peripheral edge with an upper directed lip **132**.

In the assembly process, the peripheral slots **126** of the clips **120** are located on the upper peripheral edges of the outer wall sections **112** of the bottom **26**. Thereafter, the L-shaped portions **114** of the walls **23** are slid into the J-shaped elements **130** of the clips **120**, thereby placing the flanges **64** in mechanical communication with one longitu-

dinal side of the clips **120**. Upon inserting the walls **23** into the clips **120**, the horizontal sections **118** are located above the bottom portions **131** of the J-shaped elements **130**. In addition, the lip sections **132** of the J-shaped elements **130** extend upward along the outer directed surfaces of the vertical sections **116**. Thus, the clips **120** capture the lower portions of the walls **23** and prevent relative motion with the walls **23** either up, down or laterally. Further, the clips **120** also capture the bottom **26** in the vertical and lateral directions, and thus, the bottom **26** is restrained from vertical and lateral motion with respect to the walls **23**. Thereafter, as described with respect to FIG. **4**, tabs at the ends of the walls **23** are positioned in an overlapping relationship, and a simple right angle corner plate **134** is located against the central wall sections **58**, **63** of the end and side walls **24**, **25**, respectively. The corner plate **134** is held in place by fasteners **136** and/or adhesive in a manner similar to that as previously described with respect to FIG. **9**. As will be appreciated, the corner plate **134** may be abbreviated and not extend into the base **28** or upper rim **30**, and further, the upper end of the corner plate **134** may extend into the upper rim portion **30** as further illustrated in FIG. **9**. Alternatively, the corner plate **134** may be identical to the corner plate illustrated in FIG. **4**.

FIG. **13** illustrates a further embodiment of a bottom **26** and walls **23**. The bottom **26** is comprised of a plastic pan **140** having integral vertical side walls **142**. The pan **140** is preferably produced by vacuum forming a plastic blank. The bottom **26** is interconnected with the walls **23** by means of clips **144**. The clips **144** are fabricated along one side to form a longitudinal peripheral slot **146** between a forward side wall **148** and a main clip side wall **150**. The opposite sides of the clips **144** have a second longitudinal slot or groove **152** formed between lower clip walls **154**, **156**.

In the assembly process, the longitudinal slots **146** of the clips **144** are first placed over the upper periphery of the vertical walls **142** of the bottom **26**. Thereafter, flanges **64** that extend horizontally from the bottom of base elements **28** of the walls **23** are inserted into the longitudinal slots **152** formed between the lower walls **154**, **156** of the clips **144**. The tabs at the ends of the walls **23** are located in an overlapping relationship, and a corner plate **158** is located on the interior of the walls **23**. Fasteners **160** and/or adhesive are used to rigidly connect the tabs at the ends of the walls **23** with the corner plate **158**. The corner is assembled in a manner similar to that described in FIG. **12**; and further, the corner plate **158** may have different embodiments as described with respect to the corner plate **134** of FIG. **12**. After all of the corners between the separable walls **23** have been joined, the bottom **26** is secured vertically and horizontally within the interior of the walls **23** by the clips **144** and the corner structures at the intersections of the walls **23**. Again, the pan **140** with its walls **142** is effective to retain small amounts of fluid within the casket **20**. That capability is achieved with this embodiment without the requirement of utilizing adhesives or glues in the basic construction of the shell **22**.

After the shell has been assembled in accordance with one of the structural embodiments described above, a decorative material such as a fabric is installed. Referring to FIG. **14**, the decorative fabric material **166** is normally supplied as a single piece having a length sufficient to extend around the head end and front side walls of the casket that are beneath the upper cover **44** (FIG. **1**). The material **166** has a first, "big body" portion **168** that, when the casket is closed for burial, is draped over the interior of the head end and front side walls of the casket shell **22**. Normally, in laying the

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material around a corner 170 of the casket 22, the material 166 would be cut and sewn together to custom fit the material 166 around the corner 170. In this embodiment, the excess of the material 166 that results from forming the material 166 around the corner 170 is neatly folded into a decorative pattern or "diaper fold" 171, thereby eliminating the cutting and sewing process while still providing an acceptable corner treatment. The fabric 166 further has a skirt portion 169 that extends downward approximately 13 inches over the interior walls of the casket. When the casket is opened for viewing purposes, as shown in FIG. 15, the "big body" portion 168 is folded over the top and exterior of the head end and front side walls of the casket 20. As before, the excess of the material 166 that results from forming the material 166 around the corner 170 is neatly folded into a decorative pattern or "diaper fold" 171. The "big body" portion 168 and skirt portion 169 are separated by the securing means for the material 166.

The material 166 is secured in place by utilizing an upward opening groove 173 that is formed along the inner periphery of all or a part of the upper rim 30 of the walls 23. The groove element 173 can be roll formed into the upper rim portion 30 of the end and side walls 24, 25 or attached as a separate element to the end and side walls 24, 25. Referring to FIG. 16, the groove 173 may be formed on the edge of a flat shell rim frame 178 that is mounted on top of the upper rim 30 of the walls 23 of the casket shell 22 by an adhesive, fasteners 179 or other suitable means. In this embodiment, the fabric 166 is first inserted into the slot 180 between the legs 176 of the wedge 175. Thereafter, the legs 176 are squeezed together and the wedge 175 is inserted into the groove 173, thereby securing the fabric 166 in place. As will be appreciated, in other embodiments, the fabric 166 may be connected to the wedge 175 by sonic welding adhesive or another process such that only the wedge 175 need be inserted into the groove 173. Such an arrangement may simplify the application of the material 166 to the shell 22.

An alternative embodiment of the upper portion of the shell is illustrated in FIG. 17. In this embodiment, the upper rim portion 30 of the shell 22 is removed; and the end and side walls 24, 25 terminate with an upper directed edge 199. Further, as shown in FIG. 18, an upper shell rim frame 172 has a slot 181 that receives the edge 199 of the respective end and side walls 24, 25 around the perimeter of the shell 22. The shell rim frame 172 can be extruded from an ABS material or other suitable plastic or metal material and secured to the top of the casket walls 23 by an adhesive or other suitable means. The groove 173 may be formed as part of the shell rim frame 172, and the material 166 can be secured in the groove 173 by means of a wedge 175. The wedge 175 is preferably generally V-shaped plastic extrusion with sides or legs 176 that bend or flex with respect to each other. The material 166 is first inserted into the groove 173. Thereafter, the wedge 175 is squeezed together as it passes through the relatively narrow opening 177 of the slot of the groove 173. As the wedge 175 enters the groove 173, the legs 176 expand slightly, thereby capturing the material 166 securely within the groove 173.

The shell rim frame 172 is fabricated from a continuous extrusion in accordance with one of several different embodiments. For example, referring to FIG. 19, adjoining end and side rim frame members 182, 183, respectively, are cut or mitered at a 45° angle to form abutting ends. L-shaped links 184 are shaped to fit within the internal channels 185 (FIG. 18) of the shell rim frame 172. The links 184 are attached to the respective rim frame members 182, 183 by adhesive, fasteners, sonic welding or other means.

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Referring to FIG. 20, in another embodiment, a corner may be formed without cutting the shell rim frame 172 into two separate pieces. In a known manner, a 90° notch is cut into the shell rim frame 172 with the apex 186 of the notch being located at the location of the corner 187. The shell rim frame 172 is then folded to bring the sides 188 of the notch together, thereby forming a 90° corner in the shell rim frame 172. A single L-shaped key 189 is shaped to fit within a channel 190 (FIG. 18) formed between adjacent intersecting surfaces 191, 192 (FIG. 18). The L-shaped key 189 is normally connected to the intersecting members of the rim frame 172 by means of adhesive, welding or fasteners 193. Alternatively, the corner 187 may be formed by mitering intersecting ends of the shell rim frame 172 and securing them together in a manner as described above with respect to FIG. 19.

FIG. 21 illustrates a third alternative embodiment of forming a corner for the shell rim frame 172. As previously described, the shell rim frame 172 is cut or mitered at 45° to form end and side rim frame members 182, 183, and those rim frame members 182, 183 are inserted into a corner molding 194. The corner molding 194 has an exposed trim surface 195 that covers the intersection between the rim frame members 182, 183. The molding 194 further has integral molded keys 196 oriented at right angles and shaped to fit into the channel 190 (FIG. 18). As will be appreciated, the keys 196 can also be molded as one or more keys that have a shape that fits within the openings 185 of the shell rim frame 172 (FIG. 18).

FIG. 22 illustrates a further alternative embodiment of forming a corner for the shell rim frame 172. In this embodiment, a corner connector 207 is molded with tabs 208 that are shaped to be inserted into the cavities 185 (FIG. 18) of the shell frame members 172. Alternatively, the tabs 208 may be shaped to be inserted into the slot 190 of the shell frame members 172. The tabs 208 are connected to the shell frame members by welding, adhesives, mechanical fasteners or other appropriate fastening means.

Casket Cover Constructions

After the assembly of the shell 22 is complete, the cover 40 (FIG. 17) must be assembled. The cover 40 is comprised of a lower, or foot, section 42 and an upper, or head, section 44. The sections 42, 44 are similar in construction; and therefore, only the construction of the upper section 44 will be described in detail.

Referring to FIGS. 17 and 23, the upper section 44 includes a cap 197 that provides an exterior finish for the upper section 44. Inside the cap 197 is a dish 198 that provides a decorative fabric-like appearance. The inner end of the upper section 44 is terminated by a header piece 200. The cap 197 is preferably formed from a single piece of prefinished sheet metal, for example, prefinished 20 gauge steel, that has been stamped to provide the desired external shape and appearance of the upper section 44. The dish 198 may be manufactured in accordance with known techniques, that is, attaching a shirred fabric to a chip board or pressed board backing with staples or other fasteners, so that the desired shape and structure of the dish 198 is provided. In other embodiments, the dish 198 may be vacuum formed from a plastic material with a desired pattern, if any, molded directly into the dish material. Consequently, with that embodiment, the dish 198 is a single molded plastic piece having a molded surface texture that very closely simulates the texture of a shirred fabric. Such a dish is the subject of the assignee's copending design patent application filed on even date herewith entitled Molded Casket Dish, Ser. No. 29/108,026, and the entirety of which is hereby incorporated

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by reference herein. The edges of the metal cap 197 and the dish 198 are mechanically secured by using a frame 202 that extends around three sides of the cap 197 and dish 198.

Referring to FIG. 24A, in one embodiment, the frame 202 is an extrusion that is identical to the shell cap extrusion 172 illustrated in FIG. 18. As will be appreciated, the frame 202 can be made to its desired U-shape by fabricating corners in a manner similar to the corner constructions described in FIGS. 19–22. If the dish 198 is a standard chip board and fabric construction, the frame extrusion 202 has a slot 210 extending longitudinally along the inner of the periphery of the frame 202, and the slot 210 is sized to receive a peripheral V-shaped edge 212 of the chipboard dish 198. The frame extrusion 202 has a second slot 214 extending longitudinally along the outside of its periphery; and the slot 214 is sized to receive a peripheral edge 216 of the cap 197. The edges 212, 216 are normally secured within their respective slots 210, 214 with an adhesive.

If the dish 198 is a molded dish, referring to FIG. 24B, the frame extrusion 202 has a slot 218 extending longitudinally along the inner of the periphery of the frame 202, and the slot 218 is sized to receive a peripheral edge 220 of the molded dish 198. The extrusions 202 of FIGS. 22A and 22B are similar in that they both have a slot 214 for receiving an edge 216 of the cap 197. In FIG. 24B, the edges 216, 220 are normally secured within their respective slots 214, 218 with an adhesive. As will be appreciated, the frame extrusion 202 of FIG. 24B can be made to its desired U-shape by making corners as described with respect to FIGS. 18–20.

Referring to FIG. 25, if the dish 198 is vacuum molded, it must be mounted in the U-shaped frame 202 prior to the assembly of the header 200 (FIG. 23). Therefore, as shown in FIG. 25, the U-shaped frame 202 is first constructed, and then the peripheral edge 216 of the cap 197 is glued into the slot 214 of the frame 202. Thereafter, the edge 220 of the dish 198 can be slid into the slot 218 of the frame 202. However, if the dish 198 is chipboard, it can be mounted in the frame 202 after the assembly of the header 200 to the cover 44.

Referring to FIG. 26, the assembly of the sheet metal cap 197 to the header 200 must be accomplished so that the end edge 222 of the sheet metal cap 197 is not exposed, and the header and cap assembly present a desired appearance. The header 200 is preferably molded, for example, injection molded, from a plastic material. Therefore, the connection of the header 200 to the cap 197 can be accomplished with several different constructions.

Referring to FIG. 27A, with a first embodiment, the header 200 is injection molded to have a peripheral slot 224 between a flange 226 and an outer peripheral lip 227. The slot 224 is sized to receive the end edge 222 of the sheet metal cap 197. The end edge 222 is normally secured in the slot 224 with an adhesive. An alternative construction is illustrated in FIG. 27B in which the header 200 is manufactured from pre-finished sheet metal or a molded plastic material. In this embodiment, the end edge 222 of the sheet metal cap 197 overlaps the outer peripheral lip 228 of the header 200. The portion of the end edge 222 extending past the outer surface of the header 200 is covered with an edge molding 229. Normally, the lip 228 of the header 200 is secured to the inner surface of the cap 197 by an adhesive. Referring to FIG. 27C, in a third embodiment, the sheet metal or plastic header 200 has a honeycomb or other semi-rigid material 230 glued to its inner surface at a location to form a peripheral notch or channel 232. The notch 232 receives and supports the end edge 222 of the sheet metal cap 197, and an adhesive is used to bond the cap 197 and header 200 together.

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As illustrated in FIG. 26, the header 200 has an interior wall or projection 236 under which an end of the frame 202 is inserted during the assembly of the header 200 with the frame 202. The wall 236 has a profile generally matching the profile of the frame 202. The frame 202 being a plastic extrusion has a coefficient of expansion greater than the metal cap 197. Thus, the wall 236 must have a height, that is, extend out from the header 200, a sufficient amount to hold the frame 202 within the header 200 over the expected range of longitudinal contraction and expansion of the frame 202. Normally, the end of the dish 198 is adhered to the outer directed surface of a flange 238 on the inner surface of the header 200 as illustrated in FIG. 26. As will be appreciated, instead of being injection molded, the header 200 can be stamped from a 24 gage prefinished sheet metal that is used to make the cap 197. With this embodiment, the header is limited to having an outer peripheral lip such as lips 227, 228 of FIGS. 27A and 27B under which the end edge of the cap 197 would be attached by welding, bonding or other means. Further, with a metal header 200, the support 236 is made separately from metal or plastic and attached to the sheet metal header by welding, bonding or other means.

A simplified dish and header construction is illustrated in FIG. 28. In this embodiment, a dish 240, peripheral frame 242, header 244 and peripheral cap retaining lip 246 are formed together as an integral unit 248. The integral unit 248 is normally vacuum formed out of a plastic material having score lines 250 corresponding to the edge to be folded during the assembly process. The lip 246 has a first lip portion 246a extending around the periphery of the frame pieces 242 and a second lip portion 246b extending around the header 244. The lip portions 246a and 246b are separated by right angle notches 249. Referring to FIG. 29, during assembly, the header 244 is folded 90° along score line 250, and the sides of the notches 249 come together to form the continuous lip 246. The sheet metal cap 197 is then fitted beneath a molded peripheral flange or lip 246 on the header 244, as well as behind the lips 246 extending along the three linear sides of the integral unit 248. The fully assembled cap unit as partially illustrated in FIG. 30 has the longitudinal and front-to-back cross-sectional profiles illustrated in FIGS. 31 and 32, respectively. The cap 197 and integral dish and header unit 248 are secured together with an adhesive. As illustrated in FIG. 28, the lip 246 may be molded into its final right angle relationship to the frame sections 242; however, as will be appreciated, alternatively, the lip 246 may molded as individual pieces that are coplanar with frame sections 242. In this embodiment, a score line separates the individual lip pieces from adjacent frame sections; and the individual lip pieces are folded 90° along the score line to form a continuous lip similar to the molded lip 246 illustrated in FIG. 28.

FIGS. 33 and 34 illustrate a still further embodiment of a casket cover assembly. In this embodiment, a sheet metal cap 197 is formed in a manner as previously described. Further, the peripheral edges 216 are disposed in slots 214 of the cap frame members 202 in a manner similar to that described with respect to FIG. 24B. The cap 197 is drawn or stamped to have lower side walls 252 and a lower end wall 254. Preferably, the cap 197 is drawn or stamped so that a gap 256 is formed at the corners formed by the end wall 254 and side walls 252. Normally, the corner is finished by welding the side and end walls 252, 254 together and thereafter, grinding the welded corner to the desired finish. That process is expensive and labor intensive and preferably avoided if possible. Thus, with this embodiment, the cap frame includes an end frame member 258 that has right

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angle moldings or trim pieces **260** extending upward from the member **258**. The trim pieces **260** have a size and shape to cover the gap **256** upon the cap **197** being assembled into the cap frame **202**. The end member **258** is preferably injection molded with tabs **262** that are sized to fit into the slots **185** (FIG. 24B) of the cap frame members **202**. However, as will be appreciated, the end cap frame member **258** may also be fabricated from sheet metal and provide similar benefits.

FIG. 33 further illustrates an alternative embodiment for attaching a header **264** to the side pieces of the cap frame **202**. In this embodiment, separate connecting brackets **266** are fabricated from plastic or sheet metal and have tabs **268** that are sized to fit within the slots **185** (FIG. 24A) of the side members of the cap frame **202**. The brackets **266** further have a connecting plate **270** with holes **272** that are sized to receive fastener elements **274** on the inner side of the header **264**. The fastener elements **274** may be secured within the respective holes **272** by fastening clips (not shown) in a known manner. Alternatively, the fastener elements **274** may be threaded shafts and secured within the respective holes **272** by threaded nuts **276** (only one being shown) in a known manner. Thus, the header **264** may be fabricated from sheet metal or plastic, and the fastener elements **274** likewise fabricated of metal or plastic material and interconnected as described above with the brackets **270** that also are fabricated from a metal or plastic material.

Referring to FIGS. 35 and 36, the casket of the present invention further includes a bed lift mechanism disposed inside a liquid tight or impervious liner **280** within the casket shell **22**. The liner **280** is normally made of a plastic film material and has a rim **281** of a heavier material, for example, paperboard, extending completely around the upper edge of the liner **280**. The rim **281** is attached at the top of the inside surfaces of the end and side walls **24**, **25** with an adhesive or other means. A bed lift mechanism **283** is of a known type and more fully disclosed in the commonly assigned U.S. Pat. No. 5,592,724 which in its entirety is hereby incorporated by reference herein. A bed frame **282** is supported on each end by a movable bracket **284** that is threadably attached to a lift screw **286**. By rotating the lift screw **286**, a respective end of the bed frame **282** is raised or lowered to a desired height. The lift screw **286** is supported at its upper end by an upper bracket **295** and at its lower end by a lower bracket **297**. The lower bracket **297** is secured by fastener bodies or shafts **290** which are welded at their lower ends to the bottom **26** of the casket shell **22**. The shafts **290** extend through holes within a first gasket **292** located between the bottom **26** of the shell **22** and the bottom of the liner **280**. The shafts **290** extend through the bottom of the liner **280** and through a second gasket **294** disposed on the upper bottom surface on the interior of the liner **280**. The shafts **290** extend through mounting flanges **296** of bracket **297** and fasteners **298** secure the assembly together. The gaskets **292**, **294** provide seals that prevent any fluid within the liner **280** from leaking. The fastening shafts **290** and fasteners **298** may be made from any known fastener material and preferably are rust resistant. Alternatively, the fastener shafts **290** may be plastic shafts either smooth or threaded, and the fasteners **298** may be either clips or plastic threaded nuts. As will be appreciated, any combination of metal and/or plastic shafts **290** can be used with plastic or metal clips or nuts **298**.

The upper end of the screw **286** may be secured to the casket shell **22** in several ways. For example, the lift screw bracket **295** may be welded, bonded or otherwise adhered to the inside surface of the end wall **24** of the casket shell **22**.

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Alternatively, the screw bracket **295** may have connecting flanges similar to the bracket **297** that are disposed over fastening shafts extending from the end wall **24** in a manner similar to the shafts **290** that extend from the bottom of **26** of the shell **22**. Alternatively, the lift screw bracket **295** may be fabricated as an integral part of the shell rim frame member **300**. The shell frame member **300** may be fabricated from metal and have a cross-sectional profile similar to that illustrated in FIG. 18. Preferably, the shell rim frame member **300** is an injected molded piece having a cross-sectional profile similar to that shown in FIG. 18 and including the upper lift screw bracket **295**.

In accordance with one embodiment of the casket of the present invention, the upper cover **44** is hinged to the shell **22** using a living hinge illustrated in FIG. 37. The upper edge **199** is finished with an extrusion **172** similar to the extrusion illustrated in FIG. 18 which has a slot **173** for securing the fabric **166** on the shell. The upper cover has a frame extrusion **202** similar to those illustrated in FIGS. 24A, 24B for securing the peripheral edges of the cap **197** and dish **198**. The extrusions **172**, **202** have slots **302**, **304** respectively, in opposed surfaces within which an extruded plastic hinge **306** is mounted. The extruded plastic living hinge **306** is preferably secured to the frame extrusions **172**, **202** by an adhesive. The living hinge **306** is comprised of opposed members **308**, **310** which are connected along one edge **312**. In this embodiment, extruded frame members **172**, **202** have respective opposed bosses **314** which come into contact when the cover **44** is closed over the shell **22**. Thus, the bosses **314** provide a fixed relationship between the extruded frame members **172**, **202** around the entire periphery of the casket.

FIG. 38 illustrates an alternative embodiment for hinging the casket covers **42**, **44** to the casket shell **22**. The covers **42**, **44** are pivotally supported on respective L-shaped end brackets **320**, **322** and a centrally located bracket **324**. An adjacent hinge pin **326** extends from both sides of the bracket **324** and into holes within the headers **328**, **330** of the respective covers **42**, **44**. A base flange **332** of each of the end brackets **320**, **322** is secured to an upper surface of the rear edge of the casket shell **22** by fasteners, adhesives or other known securing means. A perpendicular, generally vertical flange **334** on each of the end brackets **320**, **322** receives a hinge pin **336** extending through an exterior end surface of the covers **42**, **44**. The pins **336** are shoulder bolts that have a smooth shoulder immediately beneath a decorative head of the pin for providing a bearing surface for the pivoting motion of the cover **42**. The ends of the hinge pins **336** are threadably engaged with the vertical flanges **334**.

Referring to FIG. 39, the vertical flanges **334** are L-shaped and consist of a vertical leg **338** and a rearward horizontal leg **340** that extends into a slot **342** in a frame member **202** of the casket cover. Thus, the working portions, or pivot portions, of the hinge brackets **320**, **322** and pins **336** are hidden from view. A further advantage of that hinge construction is that the frame member **202** operates as a stop as illustrated in FIG. 40. The length of the horizontal member **340**, that is, the distance from the pivot pin **336** from the rear edge of the vertical member **338**, must be sufficient to permit the cover **42** to open far enough such that its center of gravity **344** pivots past or rearward of the pivot axis **346**. Once the center of gravity **344** is rearward of the pivot axis **346**, the cover **42** will tend to continue to rotate rearwardly. However, engagement of the outer surface of the frame member **202** against the rearward edge of the hinge bracket member **338**, forms a stop prohibiting further rotation of the cover **42**. Thus, the cover may be raised to the

position illustrated in FIG. 40, and it will remain in the open position until manually closed.

FIG. 41 illustrates an alternative embodiment in which the various hinge pins 326, 336 of FIG. 38 are replaced by a single rod 350. The hinge rod 350 extends through the one end of the casket cover 44, through the hinge bracket 322, through the other end of cover 44, through hinge bracket 324, through one end of the cover 42, through the hinge bracket 320 and through the other end of the cover 42. The ends of the hinge or pivot rod 350 are then covered with decorative caps 352 which also function to maintain rod 350 in its desired longitudinal position. The hinge brackets 320, 322, 324, hinge pins 326, 336 and the hinge rod 350 may be made from any appropriate material either combustible or noncombustible. For example, the hinge brackets 320-324 may be made from a decorative metal such as cast zinc or brass. Alternatively, the hinge brackets 320-324 may be made from plastic or wood. Similarly, the hinge pins 326, 336 and hinge rod 350 may be made from a metal, plastic or wood material. As will be appreciated, a mix of those materials may be utilized as desired. For example, the brackets 320-326 may be made of plastic and the hinge pins 326, 336 or rod 350 made of metal or wood, etc.

While the invention has been illustrated by the description of a preferred embodiment and while the embodiment has been described in considerable detail, there is no intention to restrict nor in any way limit the scope of the amended claims to such detail. Additional advantages and modifications will readily appear to those who are skilled in the art. For example, four walls 23 are shown intersecting to form a right angle corner; however as will be appreciated, in other casket constructions, the more than four walls 23 may be used which will intersect to form corners that are not at right angles. As will also be appreciated, a corner plate having a different shape may be used as described herein.

Therefore, the invention in its broadest aspects is not limited to the specific details shown and described. Consequently, departures may be made from the details described herein without departing from the spirit and scope of the claims which follow.

What is claimed is:

1. A casket comprising:

- a plurality of walls being formed from at least one piece of sheet metal, the at least one piece of sheet metal having
 - a cross-sectional profile corresponding to a desired cross-sectional profile of the walls,
 - cut out sections at locations corresponding to desired corners of the casket, the at least one piece of sheet metal being cut out over areas other than an outermost portion of the cross-sectional profile of the walls and the corners being formed by folding the at least one piece of sheet metal approximately 90° along a line bisecting the cut out sections,
 - tabs extending from opposite walls of the cut out sections to facilitate joining the walls forming the corner;
- a bottom connected to lower portions of the walls to form a shell therewith; and
- a cover having a metal cap and mounted on upper portions of the walls to form a closure for the shell.

2. A casket of claim 1 wherein the plurality of walls further comprises two side walls and two end walls formed from the single piece of sheet metal and one of the corners is formed by joining ends of the single piece of sheet metal.

3. A casket of claim 1 wherein the plurality of walls further comprises two side walls and two end walls formed

from two pieces of sheet metal and two of the corners of the casket are formed by joining ends of the two pieces of sheet metal.

4. A casket of claim 1 wherein the plurality of walls are formed from two pieces of sheet metal, each of two pieces of sheet metal forming one side wall and portions of two end walls, and the two pieces of sheet metal further include ends having tabs extending therefrom, the two end walls being formed by joining the tabs extending from the ends of the two pieces of sheet metal.

5. A casket of claim 1 wherein the plurality of walls are formed from two pieces of sheet metal, one of the two pieces of sheet metal forming one side wall, two end walls and portions of a second side wall and another of the two pieces of sheet metal forming another portion of the second side wall, the two pieces of sheet metal further include ends having tabs extending therefrom, the second side wall being formed by joining the tabs extending from the ends of the two pieces of sheet metal.

6. A casket comprising:

- a plurality of walls being formed from four pieces of sheet metal, each of the four pieces of sheet metal having
 - a cross-sectional profile corresponding to a desired cross-sectional profile of the walls
 - tabs extending from opposite ends of the pieces to facilitate joining the pieces to form a corner;
- a bottom connected to lower portions of the walls to form a shell therewith; and
- a cover having a metal cap and mounted on upper portions of the walls to form a closure for the shell.

7. A casket comprising:

- a plurality of metal walls including
 - a first wall having a first tab extending from an edge of the first wall, and
 - a second wall having a second tab extending from an edge of the second wall,
 - the first and second tabs overlapping to form a joint connecting the first and second walls;
- fasteners extending through and connecting the tabs together;
- a bottom connected to lower portions of the walls to form a shell therewith; and
- a cover having a metal cap and mounted on upper portions of the walls to form a closure for the shell.

8. A casket comprising:

- a plurality of metal walls including
 - a first wall having a first tab extending from an edge of the first wall, and
 - a second wall having a second tab extending from an edge of the second wall,
 - the first and second tabs overlapping to form a joint connecting the first and second walls;
- a corner plate located on an inner directed surface of one of the first and second tabs and the first and second walls;
- a bottom connected to lower portions of the walls to form a shell therewith; and
- a cover having a metal cap and mounted on upper portions of the walls to form a closure for the shell.

9. A casket of claim 8 further comprising a connector selected from the group of an adhesive and fasteners for joining the first and second tabs and the corner plate.

10. A casket of claim 9 wherein adhesive is disposed between the tabs, the walls and the corner plate.

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11. A casket comprising:
- a plurality of metal walls including
 - a first wall having a first tab extending from an edge of the first wall, and
 - a second wall having a second tab extending from an edge of the second wall,
 - the first and second tabs having an overlapping relationship to form a joint connecting the first and second walls;
 - a corner plate located against an inner directed surface of one of the tabs and the first and second walls;
 - fasteners extending through the tabs and the corner plate to secure the first and second walls and the corner plate together;
 - a bottom connected to lower portions of the walls to form a shell therewith; and
 - a cover having a metal cap and mounted on upper portions of the walls to form a closure for the shell.
12. A casket of claim 11 wherein adhesive is disposed between the tabs, the walls and the corner plate.
13. A casket comprising:
- a plurality of metal walls having peripheral slots extending from lower sections of respective walls, wherein each lower section of a respective wall has a generally horizontal flange extending therefrom and the flange has a generally vertical peripheral lip, each lower section, associated flange and peripheral lip forming a peripheral slot;
 - a bottom having a periphery extending into the peripheral slots of the walls to join the bottom and the walls together, the bottom and walls forming a shell; and
 - a cover having a metal cap and mounted on upper portions of the walls to form a closure for the shell.
14. A casket of claim 13 wherein the periphery of the bottom has a generally U-shaped channel disposed in the peripheral slot of each of the walls, thereby joining the bottom to the walls.
15. A casket of claim 14 wherein adhesive is disposed between the U-shaped channel on the bottom and the peripheral slots of the walls.
16. A casket comprising:
- a plurality of metal walls having peripheral slots extending from lower sections of respective walls, wherein each lower section of a respective wall has a generally horizontal flange extending therefrom and the flange has a peripheral groove extending along an edge of the flange;
 - a bottom having a periphery extending into the peripheral slots of the walls to join the bottom and the walls together, the bottom and walls forming a shell; and
 - a cover having a metal cap and mounted on upper portions of the walls to form a closure for the shell.
17. A casket of claim 16 wherein a peripheral edge of the bottom is disposed in the peripheral groove of each of the walls to join the bottom to the walls.
18. A casket of claim 17 wherein adhesive is disposed in the peripheral groove of each of the walls with the peripheral edge of the bottom.
19. A casket comprising:
- a plurality of clips;
 - a plurality of metal walls having peripheral slots extending from lower sections of respective walls, wherein each lower section of a respective wall has a generally horizontal flange extending therefrom, the flange being in mechanical communication with one longitudinal

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- side of one of the clips, and each of the clips having a peripheral slot extending along an opposite longitudinal side of the clip;
 - a bottom having a periphery extending into the peripheral slots of the walls to join the bottom and the walls together, the bottom and walls forming a shell; and
 - a cover having a metal cap and mounted on upper portions of the walls to form a closure for the shell.
20. A casket of claim 19 wherein the periphery of the bottom is disposed in the peripheral slot of each of the clips to join the bottom to the walls.
21. A casket comprising:
- a plurality of metal walls including
 - a first wall having a first tab extending from an edge of the first wall, and
 - a second wall having a second tab extending from an edge of the second wall,
 - the first and second tabs having an overlapping relationship to form a joint connecting the first and second walls;
 - each wall having a generally horizontal flange extending from a lower section of the wall, and each flange having a generally vertical peripheral lip, each lower section, associated flange and peripheral lip forming a peripheral slot;
 - a corner plate located over an inner directed surface of one of the tabs and the first and second walls;
 - a bottom having a periphery with a generally U-shaped channel disposed in the peripheral slot of each of the walls thereby joining the bottom to the walls; and
 - a cover having a metal cap and mounted on upper portions of the walls to form a closure for the shell.
22. A casket of claim 21 wherein the corner plate has a foot extending downward and contacting a corner of the bottom.
23. A casket of claim 21 wherein each of the walls has an inwardly facing downward projecting lip and an upper end of the corner plate is disposed behind the downward projecting lip.
24. A casket comprising:
- a plurality of metal walls including
 - a first wall having a first tab extending from an edge of the first wall, and
 - a second wall having a second tab extending from an edge of the second wall,
 - the first and second tabs having an overlapping relationship to form a joint connecting the first and second walls;
 - each wall having a generally horizontal flange extending from a lower section of the wall, and each flange having a peripheral groove extending along an edge of the flange;
 - a corner plate located against an inner directed surface of one of the tabs and the first and second walls;
 - a bottom having a periphery disposed in the peripheral groove of each of the walls to join the bottom to the walls; and
 - a cover having a metal cap and mounted on upper portions of the walls to form a closure for the shell.
25. A casket of claim 24 wherein adhesive is disposed in the peripheral groove with the periphery of the bottom to form a liquid tight seal.
26. A casket comprising:
- a plurality of metal walls including
 - a first wall having a first tab extending from an edge of the first wall, and

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a second wall having a second tab extending from an edge of the second wall,
the first and second tabs having an overlapping relationship to form a joint connecting the first and second walls;
the first and second walls having respective generally horizontal flanges extending therefrom;
a corner plate located against an inner directed surface of one of the tabs and the first and second walls;
a clip having a first longitudinal slot engageable with one of the generally horizontal flanges and a second longitudinal slot;
a bottom having a periphery engageable with the second longitudinal slot of the clip to join the bottom to the walls; and
a cover having a metal cap and mounted on upper portions of the walls to form a closure for the shell.

27. A casket comprising:

a plurality of walls being formed from a single piece of sheet metal, the single piece of sheet metal having a cross-sectional profile corresponding to a desired cross-sectional profile of the walls,
cut out sections at locations corresponding to desired corners of the casket, the sheet metal being cut out over areas other than an outer-most portion of the cross-sectional profile of the walls and the corners being formed by folding the piece of sheet metal approximately 90° along a line bisecting the cut out sections,
tabs extending from opposite walls of the cut out sections to facilitate joining the walls forming the corner;
a bottom connected to lower portions of the walls to form a shell therewith; and
a cover having a metal cap and mounted on upper portions of the walls to form a closure for the shell.

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28. A casket comprising:
a plurality of metal walls including
a first wall having a first tab extending from an edge of the first wall, and
a second wall having a second tab extending from an edge of the second wall, the first and second tabs overlapping to form a joint connecting the first and second walls, the tabs being connected together by one of an adhesive and at least one fastener;
a bottom connected to lower portions of the plurality of metal walls to form a shell therewith; and
a cover having a metal cap and mounted on upper portions of the plurality of metal walls to form a closure for the shell.

29. A casket comprising:
at least two walls being formed from at least one piece of sheet metal, the at least one piece of sheet metal comprising a cut out section at a location corresponding to a desired corner between the two walls, the cut out section forming a tab extending from one of the two walls, the corner being formed by folding the at least one piece of sheet metal approximately 90° along a line extending across the cut out section, and the tab being used to join the two walls; and
a bottom connected to lower portions of the walls to form a shell therewith.

30. The casket of claim 29 comprising a cover mounted on upper portions of the at least two walls to form a closure for the shell.

31. The casket of claim 30 wherein the cover has a metal cap.

32. The casket of claim 29 wherein the cut out section forms at least two tabs, each of the two tabs extending from a different one of the two walls.

33. The casket of claim 29 wherein the bottom is metal.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 6,745,442 B2
DATED : June 8, 2004
INVENTOR(S) : John P. Biondo et al.

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 18.

Line 4, "A casket of claim 1 wherein the plurality of wails are" should read -- A casket of claim 1 wherein the plurality of walls are --.

Signed and Sealed this

Fourth Day of April, 2006

A handwritten signature in black ink on a light gray dotted background. The signature reads "Jon W. Dudas" in a cursive, stylized script. The first name "Jon" is written with a large, looping initial "J". The last name "Dudas" is written with a large, looping initial "D".

JON W. DUDAS

Director of the United States Patent and Trademark Office

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 6,745,442 B2
APPLICATION NO. : 09/911323
DATED : June 8, 2004
INVENTOR(S) : John P. Biondo et al.

Page 1 of 1

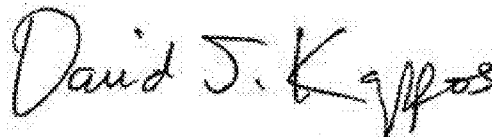
It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 18, lines 23-26, claim 6 reads “a cross-sectional profile corresponding to a desired cross-sectional profile of the walls tabs extending from opposite ends of the pieces to facilitate joining the pieces to form a corner;”; they should read --a cross-sectional profile corresponding to a desired cross-sectional profile of the walls, cut out sections at ends of the pieces, tabs extending from opposite ends of the pieces to facilitate joining the pieces to form a corner;--.

Column 20, line 36, claim 23 reads “A casket of claim 21 wherein the each of the walls has”; it should read --A casket of claim 21 wherein each of the walls has--.

Column 20, line 58, claim 24 reads “a cover having an metal cap and mounted on upper”; it should read --a cover having a metal cap and mounted on upper--.

Signed and Sealed this
Twenty-second Day of November, 2011

A handwritten signature in black ink that reads "David J. Kappos". The signature is written in a cursive, flowing style with a large initial 'D' and a stylized 'K'.

David J. Kappos
Director of the United States Patent and Trademark Office

Feb. 5, 1935.

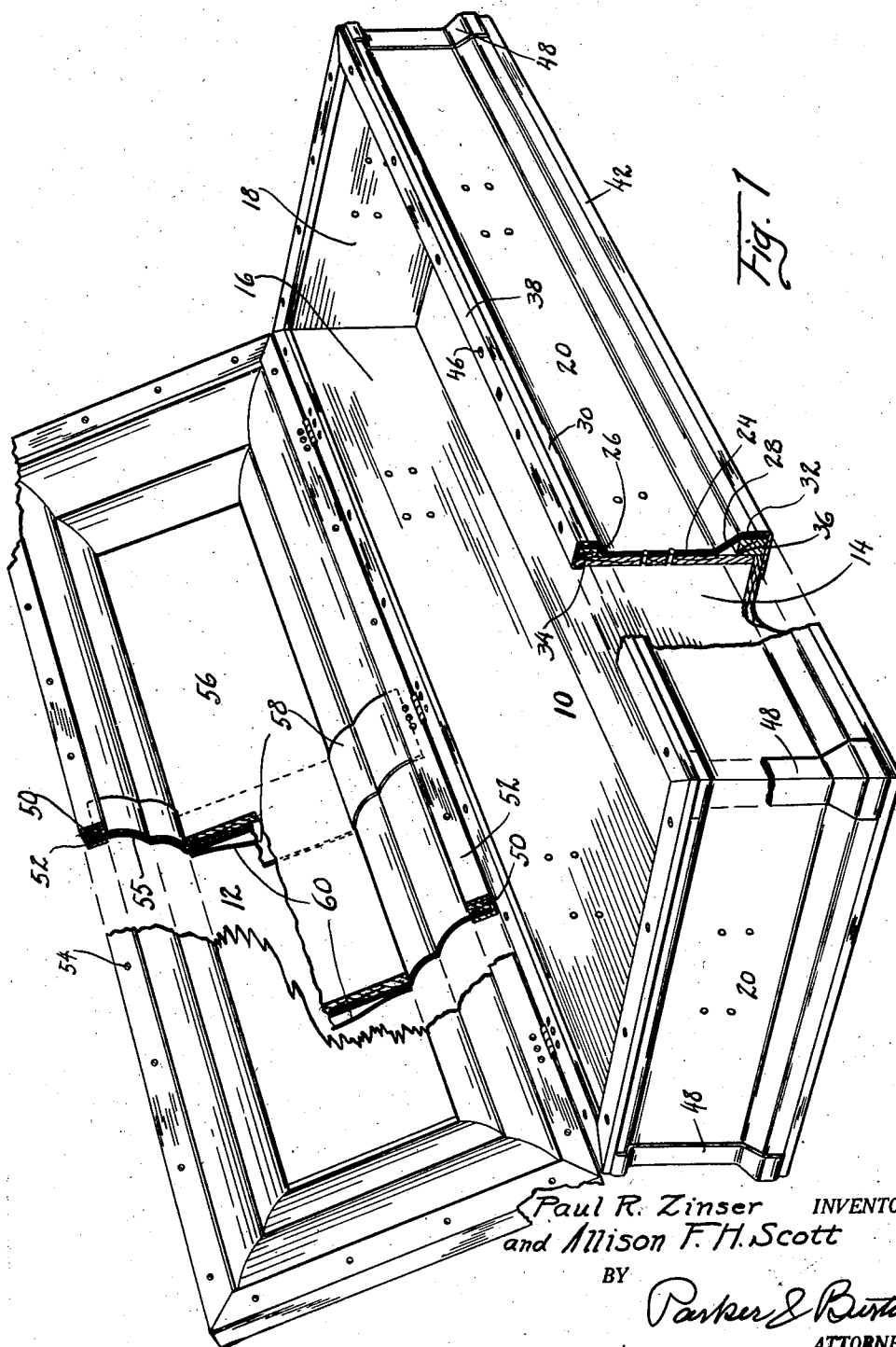
P. R. ZINSER ET AL

1,989,962

CASKET

Filed Nov. 18, 1930

2 Sheets-Sheet 1



Feb. 5, 1935.

P. R. ZINSER ET AL

1,989,962

CASKET

Filed Nov. 18, 1930

2 Sheets-Sheet 2

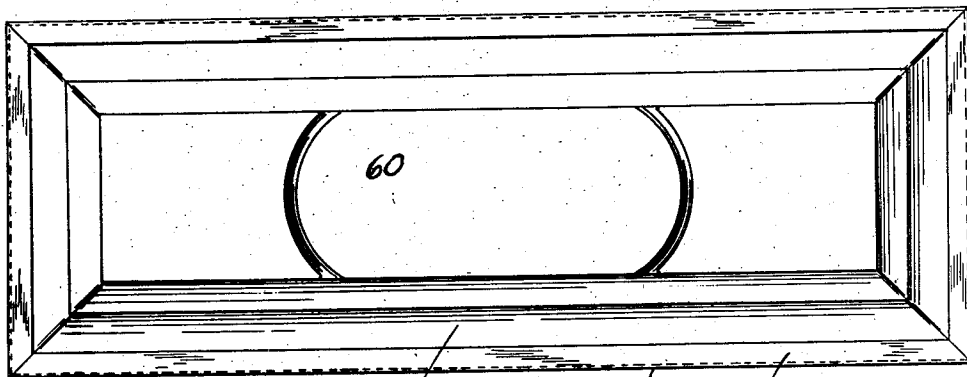


Fig. 2

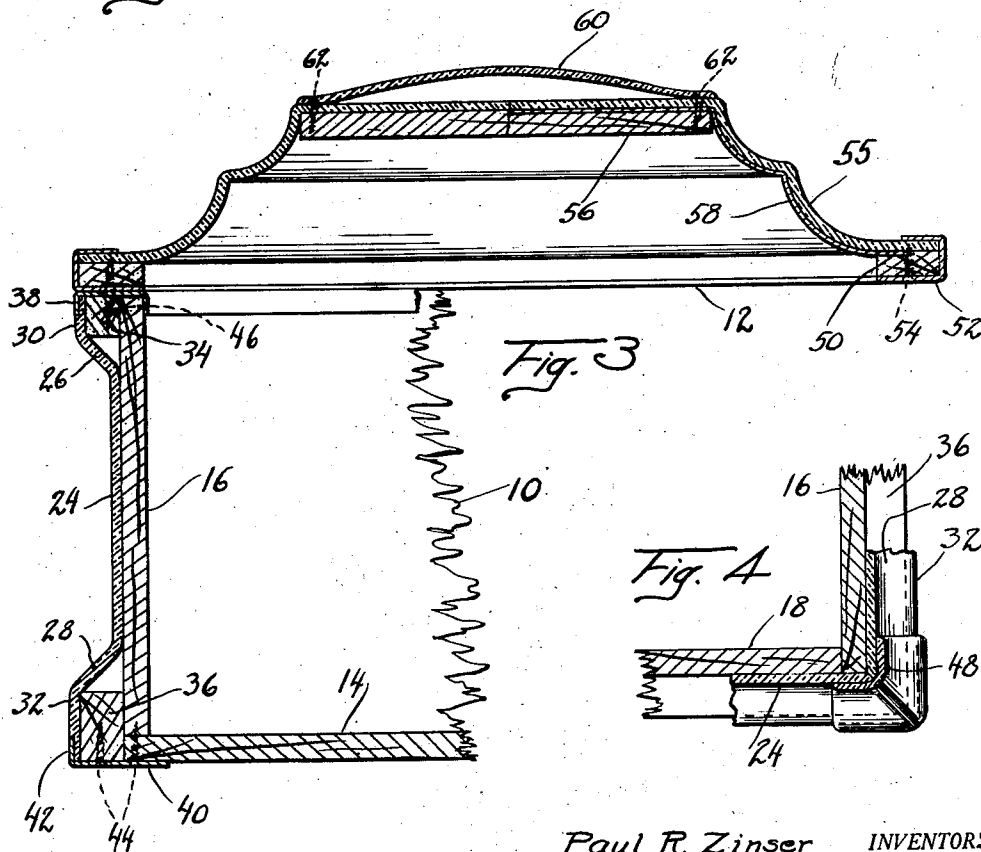


Fig. 3

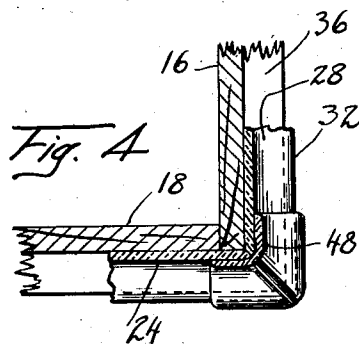


Fig. 4

Paul R. Zinser and Allison F. H. Scott

INVENTORS

BY

Parker & Burton

ATTORNEYS

UNITED STATES PATENT OFFICE

1,989,962

CASKET

Paul R. Zinser and Allison F. H. Scott, Detroit,
Mich., assignors to Woodall Industries Incorporated,
a corporation of Michigan

Application November 18, 1930, Serial No. 496,438

9 Claims. (Cl. 27—3)

Our invention relates to improvements in caskets.

One object is the provision of a casket possessing an artistic appearance which is relatively inexpensive and of durable construction. We aim to produce a casket by utilizing a material which lends itself readily to artistic decoration and which is comparatively cheap in price and also possesses to a high degree the characteristic of being water-proof and resistant to decomposition under the influence of water.

It is an object of our invention to so arrange and put together the component parts of our improved casket as to utilize material of this kind to the best advantage in a casket of what might be termed the composite type which is simple to build and which may, if desired, be sold in a knocked-down condition so that it may be assembled when desired for use.

Further objects and meritorious features of our invention will become apparent from the following description and accompanying drawings wherein like numerals refer to like parts throughout the several figures and wherein:

Fig. 1 is a perspective of our improved casket structure, partially broken away for the purpose of clearness,

Fig. 2 is a plan view of the closed casket,

Fig. 3 illustrates two sections taken transversely through the casket, the right half of the figure illustrating a section through the central reinforcing plate on the top and the left half of the figure being a section to one side of said reinforcing member, and

Fig. 4 is a sectional plan through one of our corner post assemblies.

The casket here shown is of the composite type wherein we provide a base portion, indicated generally as 10, having a closure lid 12. The base consists of a bottom 14, side walls 16, and end walls 18, which may be formed of wood.

As an outer decorative covering for the casket we provide separate panels adapted to overlie each side and end wall. These panels are preferably formed of a thermo-plastic material such as composition fiber board carrying a substantial asphaltum content which permits the board being molded into shape. The thermo-plastic material is also of such a character that not only is it readily molded into desired shape and design but it lends itself easily to decoration whereby its outer surface may be given any suitable desired decorative finish. Each outer panel member herein indicated as 20 has an outer surface which is suitable for decoration and these panel members are

adapted to cover the side and end walls of the casket. The panel element is so shaped that its intermediate portion 24 is adapted to rest directly against the interior wall structure. It has upper and lower margins which are bent outwardly as at 26 and 28 respectively and then angularly as at 30 and 32 respectively to rest upon a reinforcing spacer element 34 at the top margin and a similar element 36 at the bottom margin.

A unitary channel metal frame 38 encircles the top margin of the panel and wall assembly as will particularly appear in Fig. 3. This frame 38 has an outer flange and an inner flange. The panel is morticed on its upper margin within the outer flange and the assembly is held together by the two flanges.

There is also a unitary metal frame 40 which is angular in cross section being provided with a flange 42 and which encircles the lower margin of the panel and wall assembly. This frame structure holds the assembly together and the outer panel is morticed inside of the flange 42. Screws 44 extend through the frame 40 engaging the spacer element 36 and the side wall of the casket respectively fastening the frame member in place. These screws are countersunk in the frame. The upper frame element is secured in place by countersunk screws 46.

Each corner of the base unit 10 is provided with a reinforcing corner post element 48 which may be of metal or other similar material. The construction of this will appear from Figs. 1 and 4. These elements may be held in place at the ends by the flanges of the top and bottom frames 38 and 40.

The cover or lid for our casket is not required to withstand any great strain and it is formed as here shown of a large sheet of the molded thermo-plastic material which is shaped into the contour here illustrated. It is supported upon a rigid rectangular frame 50 and is clamped and secured to said frame by a channel shaped metal binder 52. Screws 54 are used to secure this channel binder in place. The thermo-plastic material which forms the top cover is indicated as 55 and while it is substantially sufficiently rigid to serve the purpose intended, we prefer to reinforce it with the rigid top wall member 56 which may be formed of wood or other suitable material and also we prefer generally to maintain the contour of the cover and to reinforce the same with a sheet metal brace member or strap 58 which is shown particularly in Figs. 1 and 3.

If desired, an ornamental plaque or the like

60 may be secured to the flat upper surface of the lid by screws 62.

It will appear, therefore, that the exposed outer surfaces of our casket are composed of the thermo-plastic panel material which may be molded into the desired contour and design to render them artistic. This material also possesses the water-proofing characteristics which render it suitable as a durable protective outer covering for a structure of this type. The entire assembly is held together to form a rigid unit by the wall structure we provide and the unitary top and bottom frames which secure the panel and wall assembly together.

Various modifications of the structure illustrated will be apparent to those skilled in the art and for that reason we intend to limit ourselves only within the scope of the appended claims.

What we claim:

1. A casket comprising, in combination, side and end walls and a bottom, an outer panel of molded thermo-plastic material secured as an outer covering to each side and end wall, and a continuous channel frame encircling the top margins of said side and end walls and panels with the side walls of the channel frame engaging the opposite sides of said assembly and a continuous angular frame encircling the bottom margins of said walls and panels and having its side flange holding said panels toward said walls.

2. A casket comprising, in combination, side and end walls and a bottom, an outer panel of thermo-plastic waterproof material secured as outer covering to each side and end wall, a reinforcing spacer element arranged between each side wall and its panel at the top margin thereof, a unitary channel frame encircling the top margin of said assembly of walls and panels with the side flanges of said channel frame engaging opposite sides of said assembly, a unitary angular frame encircling the bottom margin of said assembly of walls and panels with the flange thereof engaging and holding said panels toward said walls.

3. A casket structure having a side wall, a reinforcing spacer element arranged along its outer top margin, a reinforcing spacer element arranged along its outer bottom margin, a covering panel of thermo-plastic material secured over its outer surface and shaped so that its upper and lower margins rest against said spacer elements and its interior central portion rests directly against the said side wall.

4. The combination in a structure of the class described of side walls, reinforcing members extending the length thereof, and an outer covering material secured in firm juxtaposition thereto by a single member extending the length of said walls and having continuous flanges turned over opposite sides of said walls and reinforcing members.

5. A casket comprising, in combination, a rigid frame structure including side walls and reinforcing members extending around the outside of the upper and lower extremities of said walls, and an outer covering of molded thermo-plastic fibrous material secured firmly along the outer edges of said reinforcing members and bent inwardly to lie adjacent said side walls intermediate their upper and lower extremities.

6. A casket comprising, in combination, a rigid frame structure including side walls and reinforcing members extending around the outside of the upper and lower extremities of said walls, and an outer covering of molded thermo-plastic waterproof material secured firmly along the outer edges of said reinforcing members and bent inwardly to lie adjacent said side walls intermediate their upper and lower extremities, that portion of said outer covering lying adjacent the side walls being positively positioned with respect thereto.

7. A casket comprising, in combination, a rigid bottom unit, rigid side and end walls secured to said bottom, a reinforcing element of substantial thickness extending along the top and bottom of said walls, and a covering of molded thermo-plastic material extending around said walls, said covering being positively positioned along the outer faces of said reinforcing elements and extending inwardly therebetween to lie against the walls along a substantial portion of their height.

8. A casket comprising, in combination, a rigid bottom unit, rigid side and end walls secured to said bottom, a reinforcing element of substantial thickness extending along the top and bottom of said walls, and a covering of molded thermo-plastic material extending around said walls, said covering being positively positioned along the outer faces of said reinforcing elements and extending inwardly therebetween to lie against the walls along a substantial portion of their height, the positioning means therefor comprising an angular member secured to the bottom and top respectively of the lower and upper reinforcing members.

9. A casket having side walls, end walls, and a bottom, said side and end walls having reinforced upper and lower marginal portions, a thermo-plastic panel covering each wall portion and having marginal portions seated against the reinforced marginal portions of the side wall and an intermediate wall portion seated against said side wall between said marginal portions, a channel member seated over each side wall and its covering panel securing the same together, an angle member extending along each edge of the bottom and having a flange extending upwardly over the outer panel holding the same in position.

PAUL R. ZINSER.
ALLISON F. H. SCOTT.

PATENTE DE INVENCION

ENCOFRADO METALICO CON ACCESORIOS PARA MOLDEADO DE CONCRETO

OBJETIVO:

Esta invención se relaciona con un encofrado metálico para el vaciado de concreto en obras civiles de construcción e infraestructura, de fácil manejo, múltiples usos, dentro de una característica modular que permite la conexión entre sí a través de una gama de accesorios metálicos. Estos encofrados o formaletas metálicas son módulos que constituyen ensambles en lámina de acero con refuerzos y en tamaños según las necesidades de la obra y que adyacentes entre sí imparten la forma al concreto, particularmente muros, divisiones o paredes.

La fabricación se hace en lámina de acero de 2 a 3 mms de espesor y las unidades conformadas pueden tener un peso de hasta 25 kilogramos y en dimensiones que varían desde los 5 a 80 cms de ancho y desde los 20 a 240 cms de altura con escalas crecientes de 5 cms entre las diferentes medidas.

VENTAJAS:

Hablamos de su bajo peso y facilidad de manejo y transporte. En efecto el módulo básico no sobrepasa los 25 kilogramos, pero en módulos de 240 x 60 cms puede pesar 43 kilogramos, factor manejable por cualquier operario.

Facilita un acabado liso o texturizado del concreto a la vista.

Puede construirse en tamaños y medidas a manera de módulos "irregulares" cuando las circunstancias lo exijan.

Instalación manual sin necesidad de grúas torre.

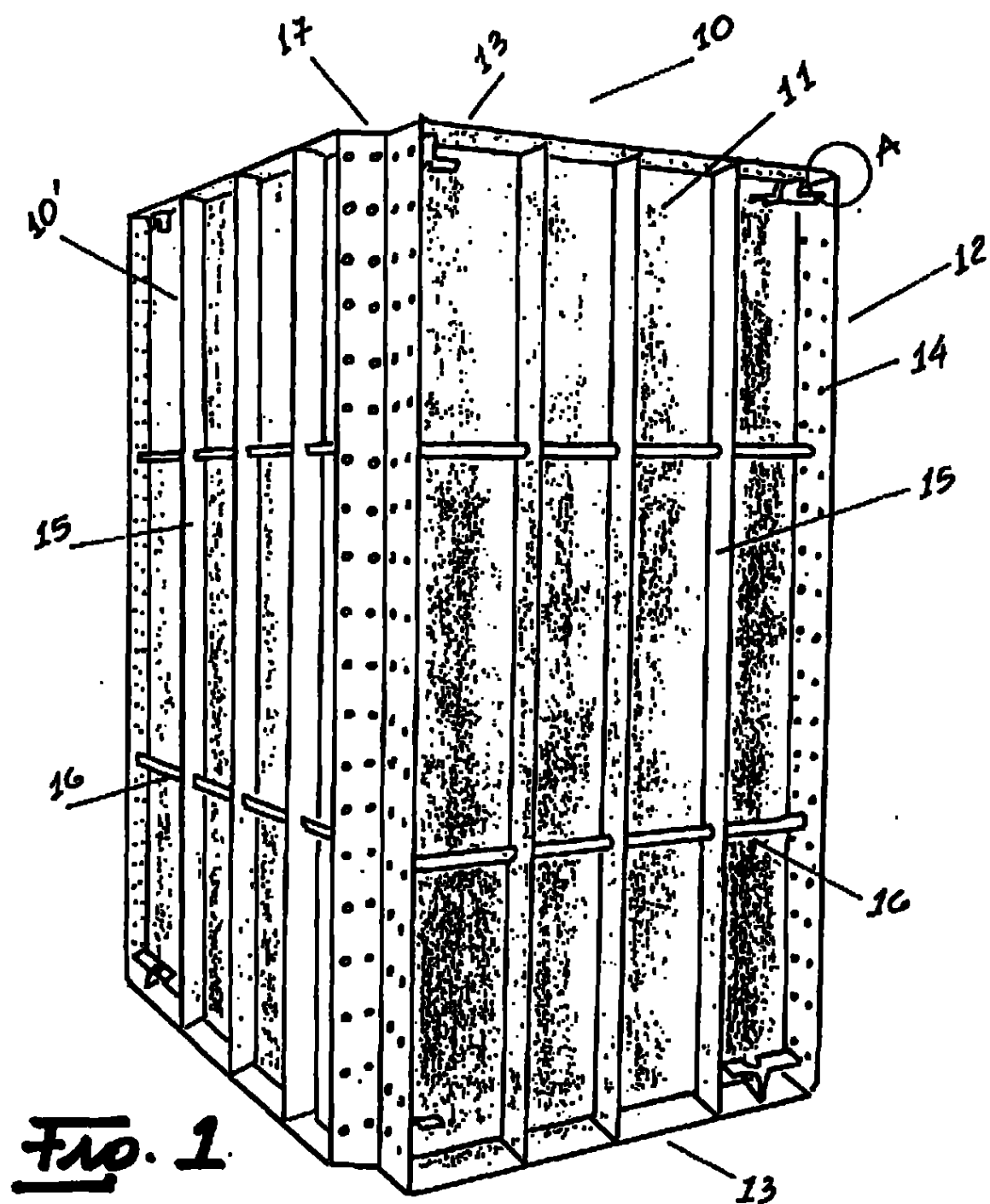
Fácil transporte a la obra dada su configuración a manera de cajas.

Diseño bajo norma de sismo resistencia (NSR - 98).

Evita desperdicios de materiales y escombros

Facilita control de herramientas y materiales en obra.

Permite su reutilización por su característica metálica.



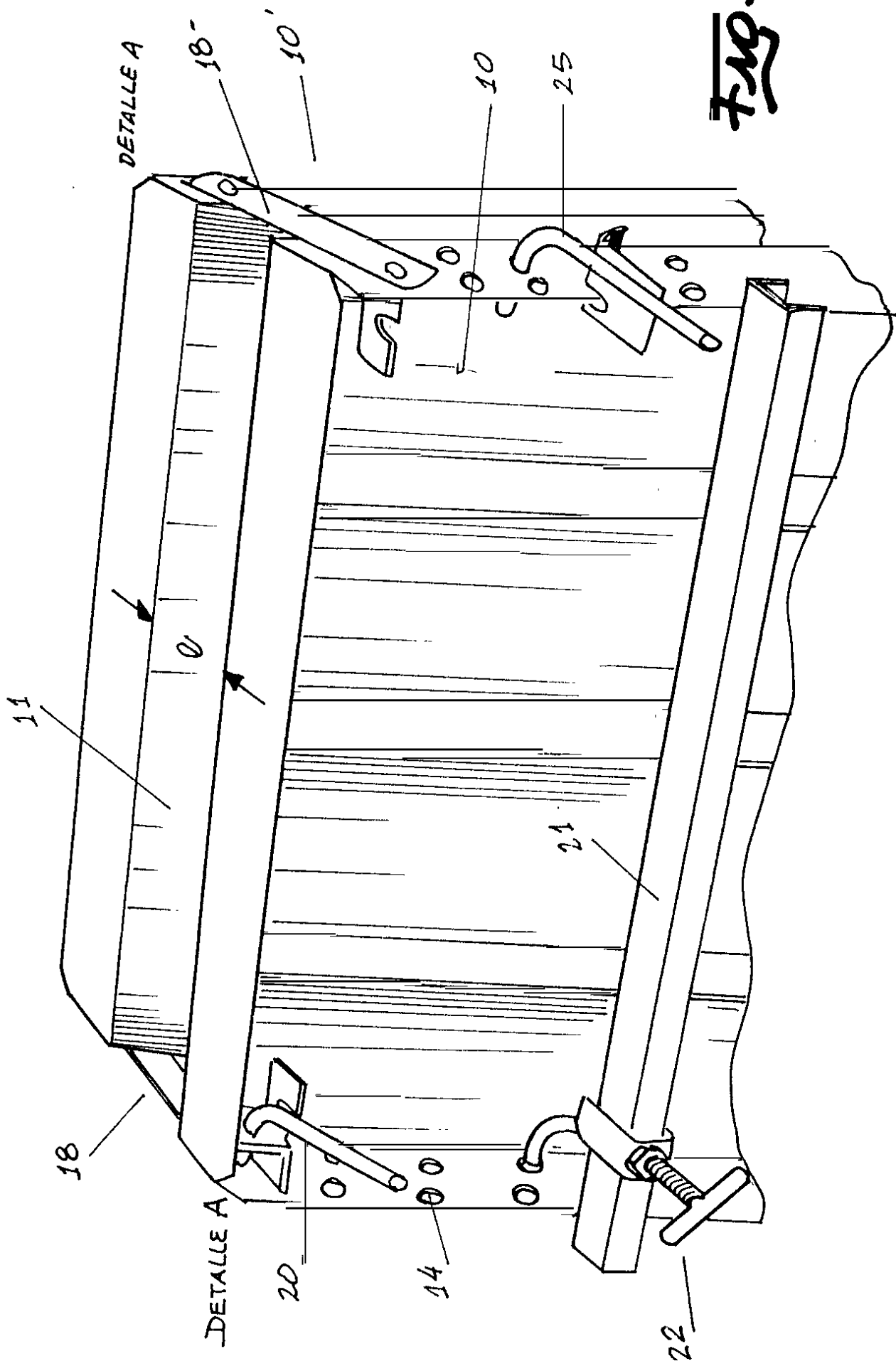


Fig. 5

Economía de costos en obra.

Uso versátil en uso de vivienda u obras civiles.

Lavables luego del vaciado y retirado del muro, y

Almacenables con economía de espacio.

DESCRIPCIÓN TÉCNICA Y FIGURAS:

El encofrado formaleta de nuestro invento se ilustra según las siguientes figuras:

La figura 1 presenta un módulo metálico base para el encofrado del invento.

La figura 2 es un accesorio angular metálico en L que permite el giro externo entre módulos adyacentes.

La figura 3 es un accesorio tipo rinconera a manera de caja que permite el giro interno entre módulos adyacentes.

La figura 4 (a - c) presenta una disposición de accesorios metálicos utilizados en el armado de los módulos o encofrados en obra, a saber: chapetas, prensas mordaza, pines pasadores, distanciadores corbata y alineadores, y

La figura 5 presenta una disposición ejemplificada de módulos de encofrado de adyacencia paralela con algunos accesorios de ensamble.

Según la figura 1 el encofrado o formaleta metálica modular del invento se caracteriza por una estructura 10, compuesta de una lámina de acero 11, rectangular y en dimensiones según las necesidades, bordeada en su longitud por unos paraleles metálicos 12 longitudinales, y transversalmente a los mismos unos paraleles de cierre 13 en su anchura cuyos bordes extremos de empalme recto llevan unos recortes angulares (ver detalle A en figura 5).

Cada paral a lo largo y ancho bordeando la lámina 11 lleva en su longitud unas perforaciones 14 de espaciado equidistante. La superficie plana de la lámina 10 va reforzada por unos elementos metálicos 15 de perfil en V invertida en tanto su anchura lleva unos refuerzos o tirantes 16 perpendiculares a los anteriores. El módulo o encofrado hace empalme con otro similar a través de un perfil angular