

Jan. 29, 1952

A. B. STOREY

2,583,673

CARTON

Filed May 26, 1949

2 SHEETS—SHEET 1

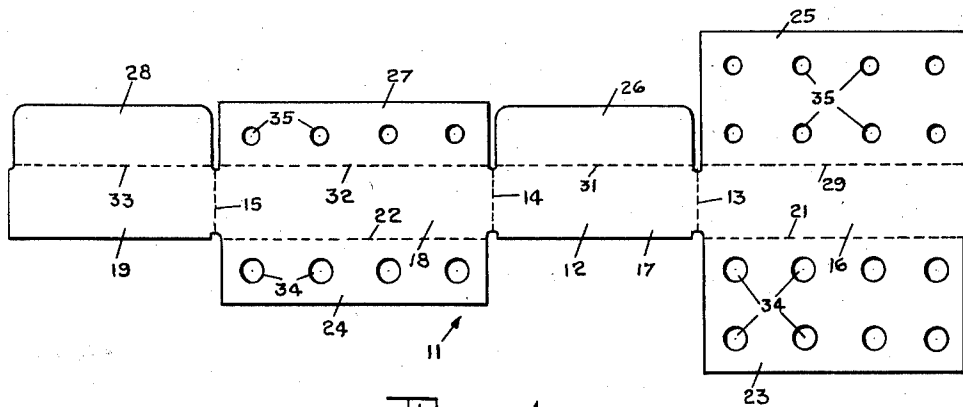


Fig. 1

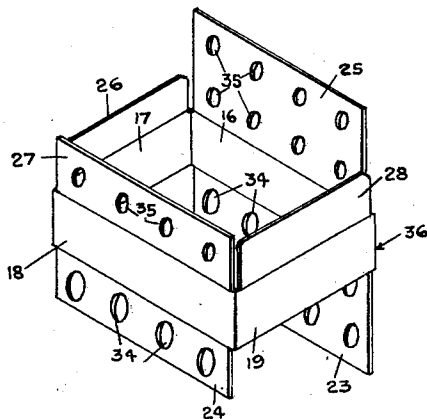


Fig. 2

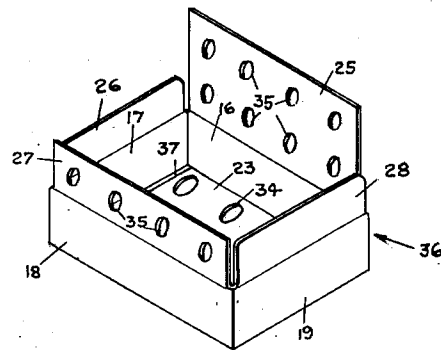


Fig. 3

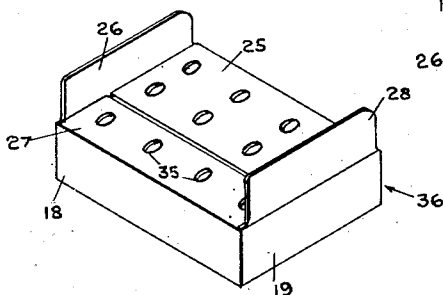


Fig. 4

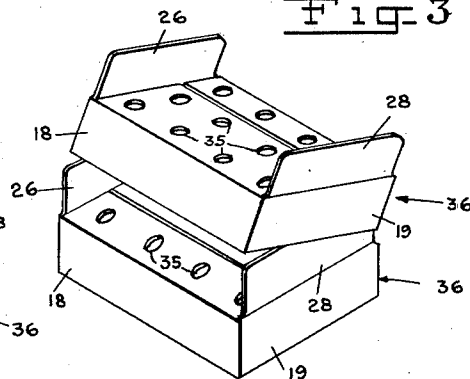


Fig. 5

INVENTOR.

ALVIN B. STOREY.

BY

W. H. C. Wilson
ATTORNEYS

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2 SHEETS—SHEET 2

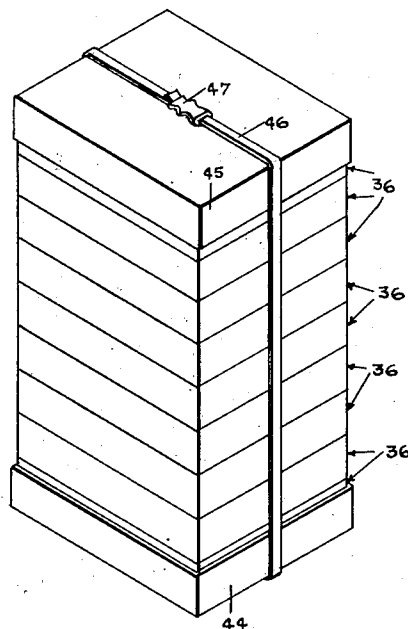


Fig. 6

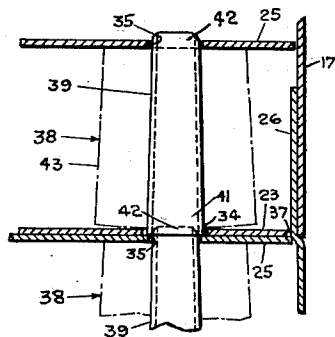


Fig. 7

INVENTOR.

ALVIN B. STOREY

BY

V. H. [Signature] + C. W. [Signature]
ATTORNEYS

UNITED STATES PATENT OFFICE

2,583,673

CARTON

Alvin B. Storey, Cumberland, Md., assignor to
Celanese Corporation of America, New York,
N. Y., a corporation of Delaware

Application May 26, 1949, Serial No. 96,761

1 Claim. (Cl. 229—40)

1

This invention relates to cartons, and relates more particularly to cartons for storing and shipping packages of yarn.

This application is a continuation-in-part of my co-pending application S. No. 85,957 filed April 7, 1949.

A considerable amount of yarn produced in the textile industry is wound on suitable supports with the windings so positioned thereon that the ends of the support extend beyond the yarn windings. During the storing and shipping of these packages of yarn, they are rigidly supported to prevent them from rubbing against each other or against the walls of the carton in which they are enclosed, since such rubbing would mar at least the outer layers of yarn on said packages. Heretofore, it has been the practice to provide such rigid support by placing in the carton in which packages of yarn are stored and shipped an insert having suitable openings for engaging the free ends of the yarn package supports. While such inserts will furnish adequate support for the packages of yarn if properly designed, their use involves an additional expense and additional labor is required for their assembly.

It is an important object of this invention to provide a carton for storing and shipping packages of yarn which will be free from the foregoing and other disadvantages of the prior cartons.

A further object of this invention is the provision of a lightweight carton for storing and shipping packages of yarn, which carton will rigidly support the packages of yarn without the use of inserts or other supporting means separate from the carton and which carton is provided with means for interlocking with a similar carton.

Other objects of this invention, together with certain details of construction, will be apparent from the following detailed description and claim.

In accordance with my invention, there is provided a carton for storing and shipping packages of yarn, having the inner surfaces of its top and bottom walls spaced apart a distance equal to or slightly larger than the height of the yarn windings on said packages, and having vertically aligned apertures in its top and bottom walls for engaging the free ends of the yarn package supports. Any desired number of packages of yarn having any shape and dimensions may be packed in a single carton by varying the physical dimensions of the carton, and the size, spacing and number of apertures in the top and bottom walls

2

thereof. The carton is also provided with means for interlocking with a similar carton whereby the cartons will remain in alignment when they are stacked. For shipping, a number of cartons may be stacked in interlocking arrangement, covers fitted over the top and bottom of the stack to close the apertures therein, and the completed stack bound with steel straps or the like, forming a strong and inexpensive shipping package which will rigidly support the packages of yarn against rubbing and damage.

The carton of this invention is particularly adapted for storing and shipping yarn packages in which the yarn is wound into the form of a cone on a support which comprises a hollow member of generally tapered shape. When said cones of yarn are placed in the carton, the top and/or the bottom of the yarn package supports will protrude from the carton. Then, when the cartons are stacked, the tops of the yarn package supports in one carton will nest in the bases of the yarn package supports in the carton above, assisting further in aligning the cartons and maintaining their alignment.

A preferred embodiment of this invention of a carton for storing and shipping cones of yarn is illustrated in the accompanying drawings in which

Fig. 1 is a plan view of a blank from which the carton is produced,

Figs. 2, 3 and 4 are perspective views showing the successive steps in setting up the carton,

Fig. 5 is a perspective view showing how the cartons are stacked,

Fig. 6 is a perspective view of a stack of cartons bound for shipment, and

Fig. 7 is a detail cross-sectional view, on an enlarged scale, showing the nesting of the cartons and the cones of yarn.

Referring now to the drawings, the reference numeral 11 designates a blank, which may be cut from corrugated board, cardboard, or any other suitable material by means of a die of the desired configuration. The cutting die may also have means to impress fold lines into the blank or these lines may be impressed in a subsequent operation, as is well known in the art. The blank 11 comprises a rectangular portion 12 extending the full length of said blank, which, when bent along fold lines 13, 14 and 15, forms the side walls 16, 17, 18 and 19 of the carton. Integrally connected to the side-walls 16 and 18 along fold lines 21 and 22 are rectangular flaps 23 and 24, which are shorter than said side-walls. Similarly, rectangular flaps 25, 26, 27 and 28 are inte-

3

grally connected to the side-walls 16, 17, 18 and 19 along fold lines 29, 31, 32 and 33. Each of the rectangular flaps 23 and 24 is provided with a plurality of regularly disposed apertures 34 of a diameter slightly larger than the base of the yarn package supports of the cones to be packed therein. Similarly, each of the rectangular flaps 25 and 27 is provided with a plurality of regularly disposed apertures 35 of a diameter slightly larger than the top of the yarn package supports of the cones to be packed therein and somewhat smaller than the diameter of the aperture 34. The apertures 34 and 35 are positioned so as to be in vertical alignment when the carton is set up to support the cones of yarn.

To set up the carton of this invention, which is indicated generally by reference numeral 36, the blank 11 is bent into a rectangle along the fold lines 13, 14 and 15 as shown in Fig. 2. Thereafter, the rectangular flaps 23 and 24 are bent inwardly along the fold lines 21 and 22 as shown in Fig. 3 to form the bottom wall of the carton. Since the flaps 23 and 24 are shorter than the side-walls 16 and 18 to which they are connected, slots 37 will be formed between said flaps and the lower edge of the side-walls 17 and 19. After the bottom wall of the carton has been formed, the cones of yarn, indicated generally by reference numeral 38 (Fig. 7), are packed therein. The cones 38 each comprise a tapered, hollow yarn package support 39 having a base 41 of larger diameter than its top 42, and having a yarn winding 43 positioned thereon. The cones 43 are set into the carton 36 with the base 41 of the yarn package supports 39 engaging the apertures 34. When the carton 36 is fully packed, the rectangular flaps 25 and 27 are bent inwardly along the fold lines 29 and 32 as shown in Fig. 4 to form the top wall of the carton, with the apertures 35 engaging the tops 42 of the yarn package supports 39 to support the cones 38 rigidly. If desired, the carton may be reinforced and sealed by means of strips of gummed paper or tape, staples, or the like.

For shipping, a plurality of cartons 36 are stacked with the rectangular flaps 26 and 28 entering the slots 37 to align the cartons properly, and with the tops 42 of the yarn package supports 39 in one carton nesting into the bases 41 of the yarn package supports in the carton above. The stack is then sealed at its base with a cover 44 of corrugated board or the like and at its top with a cover 45 of similar material. The completed stack is then bound with a steel strap 46, whose ends are fastened with a seal 47 to form a strong and inexpensive shipping package.

Where a plurality of cartons are to be stacked together for shipment, the first carton is prepared and loaded as indicated in the preceding paragraph. The cartons which are to be superposed on said first or bottom carton are prepared by first folding the blank to form the bottom wall of the carton and interlocking the same with its predecessor carton. The cones are then placed in the apertures provided therefor and the carton finished and closed.

As shown in the drawings, the rectangular flaps 23 and 24, which have a combined width approximately equal to the length of the side wall 17, are not of equal width, the flap 24 being narrower than the flap 23. The use of flaps of unequal width is preferable wherein an odd number of rows of cones, or other packages of

4

yarn, are to be packed in a single carton, since it permits each of the apertures 34 to engage the central row of cones to be formed entirely from one or the other of said flaps, with one flap having an even number and the other flap an odd number of rows of apertures therein. On the other hand, if the flaps were of equal width, the apertures that engage the central row of cones would lie on the meeting line of the flaps and would have to be formed from both flaps, producing a less rigid support for the cones. The flaps 25 and 27, which also have a combined width approximately equal to the length of the side wall 17 of the carton, are similarly of unequal width to permit each of the apertures 35 extending therethrough to be formed entirely from one or the other of said flaps.

It is to be understood that the foregoing detailed description is given merely by way of illustration and that many variations may be made therein without departing from the spirit of my invention.

Having described my invention, what I desire to secure by Letters Patent is:

A carton comprising a pair of flaps of unequal width extending from the lower edge of two opposite side walls and forming a bottom cover for said carton, said top flaps lying in a common plane with their opposed free edges in substantially abutting relation, said bottom cover being spaced from the edges of the other two opposite side walls to form slots, a pair of flaps of unequal width extending from the upper edge of two opposite side walls and forming a top cover for said carton, said bottom flaps lying in a common plane with their opposed free edges in substantially abutting relation, the narrower of each of said pairs of bottom and top cover flaps, having an odd number of rows of longitudinally aligned apertures therein and the wider of each of said pairs of the bottom and top cover flaps having an even number of rows of longitudinally aligned apertures therein, and a pair of flaps attached to the upper edge of the other two opposite side walls, said latter pair of flaps extending from the top of said carton and being thinner and narrower than said slots to be received within the slots of a similar carton for interlocking the two cartons.

ALVIN B. STOREY.

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