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FRAMING AND CONTAINERS INCLUDING SAME

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Fig. 1.

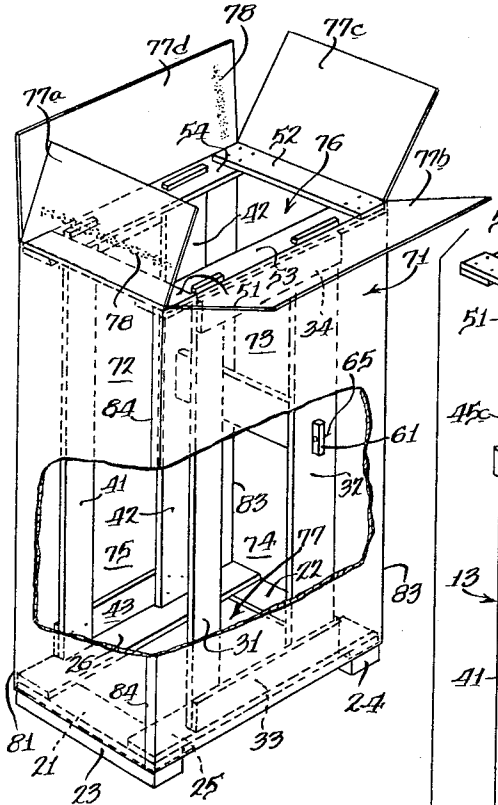
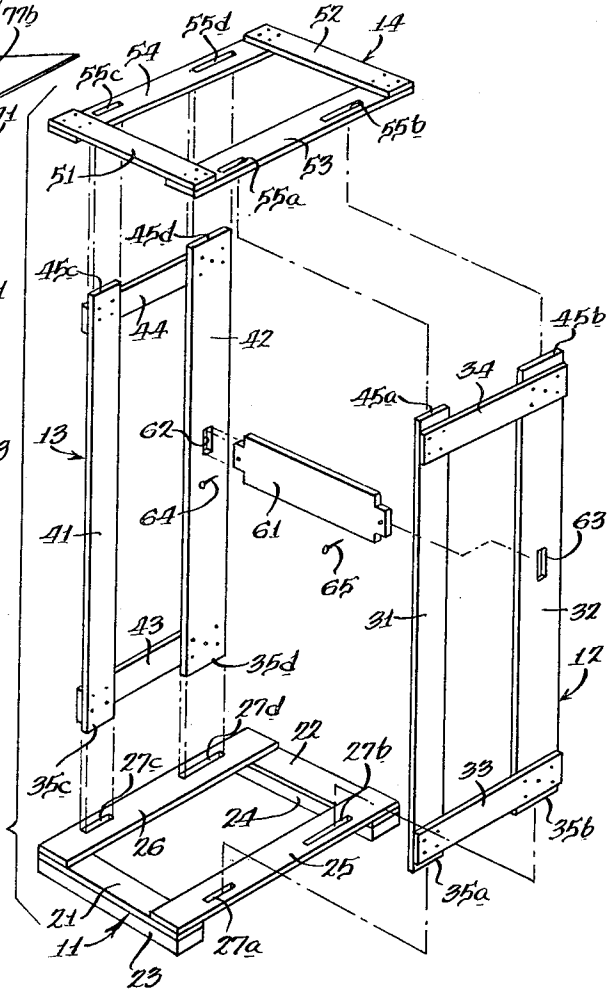


Fig. 2.



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FRAMING AND CONTAINERS INCLUDING SAME

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This invention relates to framing for materials handling containers or cases and especially shipping and storage containers. The invention further relates to pallets and other containers using such framing.

Corrugated cardboard cartons have long been used in the packaging industry. In view of their inexpensive construction and in view of more recent design developments enabling construction of more rigid packages from corrugated cardboard, the use of corrugated cardboard has been extended to a wide variety of packaging applications, including packaging of outboard motors, radios, television sets, and other home applicances. For example, about 140,000 40 H.P. outboard motors were shipped in corrugated cardboard cartons by one manufacturer during a recent twelve month period. However, the design of cardboard packaging to attain sufficient rigidity for use in some applications without damage to the product has been found to require sufficient production expenditures to warrant use of other and less expensive construction. Further, it is also desirable to stack products, e.g. in warehouses, for conservation of storage space, and although corrugated cardboard packaging designs have been often adaptable and acceptable for such use, where it is desired to ship and/or store commodities of greater weight or in higher stacks, it is apparent that an economical corrugated carboard construction may not be sufficient. Additionally, thec orrugated cardboard packaging designs often do not lend themselves to inclusion of based pallet members within the container construction.

A general object of this invention is to provide a new and useful framing which may be used in a container and to further provide an economical shipping container including the framing and having sufficient rigidity for stacking without damage to the container contents.

It is also an object of this invention to provide framing and containers having simplified construction so that the framing or the containers may be readily assembled or disassembled.

In one aspect of this invention, a more particular object is to provide a combination of framing members including a top member and a plurality of side members which may be assembled in locking engagement with the top member and in locking engagement with a base member to form a container frame upstanding from the base member. A further object is to provide a combination of framing members in accordance with the foregoing object as a framework in which a product may be shipped or stored, which combination includes a base member.

In another aspect of this invention, it is an object to provide a container or case including a combination of frame members in accordance with the foregoing objects and having an enclosing sleeve disposed about the combination of frame members for enclosing an object within the container. It is another object to provide such a container having the ends of the sleeves either open or enclosed by suitable flap members.

A still further object of this invention is to provide frame members or containers in accordance with the foregoing objects in either their assembled or disassembled forms.

A motor particular object is to provide economical framing or containers for use in packaging outboard motors.

Additional objects, as well as other aspects and features of this invention, will be apparent to those in the art from the following descriptions and from the drawing in which:

FIGURE 1 is a view of an embodiment of the container including framing in accordance with this invention; and

FIGURE 2 is an exploded view of the embodiment of framing in the container in FIGURE 1.

While this invention is susceptible of embodiment in many different forms, there is shown in the drawing and will herein be described in detail, an embodiment of the invention with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the embodiment illustrated.

As shown in the drawing with reference to FIGURES 1 and 2, in an embodiment of this inventon there is provided a case or container, including a combination of framing members. The framing members include the bottom or base member **11**, which may be, for example, a pallet or other platform. Upstanding from base member **11** are opposing side members **12** and **13** which constitute a front side and a back side respectively of the container framing. A top member **14** is provided across the top of the framing joined with and extending between the two opposing side members. The framing is enclosed by an enclosing member to form the container.

Base member **11** includes a pair of substantially parallel spaced elongate base members **21** and **22** which are secured to elongate base support or leg members **23** and **24** respectively. The base support or leg members are also substantially parallel and are spaced from each other. The purpose of the leg members is to raise the base member sufficiently above the ground to permit convenient lifting of the base member, and therefore the rest of the container, by providing a space for insertion of lifting means, e.g. cables, tines of fork-lift trucks, or the like, beneath the container. Substantially parallel spaced base cross members **25** and **26** are secured to elongated frame members **21** and **22** holding the elongated frame members in spaced substantially parallel relation to form a rectangular base having peripheral framing. Base cross members **25** and **26** include slots **27***a*, **27***b*, **27***c* and **27***d*, two of which slots are included in each of the base cross members as illustrated.

Side members **12** and **13** are upstanding from base member **11**. Each of the side members includes a pair of vertical frame members, indicated by reference numerals **31**, **32**, **41** and **42**. The vertical frame members for each side member are secured in spaced substantially parallel relation to each other by a lower support member, shown at **33** and **43**, and an upper support member, shown at **34** and **44**, one lower and one upper support member being secured to each pair of vertical frame members. The lower and upper support members are cross framing members as cross bars. Projections of vertical frame members **31**, **32**, **41** and **42**, are provided

beyond the upper and lower support members. The projections are indicated by reference numerals 35*a* through 35*d* and 45*a* through 45*d*. Side members 12 and 13 are locked against lateral movement in all directions on base member 11 by fit of projections 35*a* through 35*d* into base member slots 27*a* through 27*d* respectively. Thus, slots 27*a* through 27*d* serve as receptacles for the downward projections from the side members 12 and 13.

Top member 14 is constructed of a pair of elongated top frame members 51 and 52 which are secured in substantially parallel spaced relation to each other by means of top cross members 53 and 54, to form a generally rectangular top member 14. Top cross members 53 and 54 are provided with receptacles or slots 55*a* through 55*d* adapted to receive projections 45*a* through 45*d* respectively, which projections are the upward or upstanding projections of side members 12 and 13.

Thus, in the illustrated embodiment, the top member, the opposing side members and the base member are all members constructed of rigid peripheral framing of generally rectangular disposition.

Included within the framing members for the purpose of supporting or suspending items to be contained within the frame or container, there may be provided one or more mounting members extending between the various framing members. For example, a mounting bar 61 is illustrated secured to opposing vertical frame members of side members 12 and 13 adjacent a third side of the framing. Mounting bar 61 may be removeably secured to the vertical frame members by releasable fastening or securing means such as within slots 62 and 63 receiving ends of the mounting bar and by removeable nails 64 and 65; other securing means will be apparent to those in the art. Mounting bar 61 is positioned and adapted to receive the mounting clamps of an outboard motor. It is apparent from the construction of the combination of frame members, that the frame can be readily assembled and/or disassembled. Accordingly, it is only necessary to place the downward projections from side members 12 and 13 into their respective slots within base member 11 and thereafter place top member 14 in position with the top member slots receiving the upstanding projections of side members 12 and 13 for assembly of the frame. In order to disassemble the frame, the top member is removed from the upstanding projections and the side members are withdrawn from the bottom member slots. In disassembled form, the individual frame members can be stored or shipped much more conveniently and in less space than would be required for the assembled framing.

In view of the similar outer configurations of base member 11 and top member 14 and in view of the similarity of configuration of the two side members, it may be advantageous to store or ship the top and bottom members in a stack separate from the stack of side members. In one preferred embodiment of the present invention, the side members have a width less than the inner dimension of the framing forming the top and base members so that a plurality of side members can be included within the inner chamber of a stack of registering top and/or base members. For example, where the total width of the side members is less than the longer inner dimension of the top and base member, the side members may be stacked upright within a stack of registering top and/or base members.

It is apparent from the above discussions that the base member can be omitted from the combination of frame members and that the combination can include the top and two side members, providing a combination of frame members adapted for association with a base member which may be provided separately, e.g. by a shipper or warehouser. Other means besides that shown can be used to lock the top to the sides and the sides in upstanding position against lateral movement on the base, although the projection and slot arrangement is preferred for its simplicity and economic construction.

The top, sides and base frame and cross members are all constructed of rigid materials such as wood, e.g. unfinished lumber, and provide rigid framing which may be used in itself or in combination with an enclosing member to form a container.

Referring again to the figures, an enclosing member is provided for enclosing the above described frame. The enclosing member includes a sleeve 71 which is constructed of sides 72, 73, 74 and 75 which are hingedly associated or foldably connected in a form having a generally rectangular cross section. The foldable connection between the sides can be achieved in various ways well known in the art, e.g. score lines, taped seams, stapled overlaps or other secured overlaps, and the like. In the embodiment shown, the four sides of sleeve 71 are associated by three score lines 81, 82 and 83 and one taped seal 84, the sleeve being punched from one sheet of protective light weight material such as corrugated cardboard. Although the sleeve material is not required to support weight and need not be of significant structural strength, it is preferred that the sleeve, either by its design or by the material of its construction, be of sufficient strength to inhibit pivoting of the frame members at the association of the side member projections with the top and base member slots toward a rhombic configuration due to any play which may develop between the projections and slots. For this purpose, a snug fitting sleeve may be desirable. Mounting members, such as mounting bar 61, may also inhibit such shifting of the frame members.

Sleeve 71 is provided with top and bottom openings 76 and 77 which register with or extend beyond the top and bottom of the frame. As indicated above, it is preferred that the inner dimension of end openings 76 and 77 provide a substantially snug fit around the outer periphery of top member 14 and base member 11 respectively. Thus, the opposing ends of the sleeve are generally aligned with the top and bottom of the frame. A plurality of flaps, e.g. as indicated at 77*a* through 77*d* are provided on the periphery of each of openings 76 and 77 and are adapted to be folded over the top and bottom of the frame to close openings 76 and 77 and to enclose the frame within the enclosing member, thereby providing a hexahedral case including the frame. Means, such as adhesive, indicated at 78 may be provided to secure the flaps in closed position.

In an alternative embodiment, the flaps adapted to close openings 76 and 77 may be omitted and a container is provided which is open on the bottom and top except for the amount of coverage provided by the base and top framing members. Such cases also find advantageous application in the art.

It is seen that the enclosing member can be readily positioned over the framing as a sleeve and can also be readily removed therefrom. Further, the enclosing member can be flat for storage or shipment thereof, e.g. with the frame members.

The enclosed case or container or the top-bottom-side framing alone, in assembled form, is capable of containing items for shipment or storage and the container or framing possesses sufficient rigidity to permit stacking of containers or framing on top of each other. For this purpose, it is preferred that the bottom surface of the base member include a portion which is in registry with a portion of the top surface of the top member providing adequate bearing surfaces between stacked containers, or assembled frames.

The frames and containers of this invention, an embodiment of which has been above described, are of simplified construction and are readily assemblable and disassemblable. In disassembled form the containers and frame members are very light and compact, resulting in economical shipping and storage of empty containers or

idle frames. The light weight also results in lower shipping weight of a packaged article. More important, however, the materials of construction used in the present invention are inexpensive, e.g. including lower cost wood such as rough, imperfect lumber and reasonable amounts of corrugated cardboard. Containers for 40 H.P. outboard motors, for example, can be produced at a substantial saving compared with the conventional all corrugated cardboard containers. This results in a marked saving in total packaging expense.

However, even with the economical construction and light weight of the frames and containers of this invention, it is possible for packaged items to be readily stacked on top of each other, e.g. by palleting, for more economical use of storage space, or shipping space, resulting from a remarkable supporting power of the frames and rigidity of the cases or containers including the frames. The present frames and containers may also be useful in packaging of radios, television sets, and other home appliances, such as stoves, refrigerators, lawn mowers, and the like, although additional mounting members may sometimes be desirable.

We claim:

1. A combination of frame members adapted to provide a frame upstanding from a base member, said combination comprising a plurality of side frame members each consisting essentially of a complete rigid peripheral frame including a bottom support member on each of said side frame members adapted to support said side members on said base member and a top support member on each of said side members, means for locking said side members from lateral movement upon said base member, a plurality of upstanding projections integral with each of said side members, and a top frame member consistnig essentially of a rigid peripheral frame including a plurality of slot means adapted to receive and laterally surround said upstanding projections and lock said projections against lateral movement, said top frame member being adapted to rest upon said top support members wtih said upstanding projections in said slot means.

2. A frame for an enclosing container, which frame comprises a base frame member consisting essentially of a peripheral frame having a plurality of slots, a plurality of side frame members upstanding from said base member, each of said side frame members consisting essentially of a peripheral frame including a bottom support member adapted to support said side members on said base and a top support member on each of said side members, a plurality of downward projections from said side members integral with said side members and adapted to be received by said base member slots and locking said side members from lateral movement on said base member, a plurality of upstanding projections integral with each of said side members, and a top frame member consisting essentially of a peripheral frame including a plurality of slots adapted to receive and laterally surround said upstanding projections and lock said projections against lateral movement, said top frame member being adapted to rest upon said top support members with said upstanding projections in said top member slots.

3. The frame of claim 2 including mounting means secured to and extending between opposing side members and spaced inward from the outer limits of the frame, said mounting means being adapted to suspend and support contents within said frame.

4. A container having a frame comprising a rigid base frame member, a plurality of rigid side frame members upstanding from said base member, each of said side members including a lower support member resting upon said base member and a plurality of downward projections extending beyond said lower support member, said base member including slots adapted to receive said downward projections to lock said side members in upstanding position against lateral movement on said base member, an upper support member and a plurality of upward projections extending beyond said upper support member at the upper end of each side member, a rigid top frame member resting upon said upper support members and including a plurality of slots receiving and locking said upward projections against lateral movement, and a rigid sleeve member enclosing the sides of said frame.

5. The container of claim 4 wherein said rigid sleeve member includes a plurality of flaps at opposing open ends of the sleeve, which flaps are adapted to fold over the top and bottom of said frame to completely enclose said frame.

6. The container of claim 4 including a mounting bar within the frame secured to and extending between opposing sides of the frame and adapted to receive an outboard motor mounting and support the motor within the case.

7. The container of claim 4 wherein said base frame member is a pallet comprising a platform and a plurality of cross members secured to the lower surface of said platform for supporting said platform in raised position from a surface, said cross members having portions aligned with and adapted to be supported upon the upper surface of said top frame member.

8. A combination of frame and enclosure members adapted to provide a frame upstanding from a pallet base member with the enclosure enclosing the frame and base member, said combination comprising a plurality of side frame members each consisting of a complete rigid peripheral frame including a bottom support member on each of said side frame members adapted to support said side members on said base member and a top support member on each of said side members, means for locking said side members from lateral movement on said base member, a plurality of upstanding projections on each of said side members, a top frame member each consisting of a complete rigid peripheral frame including a plurality of receptacle means adapted to receive said upstanding projections and adapted to lock said projections against lateral movement, said top frame member being adapted to rest upon said top support members with said upstanding projections in said receptacle means, a rigid sleeve member of generally rectangular cross section and having two opposing open ends, said sleeve member being adapted to fit securely over said frame with said opposing open ends generally aligned with the top and bottom of said frame, and a plurality of rigid flaps adapted to be folded over the top and bottom of said frame to close said openings and completely enclose the packing space within said frame.

9. A hexahedral case or container for enclosing and supporting an outboard motor, comprising a frame including a bottom, a top and a plurality of sides, said bottom comprising a rigid wood base frame member including a pallet, said sides each comprising a rigid wood side frame member upstanding from said base member, each of said side members including a lower support member resting upon said base member, and a plurailty of downward projections extending beyond said lower support member at the lower end of each side member and said base member including slots receiving said downward projections and locking said side members in upstanding opposing position and against lateral movement on said base member, an upper support member and a plurality of upward projections extending beyond said upper support member at the upper end of each side member, said top comprising a rigid wood top frame member including a plurality of slots receiving said upward projections and a lower surface resting upon said upper support members, an upper surface on said top frame member adapted to support the lower surface of a second said base member, a removably secured mounting bar capable of supporting an outboard

motor within said case, said mounting bar being secured to two opposing side members and being disposed adjacent a third side of said case, a rigid corrugated cardboard sleeve member having four foldably connected sides defining a rectangular tube and two opposing open ends, said sleeve member fitting securely over and enclosing said frame with said opposing open ends generally aligned with the top and bottom of said frame, a plurality of flaps on the periphery of said openings folded over the top and bottom of said frame to closing said openings, and means for securing said flaps in closed position, said sleeve and flaps in closed position defining the six surfaces of said hexahedral case, said case being of sufficient rigidity to support a second said case having its bottom surface disposed upon the top surface of the first mentioned case.

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