April 19, 1955 W. F. CARAHER 2,706,593

SHIPPING CASES FOR RAYON

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Fig. 2.

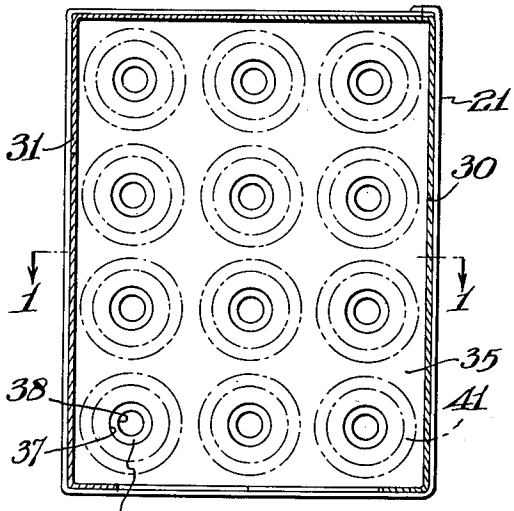


Fig. 1.

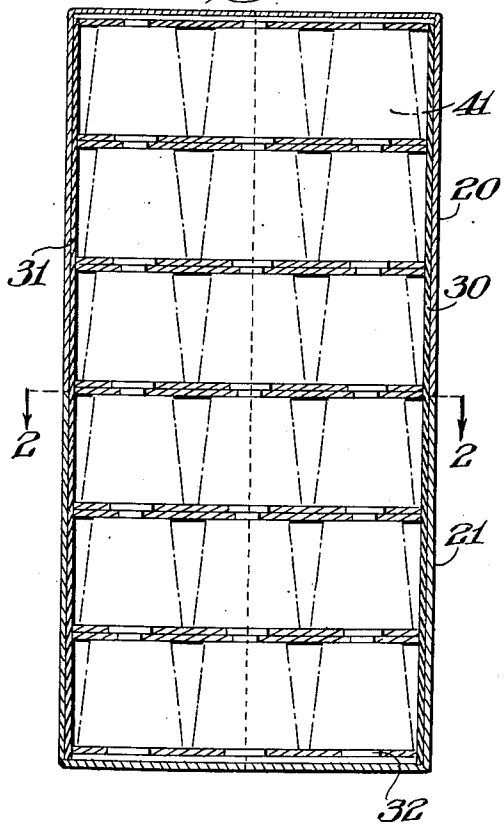
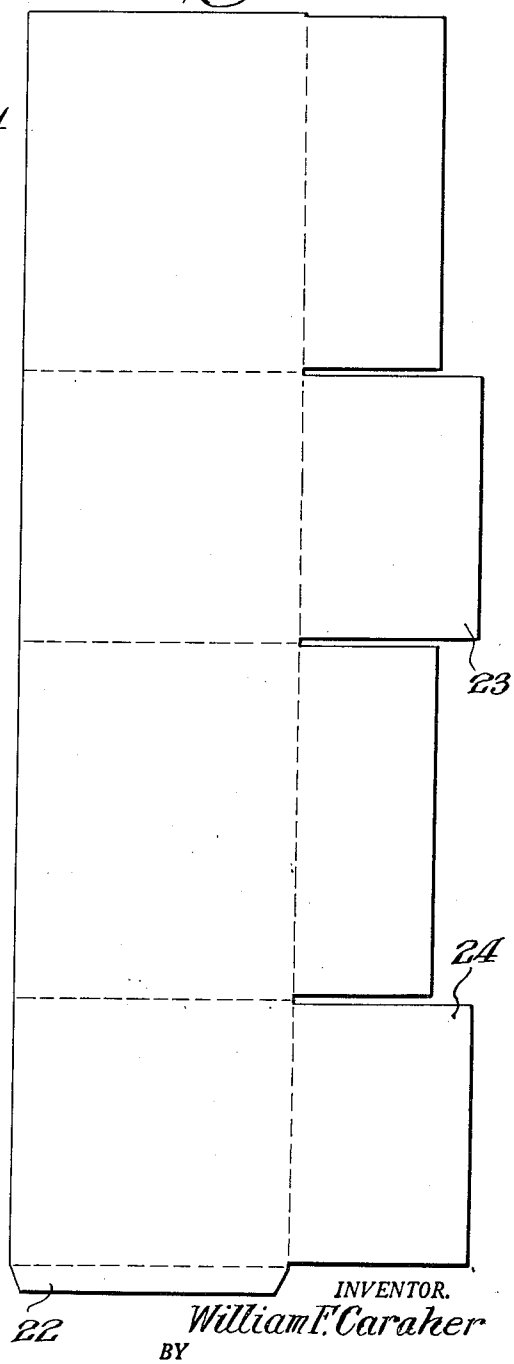


Fig. 3.



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Fig. 4.

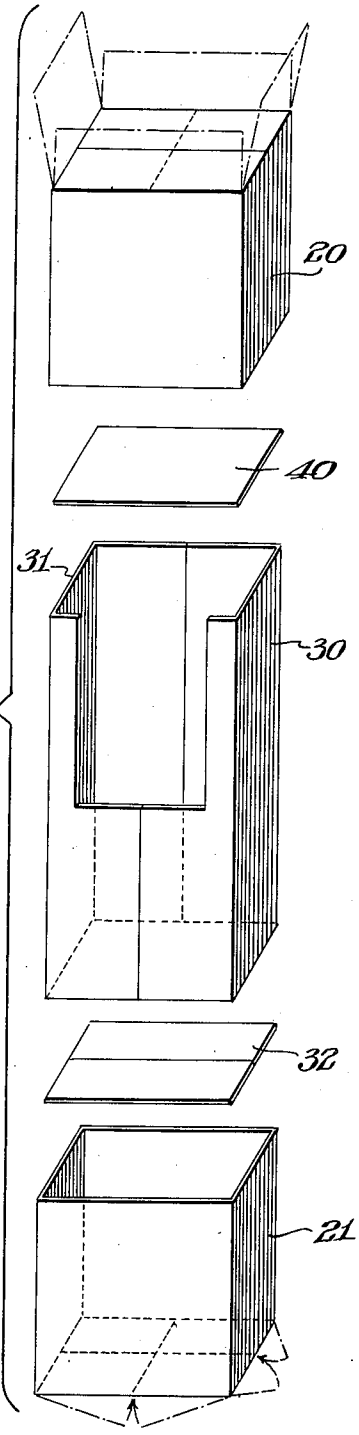


Fig. 5.

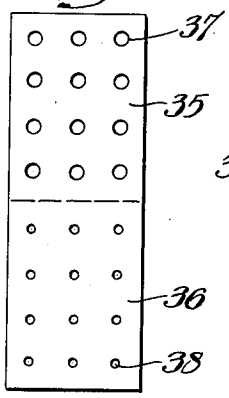


Fig. 6.

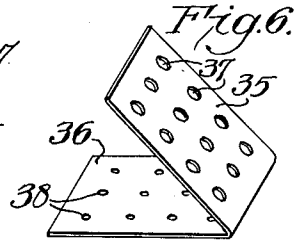


Fig. 7.

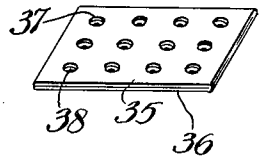
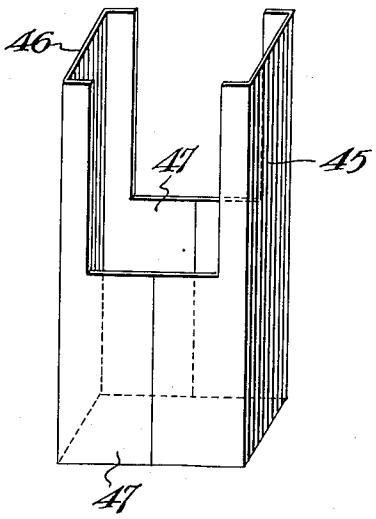


Fig. 8.



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United States Patent Office 2,706,593 Patented Apr. 19, 1955

2,706,593

SHIPPING CASES FOR RAYON

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Application February 16, 1951, Serial No. 211,225

1 Claim. (Cl. 229—23)

This invention relates to shipping cases for rayon yarn, and is more particularly concerned with large size, heavy-duty, corrugated paperboard, or fiberboard cases for shipping rayon packages such as cones, cakes and skeins.

It is an object of the present invention to provide a large size, unusually strong shipping case for rayon yarn which is conveniently shipped in knocked-down condition and readily and quickly assembled, has solid corners or edges where surfaces meet at 90°, and is provided with a liner which has now horizontal score lines and no taped, stitched or cut away corners. A further object is to provide such a shipping case, the component parts of which are of sufficiently small size to be shipped flat without folding scorelines 180°, thus avoiding weakened, rough or uneven corners, and the corrugations can run in either direction on the sheets for maximum strength. Another object is to provide such a shipping case which can readily be packed and unpacked in crowded places, even though the total depth is nearly twice the operator's reach and without any parts of the case protruding during the packing or unpacking operation. Other objects of the invention will become apparent from the following description, the drawings and the claim.

In the drawings, which illustrate embodiments of the invention,

Figure 1 is a sectional front elevation of a completed, filled shipping case, with the section taken on line 1—1 of Fig. 2,

Figure 2 is a corresponding sectional top view, with the section taken on line 2—2 of Fig. 1,

Figure 3 is a plan view of a blank used to form one of the two parts forming the outside of the case,

Figure 4 is an exploded perspective view showing the parts of the case of Fig. 1 in relationship for assembly,

Figure 5 is a plan view of a layer board blank used for packing cones in the case,

Figures 6 and 7 show how the layer board blank of Fig. 5 is folded for use,

Figure 8 is a perspective view of a modification of the liner shown in Fig. 4.

In the form of shipping case shown in Figures 1 to 4, the outside of the case **20**, **21** is formed from the two blanks of the type shown in Fig. 3. These blanks are standard cartons known in the trade as "special half slotted." Similar blanks known in the trade as "regular half slotted" may be used when a square-bottomed case is desired. As shown at **21** in Fig. 4, all the flaps meet so as to form a double thickness of corrugated board protection at the bottom of the case. The upper outer **20** is like the lower outer **21**, except that the two blanks are preferably mirror images so that stitched joints will align when the case is assembled.

The bottom **21** is completely assembled, as shown in Fig. 4, with the flap **22** stitched in place and the flaps **23**, **24** of the blank shown in Fig. 3, stitched, taped or glued shut. The liner shown in the middle of Fig. 4 is inserted into the outer case **21**. The liner is formed of two halves **30**, **31**, the blanks for which are identical. The blanks are cut away as shown so that an opening is provided in one side of the assembled liner to facilitate packing and unpacking the case. Since these cases will ordinarily have considerable height, e. g., sufficient height to accommodate six or more layers of cones as shown in Fig. 1, this cut away portion is shown as extending down to the top of the bottom outer **21**. The size of the cut away portions may suitably be such that the two pieces

may be taped together and used as the bottom pad **32**, indicated in Fig. 4.

The liner is so designed that there are no horizontal score lines to weaken the case and the liner has no taped, stitched, or cut away corners, which would also weaken the case. Since the liner is not taped or stitched and is in two pieces, the liner is shipped flat without folding prior to assembly. This is important because folding corrugated board through 180° causes rough and uneven corners in subsequent use. In assembling the liner, it is not folded more than 90°, and this gives even and smooth corners which facilitate packing and permit closer tolerances between liner and layer boards or cartons packed in the case.

By the liner being in two pieces, its dimensions can be such that it can be snapped into place, thereby permitting a much closer fit between the liner and the outer case. This is a definite structural advantage. Furthermore, the size of the two pieces are such that the corrugations can run either way of the sheet, thereby making it possible to design the case for maximum strength in either direction.

The design of the liner permits packing or unpacking without any part of the case protruding. Protuberances are a nuisance and may even be a safety hazard under some conditions especially in crowded places. The design also permits unpacking the case upside down without difficulty. For some special contents, it is not even necessary to completely open the top for unpacking. The top can be raised sufficiently to permit access to the contents throughout the opening in the front of the liner.

After the liner **30**, **31** is inserted into the bottom outer **21**, a bottom pad **32** is placed inside to lock the two halves of the liner in position. The shipping case is then ready for packing. If cones of yarn are to be packed, layer board blanks of the type shown in Fig. 5 may be used to keep the cones properly spaced. They consist of two halves **35**, **36** which are folded together for use as shown in Figs. 6 and 7. One half **35** is die cut with holes **37** of suitable size to accommodate the larger end of the cone spindle, and the other half **36** is die cut with smaller holes **38** to accommodate the smaller end of the spindle. The solid corners of the liner furnish a definite and restricted location for these layers boards so that they act as struts, making the case unusually strong and rigid.

When the shipping case is filled, a top pad **40** is placed on the contents within the liner. The top outer **20** is slid down about the liner until it rests on top of the bottom outer **21**. The top and bottom outers are taped together around the middle of the case. The appearance of the assembled shipping case, filled with yarn cones **41**, is shown in Fig. 1. The outside of the case is completely smooth which does not create a handhold, or a surface which can be snagged, torn loose or act as a trap for dirt, water, etc.

Fig. 8 shows a modified form of liner which is more desirable for special purposes such as two-way loading or unloading, or where economy or lighter tare weight are desired. When assembled in the bottom outer, the front resembles the liner shown in Fig. 4. It differs in having the back side cut away for easy access in the same way as the front. Thus each of the two blanks forming liner sides **45**, **46** has a rectangular piece cut out of each flap **47**.

Since further variations in the embodiments of the invention will be suggested by the above disclosure, the invention is limited only by the scope of the following claim.

What is claimed is:

A large size paperboard shipping case for yarn packages suitable for packing and unpacking at least six layers of yarn cones readily by an operator in a crowded place which comprises an outer lower portion of the case formed of a one-piece standard "half-slotted" carton of sufficient depth to accommodate three layers of yarn cones, two substantially identical U-shaped liner members fitted snugly within said carton with the legs of the U's in abutting relationship to line the four sides of the carton, the lengths of said legs being slightly greater than one-half the inside dimension of the adjacent sides of the carton

uch that the legs are snapped into position within the arton, the height of said liner members being twice the nside depth of said carton, each of said liner members aving two folds only which are folded only 90° to pro- ide solid, even, reinforcing corners at the four vertical orners of the case, a bottom pad fitted snugly inside said iner members within the carton so as to lock the liner nembers in position, said pad being cut from an upwardly xtending face of the liner members so as to provide an pening through the liner to facilitate packing and un- acking the case, the cuts for said opening being in the pper half of the liner and extending only part way to aid 90° folds to keep the corners strong, a top pad of the ame dimensions as said bottom pad arranged to keep he upper ends of said liner members in position, and an pper standard "half-slotted" carton of the same dimen- ions as said lower carton telescoped over the upper ends

of said liner members to meet the lower carton in abutting relationship and complete the outer portion of the case.

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