Feb. 26, 1963 F. A. BELLINGHER 3,079,024

SECTIONAL BOX CONSTRUCTION

Filed March 14, 1961 2 Sheets-Sheet 1

Fig. 1.

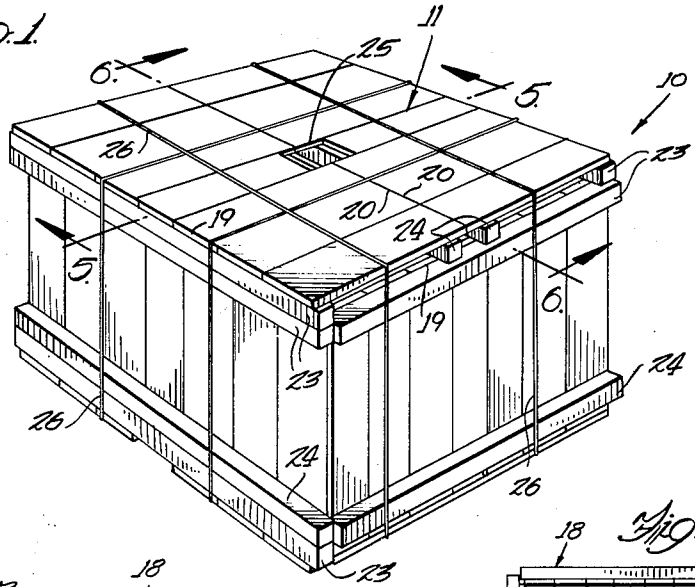


Fig. 2.

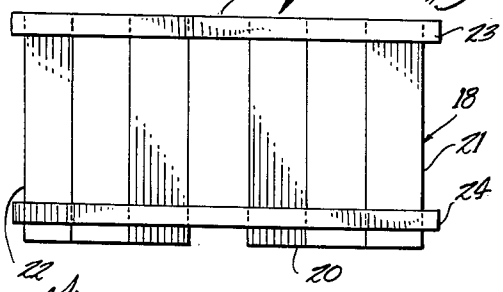


Fig. 3.

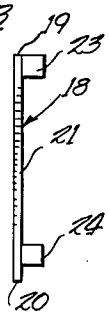


Fig. 4.

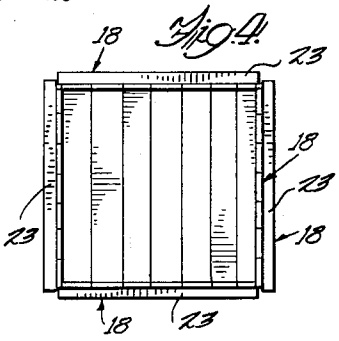


Fig. 5.

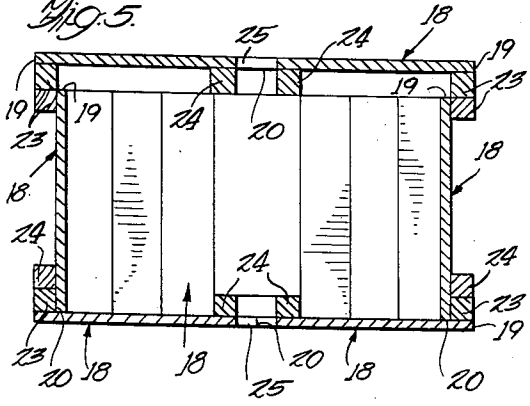
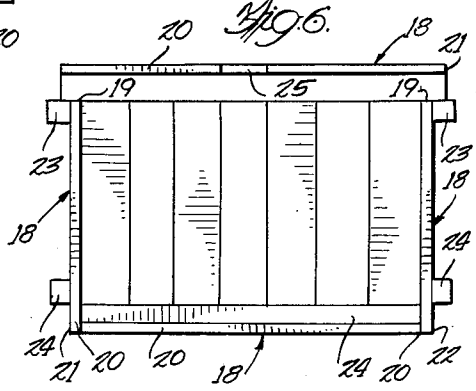


Fig. 6.



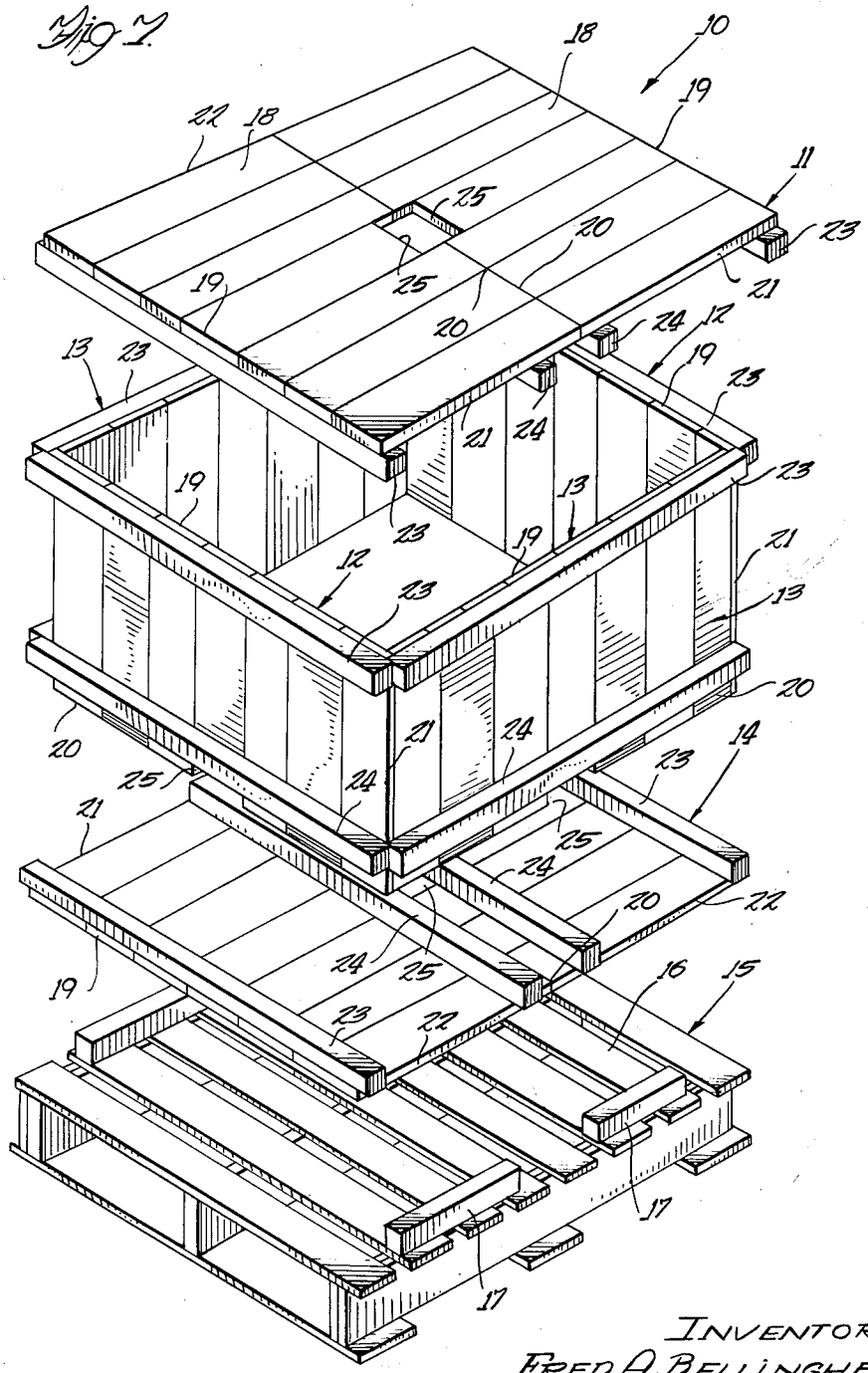
INVENTOR
FRED A. BELLINGHER
Paul O. Pippel
ATTORNEY

Feb. 26, 1963 F. A. BELLINGHER 3,079,024

SECTIONAL BOX CONSTRUCTION

Filed March 14, 1961 2 Sheets-Sheet 2

Fig. 1.



INVENTOR
FRED A. BELLINGHER
Paul O. Pippel
ATTORNEY

United States Patent Office 3,079,024 Patented Feb. 26, 1963

3,079,024

SECTIONAL BOX CONSTRUCTION

Fred A. Bellingher, Alsip, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey

Filed Mar. 14, 1961, Ser. No. 95,686
8 Claims. (Cl. 217—12)

This invention relates to an improvement in a sectional box construction and more particularly to a sectional-type box particularly adapted for use with pallets.

It is a prime object of this invention to provide an improved sectional box construction particularly adapted for containing palletized loads, the said box being easily assembled and disassembled.

Another object of this invention is to provide an improved type of wooden box arrangement comprising a plurality of panels adapted to be interlocked in assembly to effectuate a strong and rigid box construction which is easily assembled and disassembled.

A still further object of the invention is to provide an improved wooden-type box construction having suitable strengthening cleats or stringers provided on each section or panel, the said cleats serving to strengthen the box assembly and also providing interlock provisions whereby the box during assembly is exceptionally strong and yet may be easily disassembled after use for reshipment.

A still further object of the invention is to provide a multi-purpose box construction having sides, a bottom, and a cover, the said construction including identical panels whereby the said panels may be readily interchanged to provide said sides, bottom, and top cover, and in assembly providing an exceptionally strong interconnected construction which is easily assembled and disassembled.

Still another object of the invention is to provide a wooden box construction which is constructed entirely of identical panels so that the components are all interchangeable and whereby panels of other boxes may be interchanged for either top cover, sides, or bottom of other boxes of the same type.

These and further objects will become readily apparent from a reading of the description when examined in connection with the accompanying sheets of drawings.

In the drawings:

FIG. 1 is a perspective view of an improved sectionalized box embodying the invention;

FIG. 2 is a side elevational view of a type of panel used in the construction of the box shown in FIG. 1;

FIG. 3 is an end elevational view of a box panel shown in FIG. 2;

FIG. 4 is a plan view showing side panels of a box in assembled position with the top removed and showing a bottom for the said box;

FIG. 5 is a cross-sectional view through a box taken substantially along the line 5—5 of FIG. 1;

FIG. 6 is a sectional view taken along the line 6—6 of FIG. 1; and

FIG. 7 is an enlarged exploded perspective view of a sectionalized box including a pallet on which the said box may be transported for shipment.

Referring now particularly to FIGS. 1 and 7, a box is generally designated by the reference character 10. The box 10 comprises a top cover generally designated at 11 including first opposed side walls 12 and second opposed side walls 13. A bottom is also generally designated at 14. The box 10 as shown in FIG. 7 is adapted to be supported upon a conventional two-way entry pallet 15 having a supporting platform 16 which may be provided with suitable spacer cleats 17. The spacer cleats 17 may be fastened to the platform 16, if desired,

the purpose of said cleats being to retain the bottom 14 in spaced relation with respect to the platform 16.

The box 10 is a wooden-type box, though, of course, the present invention is not limited to the use of this type of material since the box can be made of any suitable material such as plastic, metal, or other materials.

Referring now particularly to FIGS. 2, 3 and 7, a panel is designated at 18, the said panel being constructed of wooden boards providing on said panel opposite side walls. Each panel 18 comprises a first edge 19 and an opposed edge 20. Each panel 18 also comprises a third edge 21 and an opposed edge 22. A first stringer 23, or as referred to in the trade, a cleat, is connected to each panel 18 and is coextensive and flushed with the edge 19, the said stringer 23 also having opposite end portions spaced outwardly with respect to the edges 21 and 22. A second stringer or cleat 24 is connected to each panel and is substantially parallel to the cleat 23, the said cleat 24 being spaced inwardly from the second edge 20. The second stringer 24 also projects outwardly with respect to the edges 21 and 22. The cleats 23 and 24 are of rectangular cross section and also may be constructed of wood. Each panel also, as best shown in FIG. 7, includes a recess 25 which opens outwardly on the edge 20. The recess 25 has a width sufficient to straddle the stringers 24 of the bottom 14 as shown in FIG. 7 and the depth of each recess 25 is at least equal to the height of each stringer 24.

The complete assembled condition of the box 10 is shown in FIG. 1 wherein the box is suitably strapped together by means of straps or wires designated at 26. If the box is utilized in connection with the pallet 15, the wires also of course will extend around the pallet to retain all of the components in assembly.

To assemble the box, two panels are positioned, as shown in FIG. 7, to provide the bottom 14. Thus the two panels are placed on the pallet 15 or on the floor so that the edges 20 of each panel are in contiguous relation and the stringers 23 and 24 face upwardly. The sides 12 and 13 are now each formed by individual panels. The panels which form the sides 13 have the recesses 25 straddling the stringers 24 of the bottom 14 to provide interengagement or an interlock for the said sides to retain the bottom 14 in assembly and also to prevent lateral shift of the sides 13 relative to said bottom 14. Also, the stringers 24 of the sides 13 are centrally supported on the stringers 24 of the bottom 14 to provide rigidity. The sides 12 have their stringers 24 seated upon the stringers 23 of the bottom 14 as best shown in FIG. 5, and the edges 20 of the sides 12 are supported on the panels and positioned against lateral displacement by means of the stringers 23 of the bottom 14. The cleats 23 and 24 may be suitably nailed to the boards of the panel in conventional fashion. As best shown in FIG. 7, the projecting ends of the cleats 23 and 24 interengage at the corners to also further reinforce one another so that the rigidity of the structure is increased.

The top cover 11 comprises also two panels with the edges 20 in contiguous relation and the recesses 25 in registry as indicated in FIG. 7. The cleats 23 and 24 of the cover 11 project downwardly with the cleats 23 being supported on the cleats 23 of the side walls 12. Likewise, the projecting end portions of the cleats 24 of the cover 11 are supported on the uper edges of the cleats 23 of the side walls 13.

As indicated in FIG. 1, a suitable wire tie or band 26 is secured about the box and its components of top cover 11, sides 12 and 13, and bottom 14 to secure the box components together.

Thus it is apparent that each of the panels 18 is identical and that the cleats, while serving to strengthen each of the panels 18, also have definite function and relation

to provide interengagement or interlocking of the panels in the box assembly so as to secure a rigid structure which when banded together will provide a rigid packing structure.

The box can be easily and quickly assembled and need merely be banded together in assembly as shown. Likewise, it is clear that by simply releasing the bands 26 the box may be disassembled. Since all of the panels 18 are alike, it is, of course, obvious that they are interchangeable for sides, bottom, or top cover, as desired. Furthermore, since many of these boxes may be shipped together, the parts of one box can easily be interchanged with broken parts of another so that provisions for damage can readily be provided. Also after the shipment has reached its destination, it is a simple procedure to disassemble the box and return the panels in bundled form. Thus, the objects of the invention have been fully achieved, and it must be understood that changes and modifications may be made without departing from the spirit of the invention as disclosed or from the scope thereof as defined in the appended claims.

What is claimed is:

1. A box assembly comprising a plurality of panels forming upright first opposed side walls and second opposed side walls, a bottom, and a top cover, each panel comprising a wall section having opposite sides and first and second opposed parallel edges and second and third opposed parallel edges, a first narrow rectangular stringer connected to one side of each panel flush with said first edge, said first stringer having end portions projecting outwardly with respect to said third and fourth edges, a second narrow and rectangular stringer parallel to said first stringer connected to said same side as said first stringer, said second stringer being spaced inwardly from said second edge, said second stringer having end portions projecting outwardly from said third and fourth edges, each panel having a centrally disposed recess opening outwardly of said second edge, whereby in the assembled condition of said box, said top cover and bottom each comprises a pair of panels having their second edges positioned contiguously and their recesses in registry, with the stringers of the top cover and the stringers of the bottom projecting in a direction toward each other, each side wall comprising an upright panel with the stringers projecting outwardly and with the recesses of said first opposed side walls providing a space receiving said second stringers of said bottom panels, said second stringers of said second side walls being disposed on top of said first stringers of said bottom panels, the first stringers of said cover panels being disposed on top of said first stringers of said second side walls and said second stringers of said cover panels having their projecting end portions being supported on the first stringers of said first side walls, said first and second stringers of said side walls having certain of their end portions overlapping in engagement with each other, and means for connecting said top cover, bottom, and side walls in assembly.

2. A box assembly comprising a plurality of panels forming upright first opposed side walls and second opposed side walls, a bottom, and a top cover, each panel comprising a wall section having opposite sides and first and second opposed parallel edges and second and third opposed parallel edges, a first stringer connected to one side of each panel flush with said first edge, said first stringer having end portions projecting outwardly with respect to said third and fourth edges, a second stringer parallel to said first stringer connected to said same side as said first stringer, said second stringer being spaced inwardly from said second edge, said second stringer having end portions projecting outwardly from said third and fourth edges, each panel having a centrally disposed recess opening outwardly of said second edge, whereby in the assembled condition of said box, said top cover and bottom each comprises a pair of panels having their second edges positioned contiguously and their recesses in registry, with the stringers of the top cover and the stringers of the bottom projecting in a direction toward each other, each side wall comprising an upright panel with the stringers projecting outwardly and with the recesses of said first opposed side walls providing a space receiving said second stringers of said bottom panels, said second stringers of said second side walls being disposed on top of said first stringers of said bottom panels, the first stringers of said cover panels being disposed on top of said first stringers of said second side walls and said second stringers of said cover panels having their projecting end portions being supported on the first stringers of said first side walls, said first and second stringers of said side walls having certain of their end portions overlapping in engagement with each other, and means for connecting said top cover, bottom, and side walls in assembly.

3. A box assembly comprising a plurality of panels forming upright first opposed side walls and second opposed side walls, a bottom, and a top cover, each panel comprising a wall section having opposite sides and first and second opposed parallel edges and second and third opposed parallel edges, a first stringer connected to one side of each panel flush with said first edge, a second stringer parallel to said first stringer connected to said same side as said first stringer, said second stringer being spaced inwardly from said second edge, each panel having a centrally disposed recess opening outwardly of said second edge, whereby in the assembled condition of said box, said top cover and bottom each comprises a pair of panels having their second edges positioned contiguously and their recesses in registry, with the stringers of the top cover and the stringers of the bottom projecting in a direction toward each other, each side wall comprising an upright panel with the stringers projecting outwardly and with the recesses of said first opposed side walls providing a space receiving said second stringers of said bottom panels, said second stringers of said second side walls being disposed on top of said first stringers of said bottom panels, the first stringers of said cover panels being disposed on top of said first stringers of said second side walls and said second stringers of said cover panels having their projecting end portions supported on the first stringers of said first side walls, and means for connecting said top cover, bottom, and side walls in assembly.

4. A box assembly comprising a plurality of panels forming upright first opposed side walls and second opposed side walls and each panel comprising a wall section having opposite sides and first and second opposed parallel edges and second and third opposed parallel edges, a first stringer connected to one side of each panel flush with said first edge, a second stringer parallel to said first stringer connected to said same side as said first stringer, said second stringer being spaced inwardly from said second edge, each panel having a centrally disposed recess opening outwardly of said second edge, whereby in the assembled condition of said box, said top cover comprises a pair of panels having their second edges positioned contiguously and their recesses in registry, with the stringers of the bottom projecting in a direction toward each other, each side wall comprising an upright panel with the stringers projecting outwardly and with the recesses of said first opposed side walls providing a space receiving said second stringers of said bottom panels, said second stringers of said second side walls being disposed on top of said first stringers of said bottom panels, and means for connecting said top cover, bottom, and side walls in assembly.

5. A box assembly comprising a plurality of panels forming first upright opposed side walls and second opposed upright side walls, each panel comprising a wall section having on one side first and second outwardly projecting stringers substantially parallel with respect to each

other, said panels having first and second opposed edge portions and second and third opposed edge portions, said first stringers being connected to said wall sections flush and coextensive with the first edge portions, said second stringers being spaced inwardly from said second edge portions, each wall section having a centrally disposed recess, said recess being disposed outwardly of the second stringer and opening outwardly of said second edge portions, a bottom for said box, said bottom comprising a pair of panels having in assembled condition of said box their second edge portions positioned in contiguous relation with their recesses in registry to form a rectangular opening, the stringers of said panels projecting upwardly, said first side walls having their recesses disposed over said second stringers of said bottom panel, edges of said receses engaging said stringers to restrain said first side wall against relative lateral displacement with respect to said bottom, means for securing said panels in assembly, and a top cover for said box, said cover including a pair of panels.

6. A box assembly comprising a plurality of panels forming first upright opposed side walls and second opposed upright side walls, each panel comprising a wall section having on one side first and second horizontally spaced outwardly projecting stringers, said panels having first and second opposed edge portions, said first stringers being connected to said wall section flush and coextensive with the first edge portions, said second stringers being spaced inwardly from said second edge portions, each wall section having a centrally disposed recess, said recess being disposed outwardly of the second stringer and opening outwardly of said second edge portions, a bottom for said box, said bottom comprising a pair of panels having in assembled condition of said box their second edge portions positioned in contiguous relation with their recesses in registry to form a rectangular opening, the stringers of said panels projecting upwardly, said first side walls having their recesses disposed over said second stringers of said bottom panel, edges of said recesses engaging said stringers to restrain said first side walls against relative lateral displacement with respect to said bottom, means for securing said panels in assembly, and a top cover for said box, said cover including a pair of panels.

7. A box assembly comprising a plurality of panels forming first upright opposed side walls and second opposed upright side walls, each panel comprising a wall section having on one side first and second horizontally spaced stringers, said panels having first and second opposed edge portions, said first stringers being connected to said wall sections adjacent the first edge portions, said second stringers being spaced inwardly from said second edge portions, each wall section having a centrally disposed recess, said recess being disposed outwardly of the second stringer and opening outwardly of said second edge portions, a bottom for said box, said bottom comprising a pair of panels having in assembled condition of said box their second edge portions positioned in contiguous relation, the stringers of said panels projecting upwardly, said first side walls having their recesses disposed over said second stringers of said bottom panel, edges of said recesses engaging said stringers to restrain said first side walls against relative lateral displacement with respect to said bottom, means for securing said panels in assembly, and a top cover for said box, said cover including a pair of panels.

8. A box assembly comprising a plurality of panels forming first upright opposed side walls and second opposed upright side walls, each panel comprising a wall section having on one side first and second horizontally spaced stringers, said panels having first and second opposed edge portions, said first stringers being connected to said wall sections adjacent the first edge portions, said second stringers being spaced inwardly from said second edge portions, each wall section having a centrally disposed recess, said recess being disposed outwardly of the second stringer and opening outwardly of said second edge portions, a bottom for said box, said bottom comprising a pair of panels having in assembled condition of said box their second edge portions positioned in contiguous relation, the stringers of said panels projecting upwardly, said first side walls having their recesses disposed over said second stringers of said bottom panel, edges of said recesses engaging said stringers to restrain said first side walls against relative lateral displacement with respect to said bottom, and means for securing said panels in assembly.

References Cited in the file of this patent

UNITED STATES PATENTS

1,432,236	Cummings	Oct. 17, 1922
2,728,478	Haner	Dec. 27, 1955

FOREIGN PATENTS

666,117	Great Britain	Feb. 6, 1952