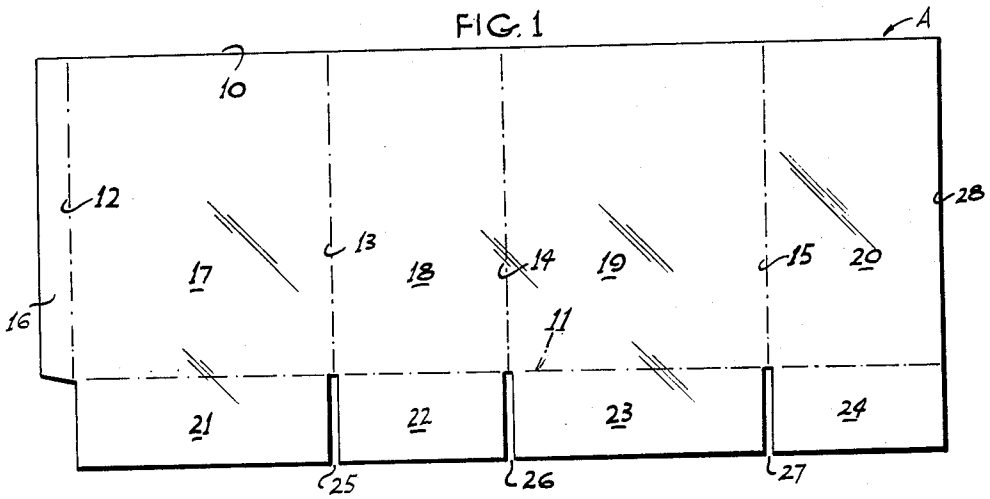
May 14, 1963 C. D. FALLERT 3,089,589

CONTAINER

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FIG. 1



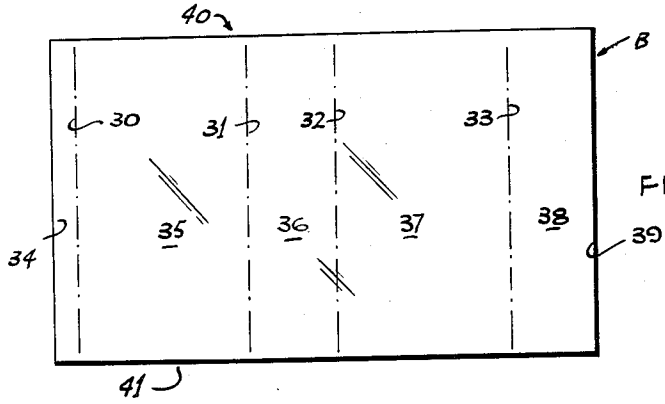
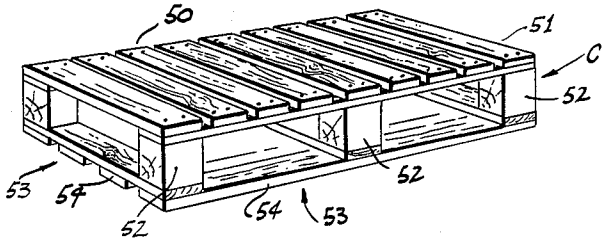


FIG. 2

FIG. 3



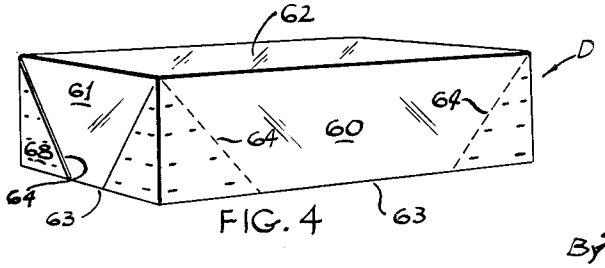


FIG. 4

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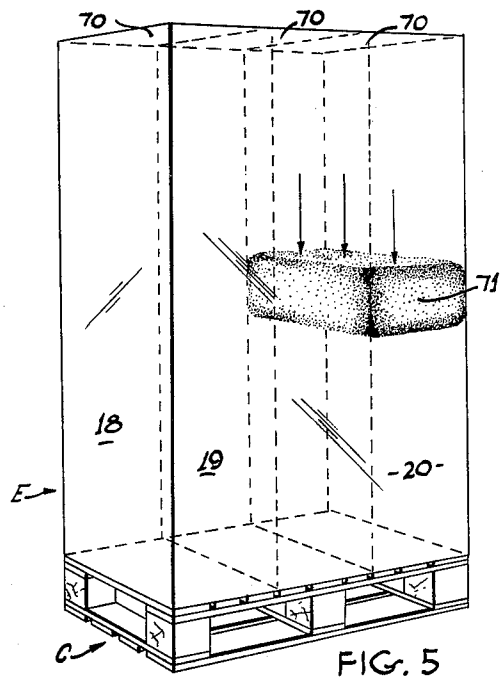


FIG. 5

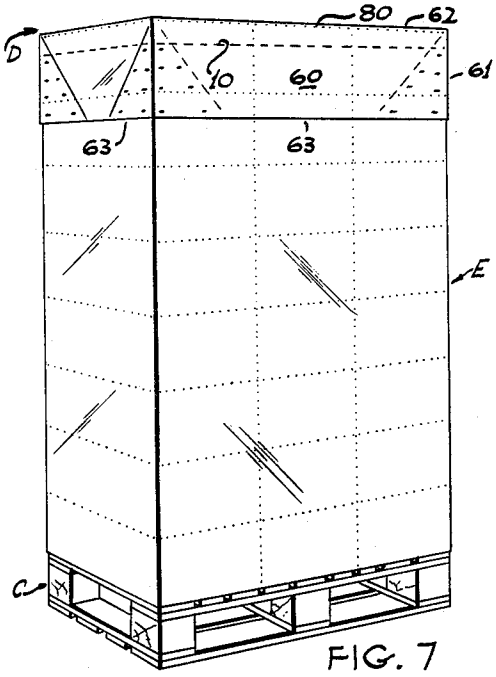


FIG. 7

FIG. 6

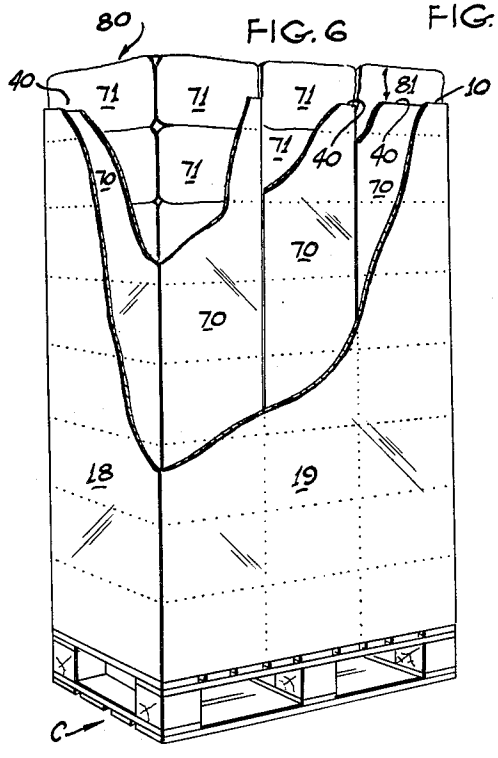
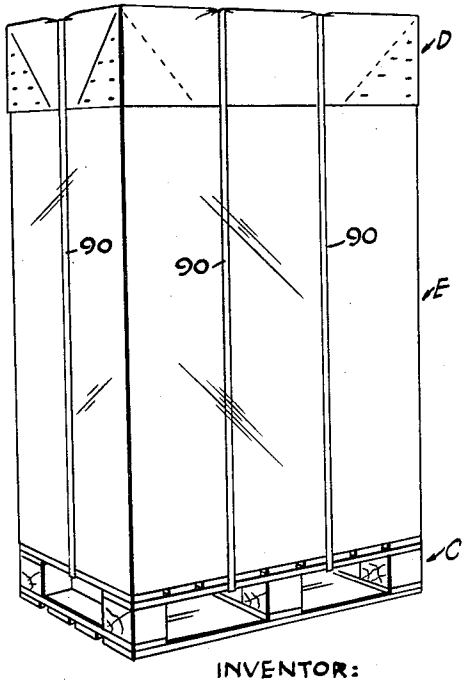


FIG. 8



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United States Patent Office 3,089,589 Patented May 14, 1963

3,089,589

CONTAINER

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Filed May 9, 1960, Ser. No. 27,924
1 Claim. (Cl. 206—65)

The invention relates to a package adapted for vertical stacking and export shipment comprising a specially designed compartmented paperboard container loaded with an orderly arrangement of a plurality of cold-flow synthetic rubber blocks of substantially uniform dimensions, having a combined weight of at least 1500 pounds. The container is permanently secured to a rigid pallet and due to its special construction, its walls are, substantially, free of lateral distortion from the strong outward thrust of the cold flow contents. The packages may be stacked one upon another when fully loaded without danger of leaning, distortion or other hazards.

To a large extent, it is the practice of the manufacturers of synthetic rubber to form the material into essentially uniform bales or blocks at plants which are usually distantly removed from points of further processing. The blocks are approximately 14 x 28 x 7 inches and weigh from about 70 to 80 pounds each. The material is quite sensitive to contamination and, consequently, must be protected from extraneous matter, such as paperboard particles, dirt and especially metals. To that end, the blocks are wrapped by the manufacturer in material compatible with the rubber, for example, polyethylene sheets and, normally, heat sealed prior to packaging for shipment.

Reference is made to the George et al. Patent No. 2,634,038, entitled "Container," for a paperboard container which provides adequate resistance to the lateral thrust of the cold-flow rubber blocks and con-comitantly preserves the block form of the rubber. This style container is in wide use for domestic shipments for synthetic rubber blocks. However, it fails to meet the requirements for export shipment and also vertical stacking for warehouse storage, a necessity for such shipments. As a consequence, export packages have been largely, if not entirely, confined to the use of relatively expensive containers of wood or other inflexible material.

The present invention provides a far less costly package, fully meeting all the requirements for multiple stacking and export, while preventing the blocks from becoming distorted from their initial shape.

More particularly, applicant has provided a rectangular shaped paperboard container of connected together side and walls and a bottom closure permanently secured to a pallet of wood or other inflexible material slightly larger than the closure. The container snugly encloses a series of open ended tubes, substantially equal in height with the container walls. The walls of each tube are secured together by a glue flap on the outside of adjacent walls or by a manufacturer's tape joint to insure a perfectly smooth, uninterrupted interior surface. The horizontal cross section of the tubes is slightly greater than that of a rubber block to facilitate rapid and convenient loading by dropping the blocks in flatwise relation successively through the top of the tubes until filled. A desirable and preferred height of the container walls and tubes is about 52 inches. Eight blocks will thus initially extend appreciably above the tops of the tubes. As a result of the cold flow characteristics of the synthetic rubber, the stack of blocks in each tube will soon settle to or below the top edges of the tubes, whereupon the package may be closed by a partially telescoping cover member.

It is an object of the invention to provide a heavy duty paperboard container for export shipment of cold-flow synthetic rubber in the form of a plurality of bales or blocks of substantially uniform dimensions protected from any appreciable distortion of their basic shape arising from their cold-flow characteristics.

Another object is to provide the combination of a heavy duty paperboard container with a pallet of inflexible material permanently secured to the bottom closure of the container for packaging cold-flow synthetic rubber blocks for storage in vertical stacks of at least two loaded units.

A further object is to provide a package of at least 24 synthetic rubber blocks about 14 inches wide, 28 inches long, 7 inches thick, weighing approximately 70 to 80 pounds each, packed in a heavy duty paperboard container for export shipment and warehousing in tiers.

With the above and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully set forth, illustrated in the drawings and pointed out in the appended claim.

In the drawings:

FIG. 1 is a plan view of the blank for forming the body of the container.

FIG. 2 is a plan view of the blank for forming an open-ended tube for insertion in the body of the container.

FIG. 3 is a perspective view of a pallet to be attached to the bottom closure of the container.

FIG. 4 is a perspective view of the partially telescopic top closure of the container.

FIG. 5 is a perspective view of the container erected and secured to the pallet with three tubes in place, showing a rubber block dropping downwardly in a tube.

FIG. 6 is a perspective view of the container with the tubes packed with rubber blocks, the corners of the tubes broken away to show the initial projection of the blocks above the top of the tubes and container walls.

FIG. 7 is a perspective view of the container with the top closure in place with its underface resting on the top of the blocks in their initial outwardly extended position above the tubes and container walls.

FIG. 8 is a perspective view of the complete package, the tops of the tiers of blocks settled to or slightly below the tops of the tubes and walls. The top closure in normal closed position and crossed metal bands vertically encircling the container and pallet.

In a preferred embodiment of the invention, illustrated in the drawings, a rectangular shaped container, enclosing three open-ended tubes each packaging a single vertical tier of eight rubber blocks, is employed.

The blank A, for forming the body of the container, illustrated in FIG. 1 may be made of any suitable flexible material, preferably of paperboard. It is scored transversely at **11** to define the bottom edges of the side walls **17** through **20** and vertically at **12** through **15** to define the sides of the walls, the glue flap **16** being hinged about score **12**. The free top edges of the walls are indicated at **10**. The transverse score **11** also defines the inner hinged edges of the bottom closure flaps, **21** through **24**, separated by slots, **25**, **26** and **27**, respectively.

FIG. 2 illustrates the blank B for forming an open ended inner tube to be inserted in the assembled container. The blank is scored vertically at **30** through **33** to define the panels **35** through **38**, the top and bottom edges of the panels being indicated at **40** and **41** respectively. Score **30** also indicates the hinge line of glue flap **34**.

The pallet C, shown in FIG. 3 may be constructed of wood or other suitable inflexible material. The top platform **50**, is formed of transverse slats **51**, mounted on spacing blocks **52**. The blocks are secured to the bottom **53** of the pallet, which is formed of longitudinal slats **54**. The construction, as may be seen from the drawing, provides 4-way entry for fork lift trucks.

FIG. 4 illustrates in perspective a preferred form D of the top closure of the container. It comprises side and end telescoping flanges **60** and **61** respectively, hinged to a top panel **62**. The free end edges of the flanges are indicated at **63**. Extensions of the side edges of the flanges are secured to the adjacent member and the closure may be collapsed to flat form, for shipment to the point of use, about the diagonal scores **64**.

The assembled container E, with three assembled tubes **70** in juxtaposed position in the container is shown in the perspective drawing, FIG. 5. A typical cold-flow rubber block **71** is shown in the process of dropping through the top to the bottom of a tube **70**. The assembled container is mounted on the pallet C.

In the perspective drawing, FIG. 6, the container E with each of the tubes **70** filled with a tier of rubber blocks **71**. The tops **80**, of the tiers extend about one half, **81**, of the thickness of the top block of the tier above the top edge **10** of the container and **40** of the tubes, as shown by the cutaway portions of the container and tubes.

FIG. 7 is a perspective view of the loaded container of FIG. 6 with the top closure D in position. In this initial projection of the tiers of blocks above the top edge of the container, the top panel **62** necessarily rests on the tops **80** of the blocks. The flanges are sufficient in length for the free end edges, **63**, thereof to extend below the top edge **10** of the container in this initial position of the top of the tiers of blocks as shown at **80**.

The package, complete with the tiers of rubber blocks settled slightly below the tops **10** of the container walls and **40** of the tubes, with the top panel **62** of the closure resting on the tops **10** of the walls and **40** of the tubes, including the crossed metal straps **90** vertically encircling the container and pallet, is illustrated in the perspective view FIG. 8.

The container may be conveniently assembled by folding the panel **20** of a blank A, of FIG. 1, inwardly flatwise over panel **19** about score **15**, and panel **17** inwardly about score **13**, flatwise over panels **18** and **19**. The flap **16** may then be secured to panel **20** by glue staples or other means. The assembled blank is in suitable collapsed form for shipment to the point for use.

The blank B, FIG. 2, for an open-ended tube may be similarly assembled by folding the panel **38** inwardly about score **33** flatwise over panel **37** and panel **35** inwardly about score **31** flatwise over panels **36** and **37**, whereupon the flap **34** may be secured to side panel **38** by glue or tape. Metal staples must be avoided to eliminate the possibility of contaminating the sensitive rubber blocks with which the tubes will be loaded, by contact with metal. The assembled tube is in suitable collapsed form for shipment to the point of use.

At the point of use; the pre-assembled container is opened into rectangular tubular form. The bottom closure flaps **22** and **24** are folded inwardly in right angular relation to side walls **18** and **20** respectively, and flaps **21** and **23** right angularly inwardly over and secured to the folded flaps **22** and **24**, forming a rigid double closure. The container is mounted on a pallet C, FIG. 3.

Three of the assembled tubes **70** are placed in the container and opened into rectangular form, in a side by side relation. As hereinbefore mentioned, the synthetic rubber blocks are standardized to approximately 28" x 14" x 7" in size. Since one of the important features of the invention is to confine the cold flow material as nearly as possible to these dimensions, the transverse section of each tube is only slightly greater than the length and width of a block, for example, 28 3/16" x 14 3/16", to facilitate manual or machine loading by dropping the blocks flatwise through the top. The height of the tubes is 52 inches, which permits loading 8 blocks in each tube, for a total of 24 blocks to the package, and a combined weight of about 1800 pounds.

The tubes are loaded and as shown in FIG. 6, the top

block of each tier projects above the top edge **10** of the container walls approximately half its thickness or more. The top closure D may then be placed over the container. The top panel **62** will rest on the tops **80** of the blocks in the several tiers and the free end edges **63** of the flanges **60** and **61** will extend below the top free end edges **10** of the walls of the container, all as illustrated in FIG. 7.

An important feature of the invention is to confine the effect of the cold-flow characteristic of the rubber blocks to an inconsequential change in their initial contour as loaded, which will be of no significance to the subsequent processing operations. The combination of eight walls of paperboard interposed between and enclosing the sides of the tiers of blocks and four walls enclosing the ends thereof, resists the very considerable lateral thrust of the material. Consequently the walls are substantially free of outward distension and the lateral effect of the cold-flow property is confined to a very slight lateral extension of each rubber block which fills the clearance space provided in the tubes for loading the blocks and a concomitant slight reduction of the thickness of each block. The cumulative effect of the reduction in the thickness is to lower the top **80** of the top block of each tier slightly below the top edge **10** of the container wall.

After the tiers of blocks have settled to slightly below the top edge **10** of the container, the underface of panel **62** of the top closure rests on the top edges **10** of the walls and the plurality of top edges **40** of the tubes B with the cover flanges **60** and **61** telescopically enclosing the upper portions of the container walls as shown in FIG. 8. The bands **90** encricling the container and pallet are attached and the package is complete and ready for shipment.

The walls of the container and the tubes which, as hereinbefore mentioned, are substantially free of lateral distension, provide ample and rigid support to the panel **62** of the top closure, through their multiplicity of free end edges **10** and **40** for supporting at least two of the packages in a vertically stacked position.

It is desirable to provide the pallet's transverse section slightly greater than that of the container to insure the utilization of all of the container and tube walls in supporting the superposed packages, when in a stacked relation.

It is to be understood that the embodiment herein described is illustrative and not restrictive, and it is also to be understood that the invention may be susceptible of embodiments in other modified forms, and that all such modifications which are similar or equivalent hereto come equally within the scope of the claim next appearing.

What I claim is:

A tall rectangular paperboard package containing a plurality of cold flow synthetic rubber blocks of substantially uniform rectangular form and of a comprised weight of at least 1500 pounds, the package capable of being vertically stacked one upon another, the package comprising an inflexible pallet and a heavy duty container with top and bottom edges and bottom closure flaps integral with the container bottom end edges and vertical outer side and end walls in foldably connected tubular relation, the bottom flaps being infolded and secured to the pallet, reinforcing and rigidifying members in the container consisting of a plurality of open ended tubes with vertical side and end walls coextensive in height with said container, the open ended tubes having rectangular transverse sections slightly greater than said blocks and with the side walls having a greater width dimension than said end walls, the open ended tubes arranged in side by side relation with the vertical side walls in flatwise contacting relation with each other and with the container outer end walls throughout their vertical height and width, the open ended tubes extending transversely of the heavy duty container with the end walls thereof each contacting the container side walls throughout their vertical height and width, each such open ended tube filled

with a single tier of said blocks at least eight blocks high in restricted vertical alignment, the vertical walls of said tubes being in mutually supporting relation with each other and with the outer container walls throughout their extent, a telescoping top closure having side and end flanges, the top closure resting on the top edges of the walls and open end tubes and enclosing the end edges of the container.

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