Nov. 11, 1952 L. J. ROSENBERG 2,617,524

MASTER SHIPPING CONTAINER

Filed June 11, 1949

2 SHEETS—SHEET 1

FIG. 1.

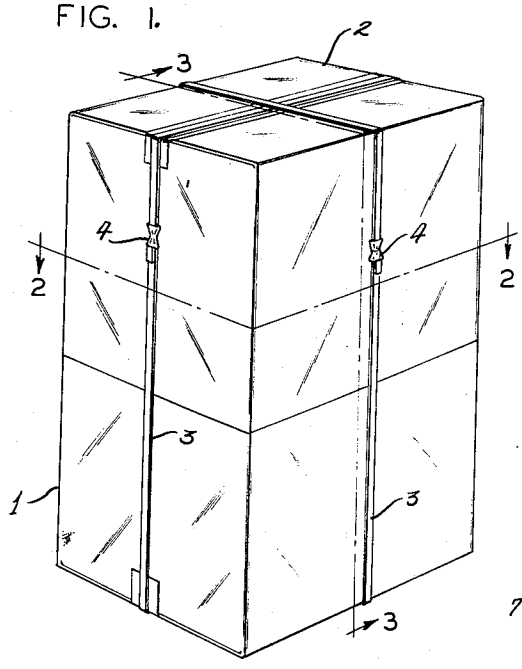


FIG. 2.

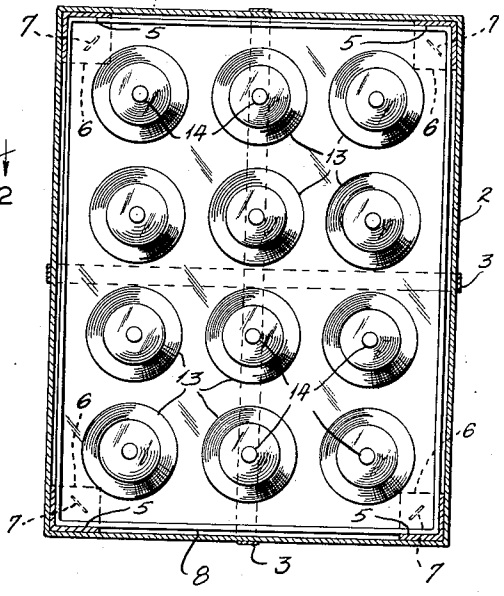
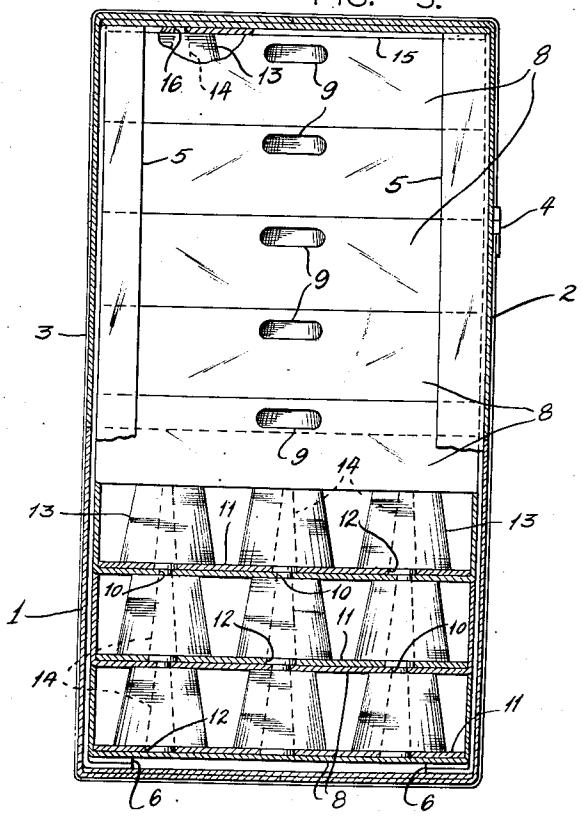


FIG. 3.



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2 SHEETS—SHEET 2

FIG. 6.

FIG. 4.

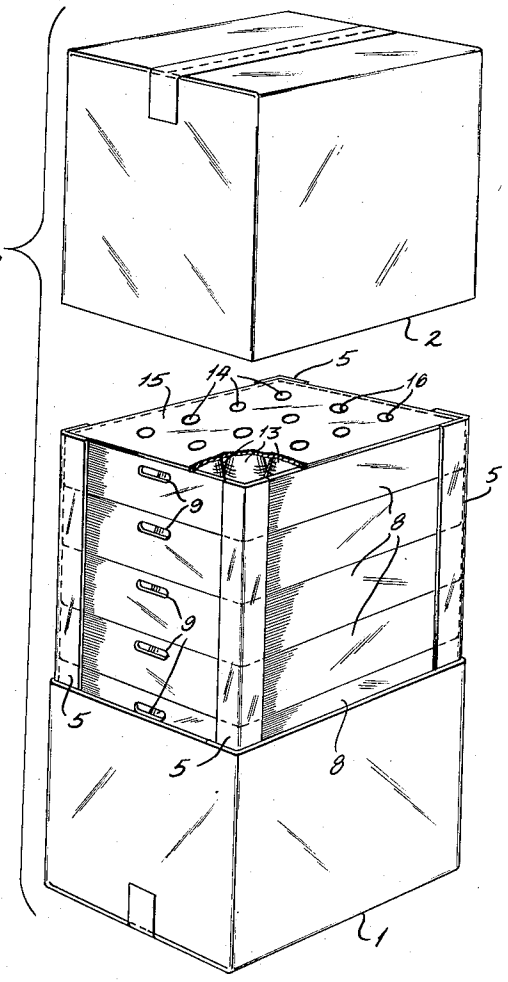
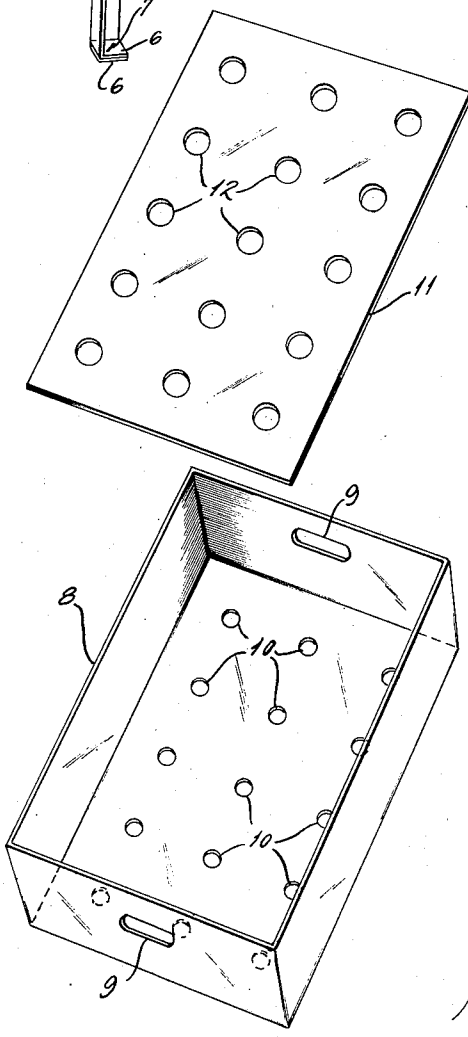


FIG. 5.



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UNITED STATES PATENT OFFICE

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MASTER SHIPPING CONTAINER

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Application June 11, 1949, Serial No. 98,556

3 Claims. (Cl. 206—65)

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This invention relates to shipping containers of the kind comprising an upwardly opening lower section and a downwardly opening upper section of substantially identical rectangular cross-section disposed with their open ends in abutting relation and means for securing said sections together. The invention relates more specifically to relatively tall heavy duty master shipping containers of the above type that are made of paperboard and are used for shipping in stack formation a multiplicity of relatively small packages each containing a plurality of rayon yarn cones held upright therein in horizontally spaced relation. In some cases, the container is provided with an open ended liner which extends from top to bottom of the container and is provided above the lower container section with a hinged side door through which access may be had to the liner for stacking the packages in the lower portion thereof. In other cases, the liner is dispensed with and the packages stacked in the lower container section and to the required height thereabove, after which the downwardly opening upper container section is telescoped over the exposed upper end portion of the stack and brought into endwise abutting relation with the lower container section. In the first case, the liner increases the cost of the container and it is difficult to pack; and in the second case no means is provided for holding the superposed packages in vertical alinement above the lower container section, thereby making it difficult to telescope the upper container section over the exposed upper portion of the stack of packages.

The principal object of the present invention is to dispense with the liner and thereby save the cost thereof and afford ready access to the upwardly opening lower container section and to provide the lower container section with separate upright members in the interior vertical corners thereof which extend above said lower container section and position and hold the packages above the level thereof in vertical alinement. These upright members also serve to pilot or guide the upper container section over the upper portion of the stack and stiffen and strengthen the sides of the container and resist sidewise shifting of the upper and lower sections thereof. Another object is to provide cone holding packages in the form of easily stackable rectangular paperboard trays that are provided with means for anchoring the cones therein in spaced upright position.

The invention consists in providing the upwardly opening lower container section with upright paper-board corner members of angular cross-section that fit in the interior vertical corners of said section and have portions extending thereabove over which the downwardly opening container section is telescoped into abutting relation with said lower section. The invention also consists in providing the container with a series of article containing trays adapted for stacking one on another in and above said lower section and with their corners fitting in the interior angles of said upright corner members. The invention also consists in providing the trays with means for laterally interlocking the stacked trays and for holding the cones in spaced upright position therein; and it also consists in the parts and arrangements and combinations of parts hereinafter described and claimed.

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In the accompanying drawings, which form part of this specification and wherein like symbols refer to like parts wherever they occur,

Fig. 1 is a perspective view of a shipping container embodying my invention, the container being packed and strapped and ready for shipment,

Fig. 2 is a horizontal cross-section view on the line 2—2 in Fig. 1;

Fig. 3 is a vertical sectional view on the line 3—3 in Fig. 1, with some of the trays shown in side elevation,

Fig. 4 is a perspective view, showing the tray stacked mounted in the lower section and extending thereabove with its upper portion held in vertical alignment by the upwardly extending portions of the upright corner members and with the downwardly opening upper container section ready to be telescoped over said portions of said upright corner members into abutting relation with said lower container section,

Fig. 5 is a perspective view of one of the cone holding trays and the cone spacing bottom pad therefor; and

Fig. 6 is a perspective view of one of the upright corner members of the container.

In the accompanying drawings my invention is shown embodied in a relatively tall heavy duty shipping container comprising an upwardly opening lower section 1 and a downwardly opening upper section 2, both of substantially identical rectangular cross-section and disposed with their open ends in abutting relation, the two container sections being preferably made of folded paperboard or other suitable material. The two container sections are preferably held together by means of crossed metal securing bands or straps 3 that extend around the container along

the top, bottom and sides thereof and are locked in contracted position by means of suitable coupling members 4.

The container also includes separate upright members 5 of angular cross-section which fit in the interior vertical corners of the container and extend continuously from the closed bottom of the lower container section 1 to the closed top of the upper container section 2. These upright corner members 5 are preferably also made of folded paperboard and have overlapped horizontal base or foot flanges 6 that are stapled or otherwise secured together, as at 7, and seat on the bottom of the lower container section 1.

Located within the container is a series of counterpart rectangular trays 8 that are stacked one on another from top to bottom of the container with their corner portions snugly fitting in the interior angles of the upright corner members 5. These trays are preferably also made of folded paperboard and have hand holes 9 in two opposite side walls thereof. Each of said trays 8 has a series of relatively small circular holes 10 extending through the bottom thereof and is provided with a pad 11 of paperboard or other suitable material which snugly fits therein and seats on the bottom thereof and has a similar series of relatively large circular holes 12 that register with the relatively small openings in the bottom of the tray. Each tray 8 is adapted to contain a plurality of articles, such as truncated cones 13 of rayon yarn wound upon tapered spools or cores 14 whose ends project from said cones. The rayon yarn cones 13 are positioned in each tray with their large ends seated on the bottom pad 11 therein and their small upper ends disposed substantially flush with the top edge of said tray and with the large lower ends of the spools of said cones fitting in the large holes 12 in said bottom pad and the small upper ends of said spools extending above top edge of said tray. Each tray 8 seats on the top edge of the tray located immediately therebelow and on the small upper ends of the rayon yarn cones 13 in the lower tray; and the small upper ends of the spools 14 of said cones extend into the small holes 10 in the bottom of the upper tray. The topmost tray in the stack is provided with a separate cover pad 15 which is preferably also made of paperboard and seats on top of said tray and the small upper ends of the cones 13 therein and has relatively small vertical holes 16 adapted to receive the small projecting upper ends of the spools 14 of said cones.

The master shipping carton is assembled and packed in the following manner. The upright corner members 5 are positioned in the vertical corners of the upwardly opening lower container section 1 and extend thereabove with their lapped base flanges 6 seated on the bottom thereof. The trays 8 with the cones 13 positioned therein, in the manner above described, are then stacked one on another in the lower container section 1 and above the level thereof until the stack reaches the tops of the upright corner members 5. The cover pad 15 for the topmost tray is then applied thereto, after which the upper container section 2 is telescoped downwardly over the upright corner members 5 into abutting relation with the upper end of the lower container section 1. The completely packed and assembled container is then bound with the securing straps 3. As shown in the drawings, the joint between the abutting ends of the two container sections is located substantially midway between the top and bottom of the tray located approximately midway of the top and bottom of the stack, whereby the sides of said tray span said joint and serve to increase the strength thereof.

The hereinbefore described master shipping container has numerous important advantages. The open tray 8 with the cones 13 held in proper spaced relation therein are quickly and easily stacked one on another in and above the lower section 1 and the trays in the portion of the stack or tier that extends above said lower section are held in vertical alinement by the upright corner members 5 which also serve to pilot and guide the upper container section 2 when it is telescoped into place. The upright corner members 5 also serve to stiffen and strengthen the vertical corners of the carton and also provide added protection for the vertical corners of the trays; and they also serve to resist relative shifting of the two container sections, such shifting movement being also resisted by the tray located opposite the joint therebetween. The cones 13 of each tray 5 are supported on the bottom pad 11 thereof and provide support for the bottom of the tray seated on the upper edge of the first mentioned tray; and the bottom of each tray provides support for the lower ends of the spools seated in the bottom pad of said tray. The engagement of the upper ends of the spools of the cones in each tray with the hole in the bottom of the tray seated thereon assist the upright corner members in preventing relative sidewise shifting of said trays. Obviously, the size of the shipping container and the number of trays and rayon cones therein may be varied and otherwise modified for carrying various fragile articles of different shapes.

What I claim is:

1. A master shipping container comprising an upwardly opening lower section of rectangular cross-section, a series of trays of counterpart dimensions adapted to receive a plurality of articles of substantially uniform shape, said trays being superposed one on another in said lower section to form a stack extending a substantial distance thereabove, each of said trays having a bottom panel with a spaced series of relatively small holes therein and a separate bottom pad having a similar spaced series of larger holes concentric with said bottom panel holes, each of said bottom pad holes being adapted to receive and anchor the bottom portion of one of said articles in fixed position and each of said bottom panel holes in the corresponding position of the superimposed tray being adapted to receive and anchor the top portion of said article, a downwardly opening upper section of rectangular cross-section telescoped over the portion of the tray stack extending above said lower section, said upper and lower telescoping sections abutting below the mid-height of said container and substantially midway of the height of the adjacent tray in said stack, and a plurality of upright members extending substantially from top to bottom of said container and fitting in the interior angles formed by the vertical corners of said sections and adapted to receive the corners of said rectangular trays, whereby said upright members serve to position and hold said trays in vertical alinement above said lower section prior to the application of said upper section and to pilot said upper section over the trays located above said lower section and to strengthen and stiffen the vertical corners of the container and protect the vertical corners of said trays.

2. A relatively tall master container for ship-

ping cones of filament yarn wound on cone-shaped cores, each of said cores having a base and top portion extending beyond said yarn cone, said container comprising a plurality of vertically stacked rectangular trays of counterpart shape and size, upper and lower telescoping cover members snugly enclosing said trays, the depth of said trays being slightly less than the height of said cone cores, each of said trays having a bottom panel and a snugly fitting pad overlying said bottom panel, said pad having a plurality of spaced holes therein adapted to receive the base of said cone cores and said bottom panel having a plurality of smaller holes in concentric alignment with said pad holes, said bottom panel holes providing openings for receiving the tops of said cone cores and anchoring same in the adjacent superimposed tray and locking said stack of trays into a vertical unit wherein said yarn cones are maintained in fixed non-contacting and non-shifting relation in any direction, the top tray of said stack having a closure pad with a plurality of spaced holes therein similar to and in alignment with the holes in the bottom panel of said topmost tray, said holes in said closure pad being adapted to receive and anchor the tops of the cone cores in said topmost tray, the upper edge of said lower telescoping cover member terminating below the mid-height of said stack of trays at approximately the mid-height of the adjacent tray, said upper telescoping cover member extending downward in abutting relation to said lower cover member, and means for securing said sections in abutting relation.

3. A relatively tall master shipping container for shipping cones of yarn wound on cone shaped cores, each of said cores having a base portion and a top portion extending beyond said yarn cone, said container comprising an upwardly opening lower cover section and a downwardly opening upper cover section, a series of trays superimposed one on another in said lower cover section to form a stack extending a substantial distance thereabove, each of said trays comprising a bottom panel with upstanding walls, said bottom panel having a plurality of relatively small holes therein, and a separate bottom pad having larger holes therein in concentric alignment with said holes in said bottom panel, each of said bottom pad holes being adapted to receive the bottom portion of a core of one of said yarn

cones, each of said bottom panel holes being adapted to receive the top portion of one of said yarn cones positioned in the subjacent tray, the top tray of said stack having a closure pad with a plurality of spaced holes in alignment with the holes in the bottom pad of said topmost tray, said bottom panel of each superimposed tray being supported by the upstanding walls and the yarn cones of the subjacent tray, whereby all yarn cones in said container are maintained in fixed non-contacting and non-shifting relation in any direction, and a plurality of upright members of angular cross-section extending substantially from the top to bottom of said container and fitting in the interior angles formed by the vertical corners of said sections, each of said upright members having an inwardly bent flange at its lower edge which seats on the bottom of said lower cover section, said upright members being adapted to receive the corners of said trays, whereby said upright members serve to position and hold said trays in vertical alignment above said lower cover section prior to the application of said upper cover section and to pilot said upper cover section over the trays located above said lower cover section and to strengthen and stiffen the vertical corners of the container, said upper edge of said lower cover section terminating below the mid-height of said stack of trays at approximately the mid-height of the adjacent tray, said upper cover section extending downwardly in abutting relation to said lower cover member, and means for securing said cover sections in abutting relation.

LEON JOSEPH ROSENBERG.

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