

[54] **SHIPPING CONTAINER**

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[22] Filed: **Feb. 24, 1970**

[21] Appl. No.: **13,435**

[52] U.S. Cl. **206/1 R, 206/62, 206/65 R, 206/46 FC**

[51] Int. Cl. **B43k 31/00**

[58] Field of Search **108/55, 51; 217/52, 66; 229/DIG. 1; 190/19, 35; 248/345.1; 206/72, 62 R, 60 A, 60 R, 65 B, 65 R, 1 R**

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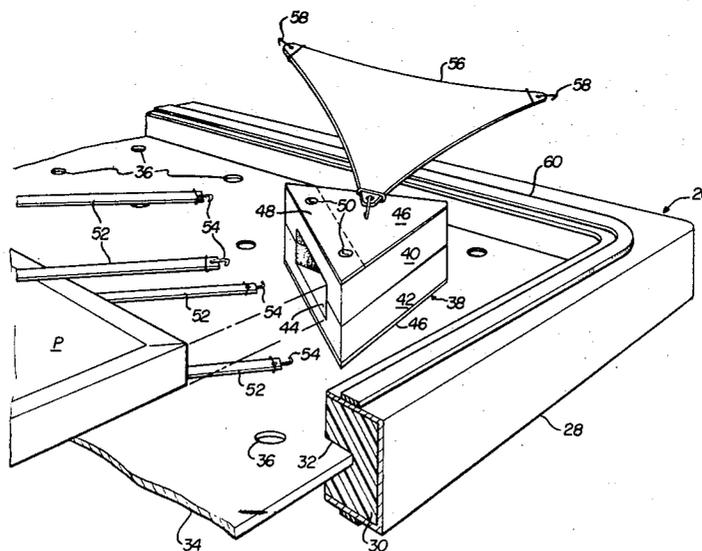
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[57] **ABSTRACT**

A protective shipping container having a substantially rigid energy absorbing top cover, at least one intermediate section which includes a rigid frame containing a shock absorbing body member, and having means for receiving the edges of a perforated mounting plate, a perforated mounting plate having its edges confined within the body member, a plurality of corner suspension and shock mounts situated on at least one of the surfaces of the plate and fixed in place, each mount having a recess therein adapted for receiving a corner of a picture frame or other art object, and a substantially rigid energy absorbing bottom cover. Means are provided for preventing moisture from entering the container when the top cover, intermediate section and bottom cover are fastened together, and means are also provided for fastening the top cover, intermediate section, and bottom cover together.

2 Claims, 4 Drawing Figures



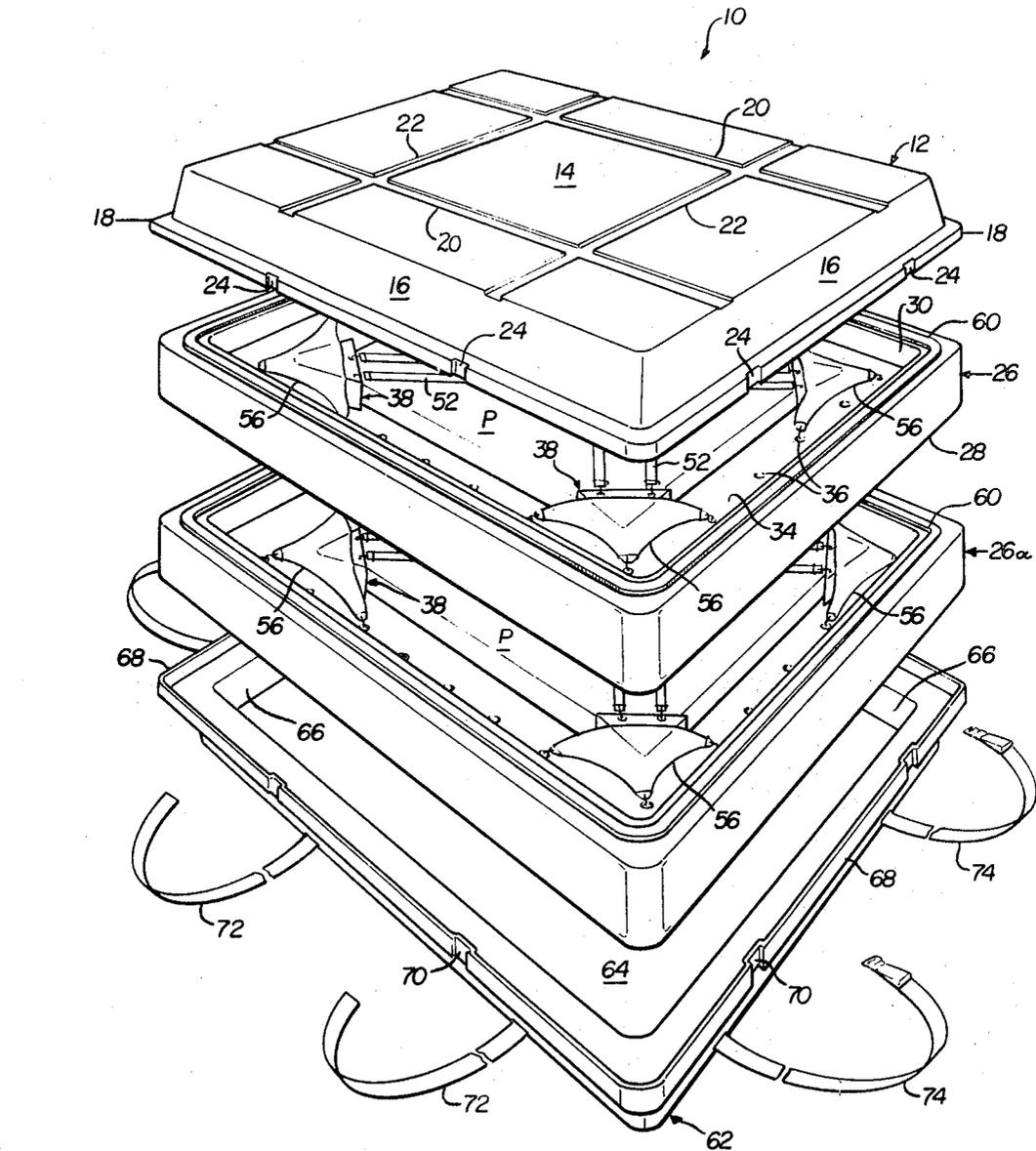


FIG. 1

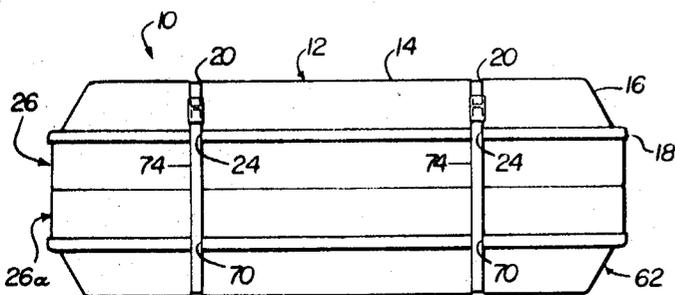


FIG. 3

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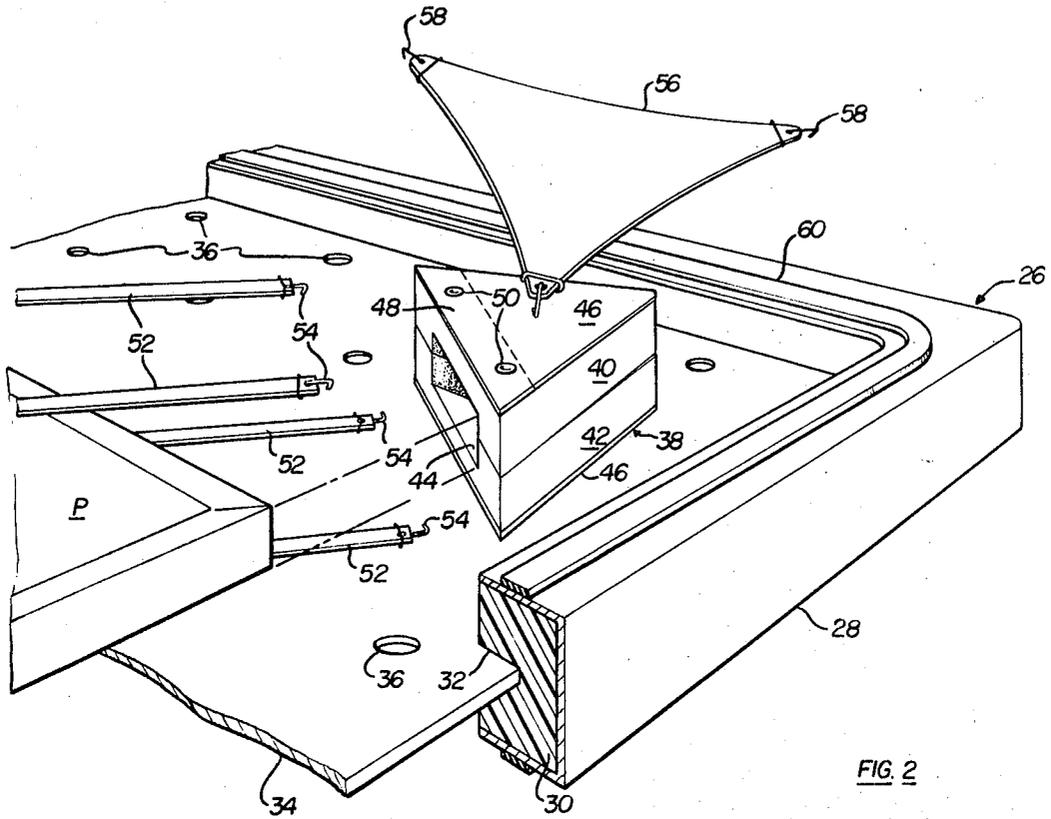


FIG. 2

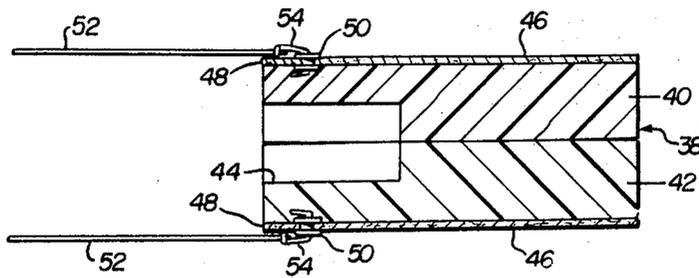


FIG. 4

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SHIPPING CONTAINER

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a protective shipping container for valuable objects such as oil paintings and the like. There are many travelling art shows which visit various museums throughout the world. In general, these shows contain anywhere from 50 to 100 paintings or similar objects which must be unpacked and repacked at each stop. The paintings must be packed in such a manner as to avoid damage from physical abuse as well as from changes in the atmosphere and the like.

2. The Prior Art

In the past oil paintings and the like have been packed in wooden crates. Each crate is lined with carpet and is open at one end. A painting is slid into the open end of a crate and the crate is then fastened with a cover. Each crate, in general, contains only one painting.

The paintings are more often than not crated by general laborers, or in some circumstances, carpenters. These people require close supervision in order that damage to the paintings be avoided. The crating and uncrating of the paintings is a time consuming and expensive proposition, and the physical bulk of the crates adds to the shipping cost since in many instances the crates themselves are much larger and heavier than the paintings. In addition, the paintings packed in crates are not successfully insulated from changes in the atmosphere which occur, for example, during transit across oceans by means of ships or through the air.

A new shipping container has now been invented which enables paintings of varying size to be packed in the container without varying the dimensions of the container and it also insulates the paintings from changes in atmospheric pressure, humidity and the like. In addition, the container may be enlarged by adding various sections, each of which contains at least one painting, and the whole container may therefore contain a plurality of paintings, all of which are protected from the atmosphere and from damage during shipment.

It is therefore an object of this invention to provide a protective shipping container for art objects such as oil paintings and the like which is lighter, more easily maneuverable, and more protective than the wooden crate containers of the prior art.

It is another object of this invention to provide a protective shipping container which can be expanded to include a plurality of paintings without changing the basic dimensions of the container parts.

It is a still further object of this invention to provide a lightweight protective shipping container which insulates the contents from changes in atmosphere.

These and other objects of the invention will become apparent from the description to follow and the drawings, in which:

FIG. 1 is an exploded perspective view of the container of the invention;

FIG. 2 is an enlarged view with parts broken away of the container of the invention;

FIG. 3 is a side elevational view of the container of the invention; and

FIG. 4 is a cross-sectional view of the corner suspension and shock mount forming a part of the container invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The shipping container of this invention is shown in perspective in FIG. 1. The shipping container 10 comprises a top cover 12, preferably Fiberglas reinforced plastic, having a substantially flat, rectangular, top surface 14, outwardly slanted side walls 16 and a peripheral flange 18 extending horizontally, then downwardly from the side walls 16. The cover 12 is substantially in the shape of an inverted cookie pan, being hollowed out on the underneath side (not shown). A pair of

parallel recesses 20 or grooves extend the length of the top surface 14 and another pair of parallel recesses 22 extend the width of the top surface 14. The flange 18 has a plurality of recesses 24 in the outside edge thereof which are vertically aligned with the recesses 20 and the recesses 22 extending across the length and width, respectively, of the top surface 14.

A rectangular shaped intermediate section 26 is nested within the flange 18 of the top cover 12. The intermediate section 26 comprises a rectangular spacer frame 28, preferably made of Fiberglass reinforced plastic, which is C-shaped in cross section. A urethane foam core 30 is confined within the C-shaped cavity of the spacer frame 28. The urethane core 30 has a slot 32 in the middle of the open face thereof.

A mounting plate 34 having a plurality of uniformly spaced perforations 36 is mounted within the intermediate section 26 and has its edges seated in the slot 32 of the urethane core 30. The mounting plate 34 is preferably made of Masonite board, although any other light-weight structurally strong material could be used. A urethane foam shock mount 38 is positioned at each corner of a picture P which overlies the plate 34. The shock mount 38 is triangular in shape. It is comprised of two foam pieces 40 and 42 which are glued together at their interface. The mount 38 has a recess 44 in it which is adapted to receive a corner of a picture P. The shock mount 38 has a canvas piece 46 bonded to the upper and lower surfaces thereof. Each canvas piece 46 has a loose flap 48 on the leading edge thereof which has a pair of spaced apart grommets 50 in it.

Two pairs of elastic security straps 52, each of which has a hook 54 at each end engaged in a grommet 50 (see FIG. 4) extends between diametrically opposed shock mounts. One pair engages the grommets 50 in the canvas flap 48 on the upper surface of the shock mount 38 and the other engages the grommets in the canvas flap 48 on the lower surface. The security straps 52 act to hold the picture P, which corners are seated in the recesses 44, in place between the shock mounts 38.

After the picture P is in place and the elastic straps 52 are fastened between opposed shock mounts 38, an elastic corner mount retainer 56 which has a generally triangular shape with hooks 58 at the apex of each included angle, is fastened over each shock mount 38, the hooks 58 being engaged with the perforations 36 in the mounting plate 34. Thus, as seen in FIG. 1, a picture P is securely mounted within the intermediate section 26 by means of the shock mounts 38 and the shock mount retainer pieces 56.

While, as shown in FIG. 1, there is only one picture P mounted within each intermediate section 26, it can be readily appreciated that a plurality of pictures can be mounted within each section 26 depending on the size of the section. Additionally, it will also be appreciated that one or more pictures can be mounted on the underneath side of the section 26 as well as on the top side simply by reversing the section and mounting the picture.

A neoprene seal 60 extends around the periphery of the intermediate section 26 on both the top and bottom surfaces thereof. A second intermediate section 26a is shown in FIG. 1, located underneath the first intermediate section 26. The second intermediate section 26a is identical to the first intermediate section 26. Any reasonable number of identical intermediate sections can be used in the container.

A bottom cover 62 encloses the bottom of the intermediate section 26a. If intermediate section 26a was omitted, it would enclose the bottom of intermediate section 26. The bottom cover 62 is substantially identical to the top cover 12 and has a flat bottom surface 64, outwardly slanted side walls 66 and an horizontally outward, then upwardly extending peripheral flange 68 around the side walls 66.

The dimensions of the flange 68 on the bottom cover 62 are such that the intermediate section 26a can be seated therein with the neoprene gasket (not shown) in abutting relationship with the horizontal portion of the flange 68.

The bottom (not shown) of the bottom cover has a pair of parallel recesses extending the length thereof and a pair of parallel recesses extending the width thereof (not shown) which are on the same vertical planes as the recesses 20 and 22 in the top cover, respectively. A plurality of recesses 70 are cut in the flange 68. These recesses are positioned so that they are in the same vertical planes as the recesses 24 in the flange of the top cover 12.

A pair of parallel cinch straps 72 are fixed to the bottom cover 62 along one side thereof and another pair of parallel cinch straps 74 are fixed to the bottom cover 62 along an adjacent side thereof. These straps 72 and 74 are seated within the respective recesses 22 and 20 in the top cover and corresponding recesses in the bottom cover, as well as the recesses 24 and 70 in the flanges 18 and 68, when the container is in a closed condition (see FIG. 3).

When one or more pictures are mounted within the container 10 and the container 10 is closed and the straps 72 and 74 tightened, a light-weight structurally strong container is provided which atmospherically and thermally insulates the picture, and protects it from physical damage.

Since any number of identical intermediate sections can be placed within the top and bottom covers, it can be appreciated that a plurality of pictures of varying sizes can be contained within one of the shipping containers of this invention.

The container of this invention can also be used in transporting art objects such as sculptures and the like. In that event, a large center hole is cut in each mounting plate in each intermediate section and the required number of intermediate sections are fitted over the sculpture or other object which has previously been wrapped in a protective layer of foam or cloth. After the required number of intermediate sections have been placed around the sculpture, straps or other restraining means are stretched between the perforations in the uppermost intermediate section across the top of the sculpture and are also stretched between the perforations in the lowermost intermediate section confining the bottom of the sculpture. Thereafter the top and bottom covers are applied and the container fastened together with the outside straps in the same manner as seen in FIG. 3. A shock resistant, thermal and moisture insulated container for sculpture pieces and the like is thereby provided.

What is claimed is:

1. A protective shipping container comprising (1) a top cover which is rectangular in plan view having a flat top surface, outwardly inclined sides and a peripheral flange extending downwardly from said sides, a pair of opposed parallel recesses extending the width of said top surface and a pair of opposed parallel recesses extending the length of said top surface, recesses in the outer edge of said flange which are in the same vertical plane as the respective opposed parallel recesses, (2) an intermediate section comprising a Fiberglas reinforced plastic spacer frame, which encloses a urethane foam retainer, a perforated Masonite mounting plate having the edges thereof retained by said urethane foam retainer, a plurality of corner suspension and shock mounts, said shock mounts being triangular in plan view and having a recess in an open face thereof adapted for receiving a corner of a picture frame, said shock mounts also having a canvas piece

laminated to the top and bottom faces thereof, said canvas piece having a freely movable leading edge with grommets contained therein, elastic security straps extending between diagonally opposed shock mounts, said security straps having hooks on the ends thereof which engage said grommets in the leading edges of said canvas pieces, elastic corner shock mount retainer sheet rubber members having hooks at the apexes thereof, said retainer members overlying said shock mounts with said hooks engaging orifices in said mounting plate, a rubber gasket mounted on the upper and lower surfaces of said spacer frame, and (3) a bottom cover comprising a flat bottom surface, outwardly inclined side walls and an upwardly inclined flange, said bottom cover having a pair of opposed parallel recesses extending the width of said cover and a pair of opposed parallel recesses extending the length of said cover on the bottom side thereof, and recesses in said flange which are in the same vertical plane as said recesses in said bottom cover, and strap means fastened to said bottom cover for fastening said top cover, said intermediate section and said bottom cover together in a fixed relation to each other, whereby when said top cover, said intermediate section, and bottom cover are fitted into one another and fastened with said strap means, a light-weight structurally strong insulated container is provided.

2. A protective box-like shipping container for paintings and the like comprising:

rigid top, bottom and side walls;
fastening means for selectively closing the container;
a flat rigid mounting plate mounted along its edges to the side walls of the container so as to leave the top and bottom faces of said plate spaced from the interior faces of said top and bottom walls of said container, said plate being provided with a plurality of perforations;

a plurality of corner mounting blocks, each having a recess in one edge to receive a corner of a painting or a similar object to be protectively enclosed within the container, each block having means to removably anchor one end of an elastic strap, whereby the respective corners of a painting may each be inserted into the recess of a mounting block, and the diagonally opposite blocks thereafter interconnected with said elastic straps so as to maintain said blocks on the corners of the painting by the tension of said straps;

said blocks being of sufficient height that the painting, when inserted therein, will be spaced from the surface of said mounting plate and all the interior walls of the container, whereby the painting contacts only said mounting blocks when secured within said container;

anchoring means for anchoring said mounting blocks onto said mounting plate comprising a plurality of elastic membranes having a plurality of hooks along their edges for engagement with selected perforations in said mounting plate, the painting and associated mounting blocks being first centrally positioned on one face of said mounting plate and thereafter said membranes being stretched over said mounting blocks and anchored to said mounting plate to prevent said mounting blocks from shifting in any direction relative to said mounting plate.

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