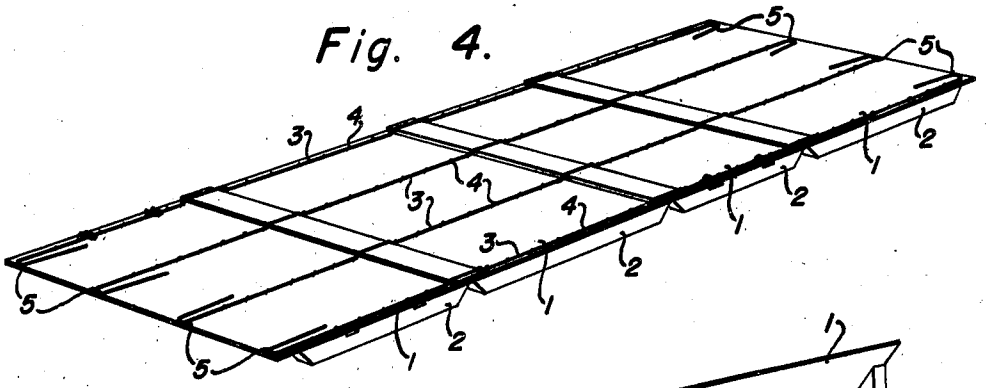
Sept. 7, 1943. Q. W. BOESÉ 2,329,170

BOX

Filed Jan. 4, 1941

Fig. 4.



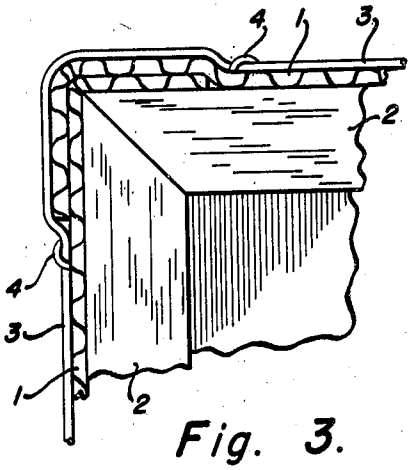


Fig. 3.

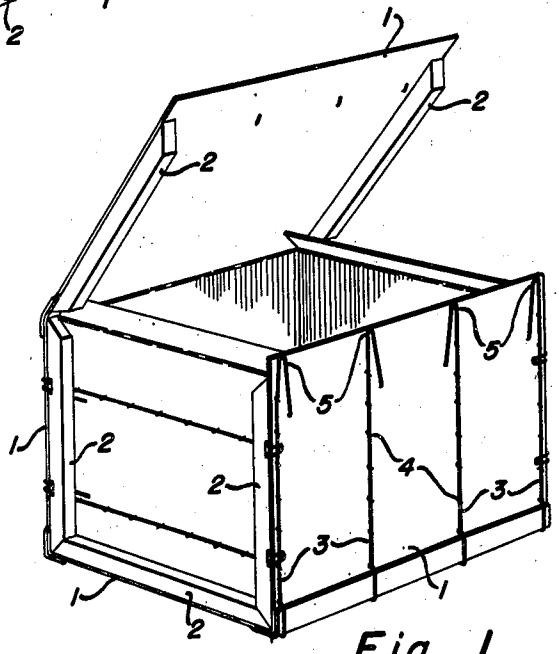


Fig. 1.

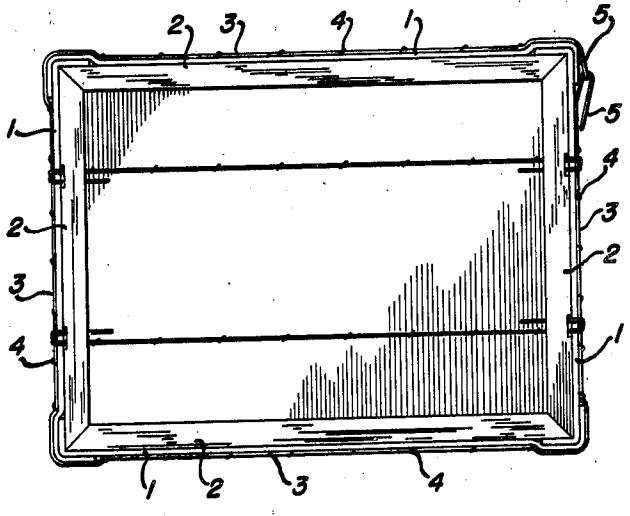


Fig. 2.

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2,329,170

BOX

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Application January 4, 1941, Serial No. 373,113

6 Claims. (Cl. 217—12)

This invention relates to boxes, and particularly to wirebound fiberboard boxes.

Among other objects, the invention is intended to provide a strong and dependable wirebound fiberboard box; to provide a wirebound fiberboard box that is light in weight and economical to manufacture; to provide a wirebound fiberboard box that is flexible and elastic; to provide a sectional wirebound fiberboard box that has tight corners; to provide a wirebound fiberboard box so constructed and arranged as to increase the resistance of the fiberboard to stresses and strains at the points where it is subjected to the greatest stresses and strains; and generally to provide a balanced wirebound fiberboard box strong enough at all points to carry its load and not excessively strong at any point.

As conducive to a better understanding of this invention, it should be noted that in prior wirebound fiberboard box constructions such as that shown in United States Patent Number 1,334,271, dated March 16, 1920, encircling binders and a sheet of fiberboard side material bent integrally over the box corners were stapled to end cleat frames. In such construction, the fiberboard extending integrally over the box corners resisted initial relative longitudinal shifting of adjacent box sides under stresses and strains, but continued or increased stresses and strains caused the fiberboard at box corners to shear or tear along the corner lines. Also, the single thickness of fiberboard at the box corners frequently failed to resist biting in of the tensioned wire bindings and destructive blows to which a box corner is subjected in rough handling. The present invention is intended to remove the foregoing deficiencies in the box of said patent by providing a sectional wirebound fiberboard box reenforced at box corners and adapted to flex under stresses and strains without shearing or tearing the fiberboard.

I am aware of another sectional wirebound fiberboard box in which the corner edges of the sections are reenforced by turning the fiberboard edges under to provide a double thickness of fiberboard along the corner edges of the box. This construction is an improvement over the box shown in said Patent Number 1,334,271 in that it provides the necessary reenforcement at the corner edges of the box and permits one section of the box to shift relative to an adjacent section to avoid shearing or tearing of the fiberboard at box corners, but leaves an opening along the corner edges of the box. The present invention is intended to remove this deficiency by overlapping the edges of adjacent sections of fiberboard. Such an overlapping provides a double thickness of fiberboard along box corners, preserves the sectional characteristics of the box which permits one section to shift relative to an adjacent section, and at the same time provides a tight corner.

One illustrative embodiment of the invention is shown in the accompanying drawing in which:

Figure 1 is a perspective view of a box embodying the invention, with the lid or cover section partly raised.

Fig. 2 is an enlarged end view of the box, with the lid or cover section in closed position.

Fig. 3 is a partial view, on an enlarged scale, of the upper rear corner of the box, showing a double overlapping of the fiberboard at the box corner.

Fig. 4 is a perspective view of a box blank, showing the manner in which the box is shipped in the flat to the box user.

The illustrative fiberboard box shown in Fig. 1 comprises four separate side sections and two end sections. Each side section comprises a sheet of fiberboard 1, preferably corrugated fiberboard, and end cleats 2. Each sheet of fiberboard 1 extends beyond each cleat end a sufficient distance to overlap the adjacent sheet of fiberboard at box corners, as best shown in Fig. 3. The end cleats 2 of the several sections form a cleat frame at each end of the box. The four side sections are connected together in foldable relationship by flexible binders 3, preferably wires. The outside binders 3, which overlie the cleats 2, are secured to the fiberboard sheets 1 and cleats 2 by staples 4 which straddle the binder, pass through the fiberboard sheet, and anchor in the cleat. The intermediate binders 3 are secured to the fiberboard sheets by staples 4 which pass through the side sheet and are clinched in the under surface of the side sheet.

The ends of the binders 3 preferably terminate in loops 5, which may be hooked together at the closing corner edge of the box to close the box, as shown in Fig. 2.

The end sections are similar to those shown and described in United States Patent Number 2,190,199 of February 13, 1940, and are attached to the box in the manner described in said patent and as shown in Figs. 1 and 2.

The box may be made on a well-known stapling machine, which staples the binders 3 to the side sheets 1 and cleats 2 to produce a flat box blank of the character shown in Fig. 4. The end sections are prepared on a similar stapling machine

and are partially attached to the box blank before it is shipped to the box user, in the manner described in said United States Patent No. 2,190,199. A number of these flat blanks are usually bundled together for shipment to the box user.

To provide the box of this invention with maximum flexibility and elasticity, the staples 4 should not be driven through the overlapping portions of the side sheets. When the overlapping portions of adjacent side sheets are free of attachment to each other, they can shift relative to each other under stresses and strains without tearing of the side sheets.

The term "fiberboard" will be understood as including other material of a similar character suitable for box siding, which tends to crumple or crush rather than break under distorting pressures.

It will be understood that the invention is not to be limited to the specific embodiment shown herein for illustration.

I claim:

1. A wirebound fiberboard box comprising four separate sections of fiberboard side material and end cleats connected together by wires tensioned over box corners and stapled to the side material and the cleats, the edges of adjacent sections of fiberboard side material extending over box corners in overlapping relationship to provide a double thickness of side material lengthwise box corners to strengthen the corners and resist the pressure of the tensioned wires, and the overlapping portions of the fiberboard side material being free of attachment to each other.

2. A wirebound fiberboard box comprising four separate sections of fiberboard side material and end cleats connected together by wires tensioned over box corners and stapled to the side material and the cleats, the edges of adjacent sections of fiberboard side material extending over box corners in overlapping relationship to provide a double thickness of side material lengthwise box corners to strengthen the corners and resist the pressure of the tensioned wires, and adjacent sections of the box being connected together only by the connecting wires.

3. A wirebound fiberboard box comprising a plurality of separate sections of fiberboard side material and end cleats connected together by flexible binders, the edges of adjacent sections of fiberboard side material extending over box corners in overlapping relationship, and the overlapping portions of fiberboard side material being free of attachment to each other.

4. A wirebound fiberboard box comprising a plurality of separate sections of fiberboard side material and end cleats connected together by flexible binders, the edges of adjacent sections of fiberboard side material extending over box corners in overlapping relationship and being connected together only by the flexible binders.

5. A wirebound fiberboard box blank comprising a plurality of separate sections of fiberboard side material and cleats connected together in foldable relationship by flexible binders secured to the side material, the edges of adjacent sections of side material being in overlapping relationship to provide tight corners and a double thickness of side material lengthwise the box corners when the box blank is folded into box form and the overlapping edges of side material being free of attachment to each other.

6. A wirebound fiberboard box blank comprising a plurality of separate sections of fiberboard side material and cleats connected together in foldable relationship by flexible binders secured to the side material and the cleats, the edges of adjacent sections of side material being in overlapping relationship to provide a tight corner and a double thickness of side material along the box corners when the box blank is folded into box form, and the several sections of the blank being connected together only by the flexible binders.

QUINCY WARD BOESÉ.