May 16, 1950 R. H. COLLIER 2,507,693

PORTABLE WIREBOUND BOX

Filed May 26, 1949 2 Sheets-Sheet 1

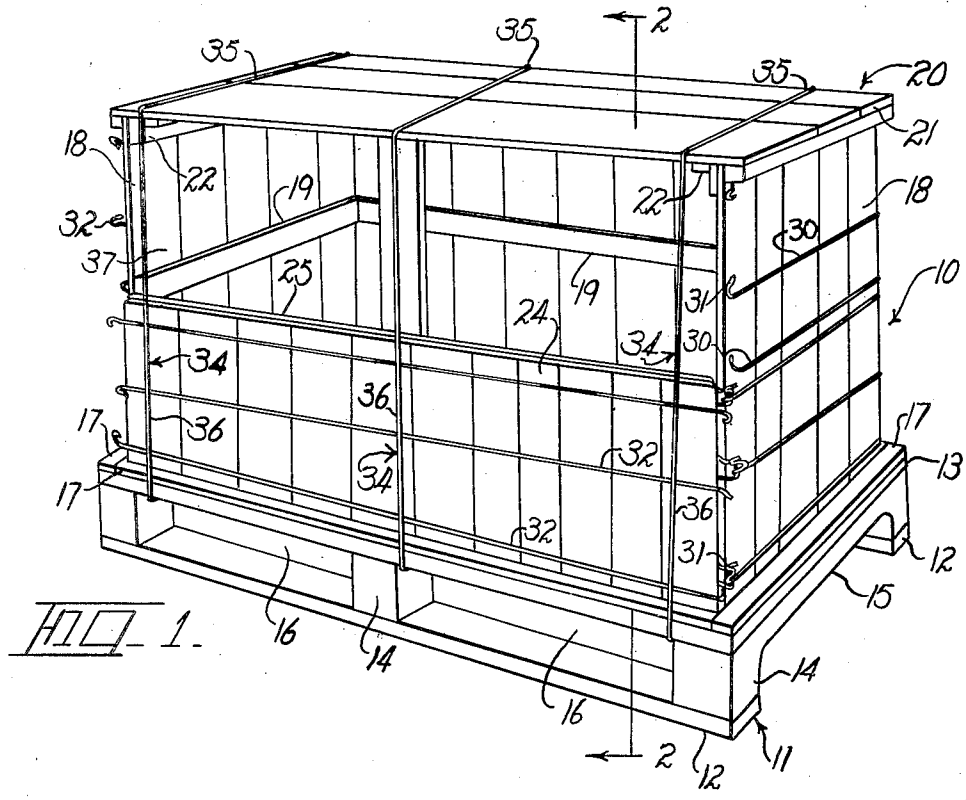

FIG. 1.

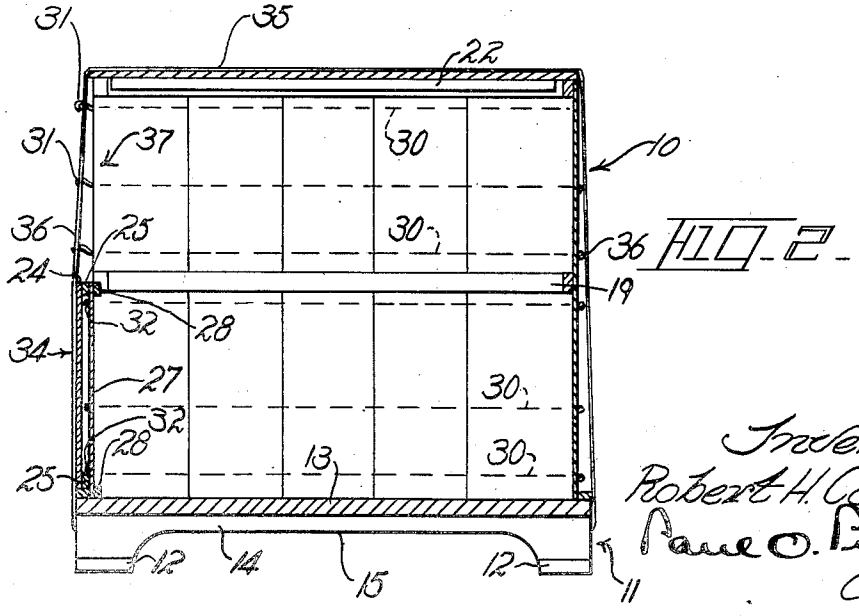

FIG. 2.

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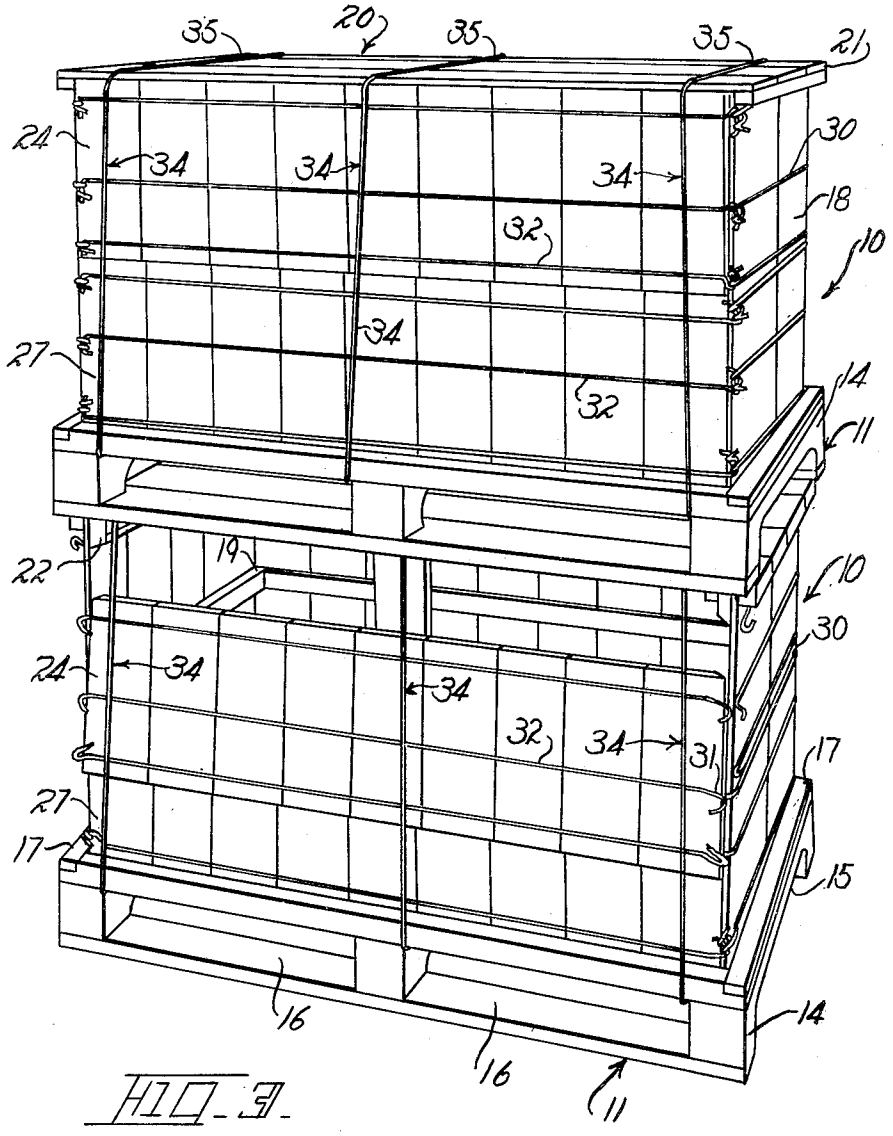

FIG. 3.

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UNITED STATES PATENT OFFICE

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PORTABLE WIRE-BOUND BOX

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7 Claims. (Cl. 217—12)

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This invention relates to a portable material handling box. More specifically, the invention relates to a portable material handling box that may readily be used in the transporting of mechanical parts and which is constructed so that it may easily be utilized as a storage bin when the box has reached its destination.

The prime object of this invention is to provide a portable box structure that is particularly suited and adapted for use as a bin, the box being constructed so that a plurality of them can be stacked in superposed relation, each box including a novel door construction for permitting access to any one of the boxes.

Another object is to provide an improved wire-bound box construction, the wirebound box including a plurality of side panels, one of said side panels having a sliding door section which may readily be vertically displaced to provide an access opening into the box.

A still further object is to provide a novel bin construction having a sliding door in one side thereof, the bin including a novel guiding arrangement in the form of a plurality of peripherally extending flexible members arranged to secure the box in assembly and to provide guide means for guiding and retaining the sliding door in connected relation with the box upon the movement of the door to an open position.

Still another object is to provide a novel sliding door arrangement for a portable box, the arrangement including a plurality of flexible strands connected about the periphery of the box.

These and other objects will be further apparent from a reading of the description and upon examination of the drawings.

In the drawings:

Fig. 1 is a side perspective view of a portable bin or box construction, the view showing a sliding side section of the box positioned in an open position.

Fig. 2 is a cross sectional view through the box structure taken substantially along the line 2—2 of Fig. 1.

Fig. 3 is a side perspective view showing a pair of portable box constructions, one stacked upon the other in superposed relation.

A portable bin or box structure is generally designated by the reference character 10. The box structure 10 includes a pallet base 11 having a pair of laterally spaced longitudinally extending base members 12. A platform 13 is vertically positioned with respect to the parallel base members 12 and is supported by means of a plurality

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of horizontally spaced supports 14. The supports 14 are each provided with cut-out portions 15 which provide an opening at the ends of the pallet base 11 for the entry of a conventional type of fork lifting truck (not shown). The supports 14 as best shown in Figs. 1 and 3 are spaced with respect to each other, thus providing openings 16 at opposite sides of the pallet base 11. These openings 16 also are provided to facilitate the raising and lowering of the box structure 10 by means of a conventional lift truck.

The platform 13 is provided with a plurality of end cleats 17 which extend along the peripheral edge of the platform 13. A plurality of vertically extending side panels 18 are supported on the platform 13, the side panels 18 being securely held at their lower edges by means of the cleats 17. The side panels 18 also include a plurality of longitudinally extending supporting braces 19 which may be attached to the panels in a conventional manner. For the purpose of disclosure, the side panels 18 are shown of wooden board construction, the boards being connected in end to end relation by means of the supporting braces 19. It is, of course, readily apparent that the box structure can readily be made of any suitable material without departing in any way from the invention as disclosed.

A top 20 is supported on the upper ends of the side panels 18, the top including a plurality of longitudinally extending boards 21 suitably connected together by means of cleats 22.

As best shown in Fig. 1, a side panel 18 is provided with an upper sliding panel or section 24. The sliding section 24 may be of board construction and is firmly secured together by means of a plurailty of longitudinally extending cleats 25. A lower stationary section 27, as best shown in Fig. 3, is positioned beneath the upper sliding section or panel 24. The stationary section 27 is firmly secured together by means of a plurality of longitudinally extending cleats 28. The connection of the cleats 28 to the panel 27 may be conventional.

The stationary section 27 is rigidly secured to the box structure 10 by means of a plurality of horizontally extending flexible wire straps 30. The wire straps 30 are connected to the side panels 18. Each strap 30 includes a pair of flexible end portions 31 which project outwardly from the panels 18. A plurality of short sections of wire 32 are connected to the lower stationary section 27 and extend horizontally in substantially parallel relation with respect to one an-

other. The short sections of wire 32 are connected to the end portions 31 by twisting and bending them over until a taut connection is secured.

The upper sliding panel 24 is also secured on the box in a closed position as best shown in Fig. 3 by means of flexible wire straps 30 that extend longitudinally about the upper periphery of the box, each of the flexible wire straps 30 being secured in a conventional manner to the panels 18. The upper sliding section 24 also includes a plurality of horizontally extending short sections of wire 32 which are arranged to engage the flexible end portions 31 in twisting relation for securely connecting the sliding section in its closed position.

The box structure also includes a plurality of guide wires 34. The guide wires 34 are spaced longitudinally with respect to one another and extend about the periphery of the box. They include horizontal sections 35 which extend over the top 20 and underneath the platform 13 and vertical sections 36 for rigidly securing the box structure 10 to the pallet base 11. The guide wires 34 provide a guiding arrangement for securing the upper sliding section 24 over the lower stationary section 27 when the sliding section 24 has been vertically displaced to the position shown in Fig. 2. In this, the open position, an access 37 is provided into the box structure. The guide wires 34 securely hold the upper sliding section 24 in its open position, and when it is desired to close the access 37 of the bin the sliding section 24 can readily be moved upwardly for closing the access.

It can readily be seen that an inexpensive portable wirebound box has been provided that is readily adapted for use as a bin. By the novel arrangement of the guide wires, a simple, efficient, and economical sliding arrangement is provided which can readily be utilized to convert the box into a bin when a plurality of these boxes are stacked in superposed relation. The novel arrangement of the flexible wire straps permits the sliding section to be readily and quickly closed over the access 37 by merely twisting the ends of the short section of wire 32 with the flexible end portions 31. After the box has been shipped to its destination it is often desirable to provide an access to the box immediately without removing the box from the position in which it has been stacked with other boxes of similar construction. This is often the case where the box may contain mechanical parts that have to be readily available on short notice. In order to secure quick access to the box or bin the individual merely untwists the end portions 31 from the short sections of wire 32 and he thereupon can lower the upper sliding section 24 into place over the lower stationary section 27. The guide wires 34 serve to retain the upper sliding section 24 in this open position.

It is apparent that the objects of the invention have been fully achieved by the novel aspects of the invention as disclosed and it must be understood that modifications and changes may be made in the invention which do not depart from the spirit of the invention as disclosed nor the scope thereof as defined in the appended claims.

What is claimed is:

1. A storage bin comprising in combination, a base, a platform supported on the base members in vertical spaced relation, means for supporting the platform on said base including a plurality of horizontally spaced supports connected to the base members and to the platform, a box structure supported on the platform, said structure including a plurality of vertical side panels having a top closure panel, one of said side panels including an upper sliding section adapted to be vertically displaced from a closed position on the box structure for providing an opening into said box structure, and a lower section rigidly secured to the box structure beneath said sliding section, means connecting the sliding section to the box structure in the closed position including a plurality of flexible members extending horizontally about the upper periphery of the box structure, said flexible members having flexible end portions projecting outwardly from the side panels of the box, short flexible elements on the sliding section for engaging the flexible end portions in twisted relation, and guide means for directing and securing the sliding section over the lower section during vertical displacement of the sliding section, said guide means including a plurality of flexible strands extending horizontally underneath the platform and vertically with respect thereto about the periphery of the box structure.

2. A storage bin comprising in combination, a base, a platform supported on the base in vertical spaced relation, means for supporting the platform on said base including a plurality of horizontally spaced supports connected to the base and to the platform, a box structure supported on the platform, said structure including a plurality of vertical side panels having a top closure panel, one of said side panels including an upper sliding section adapted to be vertically displaced from a closed position on the box structure for providing an opening into said box structure, and a lower section rigidly secured to the box structure beneath said sliding section, means connecting the sliding section to the box structure in the closed position including a plurality of flexible members extending horizontally about the upper periphery of the box structure, said flexible members having flexible end portions projecting outwardly from the side panels of the box, flexible elements on the sliding section for engaging the flexible end portions in twisted relation, and guide means for directing and securing the sliding section over the lower section during vertical displacement of the sliding section.

3. A storage bin comprising in combination, a base, a platform supported on the base in vertical spaced relation, means for supporting the platform on said base including a plurality of horizontally spaced supports connected to the base and to the platform, a box structure supported on the platform, said structure including a plurality of vertical side panels having a top closure panel, one of said side panels including an upper sliding section adapted to be vertically displaced from a closed position on the box structure for providing an opening into said box structure, and a lower section rigidly secured to the box structure beneath said sliding section, means connecting the sliding section to the box structure in the closed position, and guide means for directing and securing the sliding section over the lower section during vertical displacement of the sliding section, said guide means including a plurality of flexible strands extending horizontally underneath the platform and vertically with respect thereto about the periphery of the box structure.

4. A storage bin comprising a box structure having a base, a plurality of vertical side panels supported by the base and a top connected to the side panels, one of said side panels including a lower stationary section, an upper sliding section positioned above said stationary section, said upper section being adapted to be vertically displaced from a closed position for providing an opening in the box structure, means connecting the sliding section to the box structure in the closed position including a plurality of flexible members extending horizontally about the upper periphery of the box structure, said flexible members having flexible end portions projecting outwardly from the box structure, flexible elements on the sliding section adapted to engage the end portions in twisted relation, and guide means for guiding the sliding section over the stationary section during vertical sliding displacement of the sliding section, said guide means including a plurality of longitudinally spaced strands extending vertically and horizontally about the periphery of the box structure.

5. A storage bin comprising a box structure having a base, a plurality of vertical side panels supported by the base and a top connected to the side panels, one of said side panels including a stationary section, a sliding section positioned adjacent said stationary section, said sliding section being adapted to be vertically displaced from a closed position for providing an opening in the box structure, means connecting the sliding section to the box structure in the closed position, and guide means for guiding the sliding section over the stationary section during vertical sliding displacement of the sliding section, said guide means including a plurality of longitudinally spaced strands extending vertically and horizontally about the periphery of the box structure.

6. A storage bin comprising a box structure having a base, a plurality of vertical side panels supported by the base and a top connected to the side panels, one of said side panels including a lower stationary section, an upper sliding section positioned above said stationary section, said upper section being adapted to be vertically displaced from a closed position for providing an opening in the box structure, means connecting the sliding section to the box structure in the closed position including a plurality of flexible members extending horizontally on the box structure, said flexible members having flexible end portions, flexible elements on the sliding section adapted to be secured to the end portions, and guide means for guiding the sliding section over the stationary section during vertical sliding displacement of the sliding section, said guide means including a plurality of longitudinally spaced strands extending vertically and horizontally about the periphery of the box structure.

7. A storage bin comprising a box structure having a base, a top and a plurality of vertical side panels, one of said side panels including an upper sliding section arranged to be vertically displaced from a closed position to provide an access into said box structure, a lower section connected to said box structure beneath the upper sliding section, means detachably securing the sliding section to the box structure in the closed position, and guide means for guiding the sliding section from a closed position to an open position over the lower section, said guide means including a plurality of horizontally spaced flexible strands connected to the box structure and extending vertically in coextensive relation with respect to one of the side panels.

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No references cited.