Feb. 16, 1932. A. L. ROSENMUND 1,845,194

BOX AND CRATE

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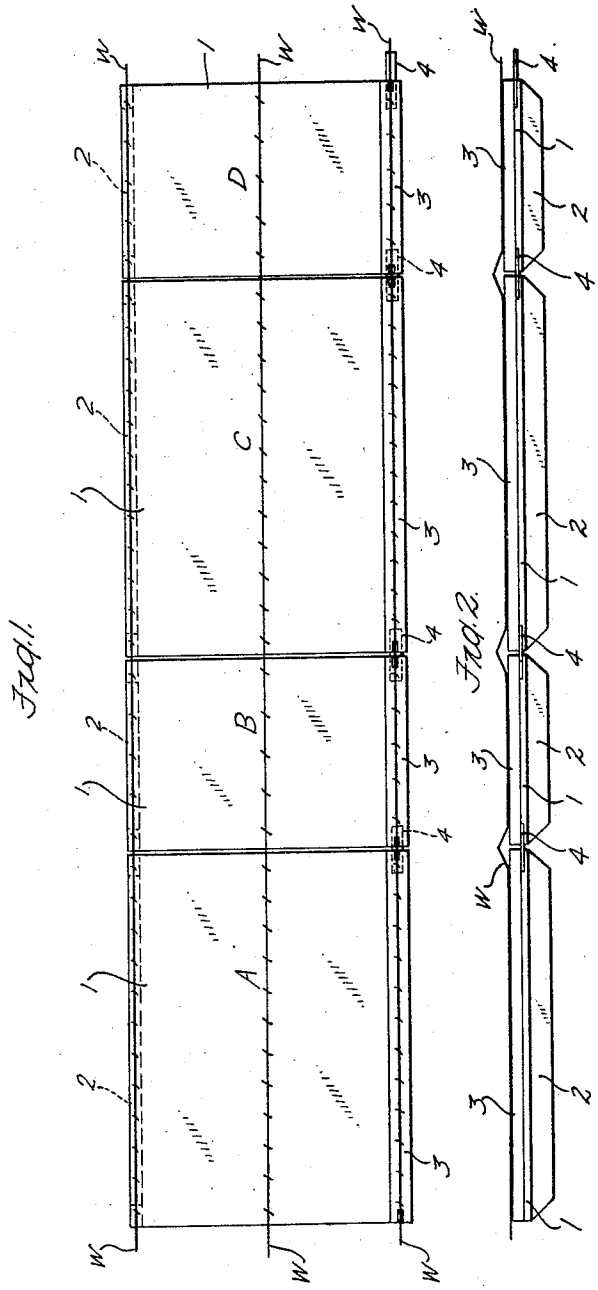


Fig. 1.

Fig. 2.

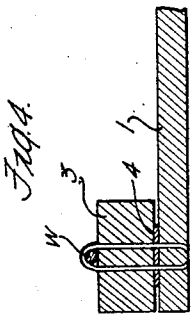


Fig. 4.

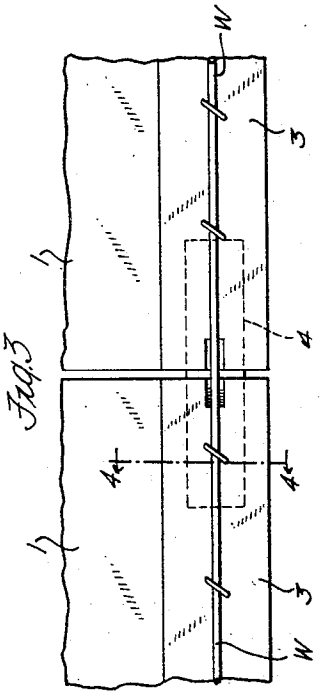


Fig. 3.

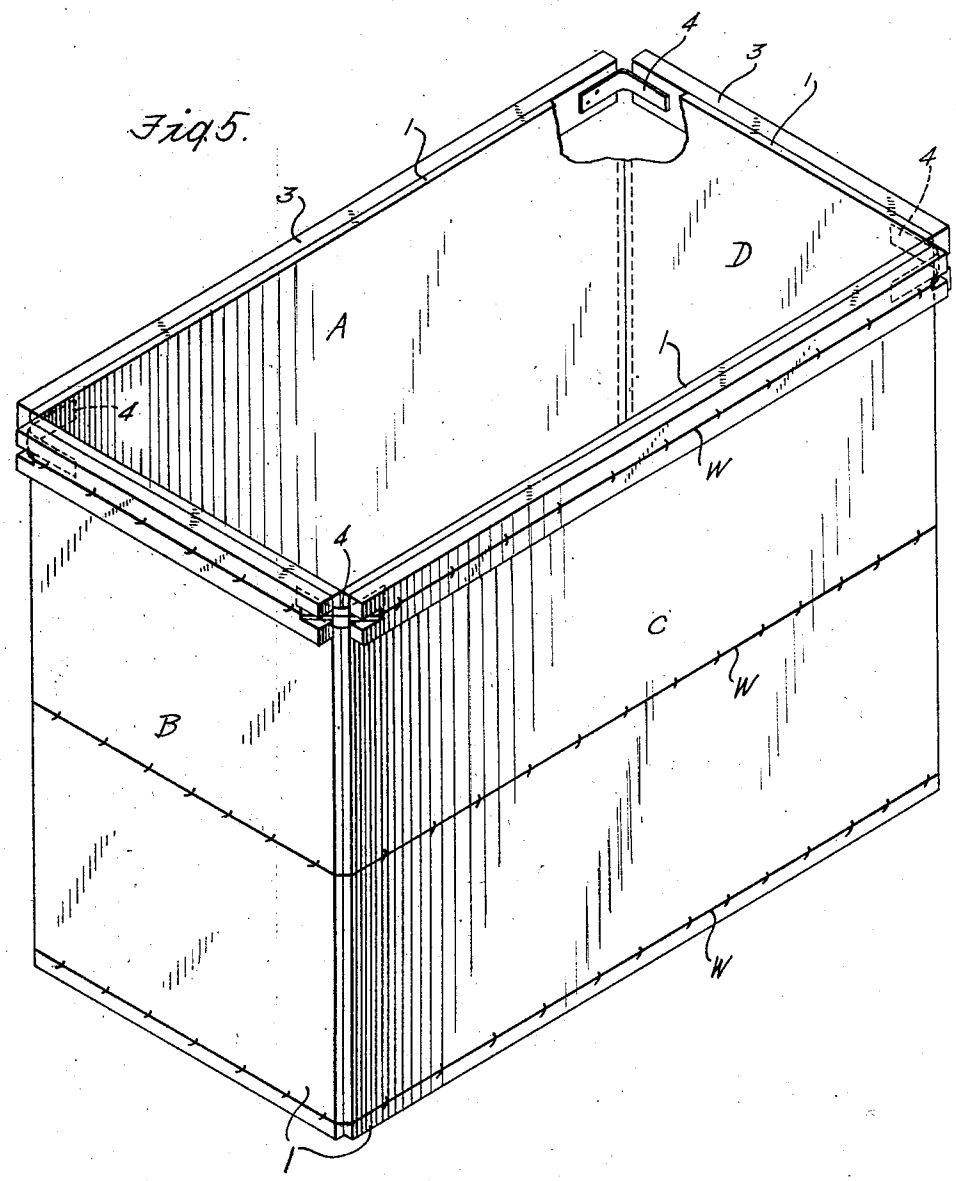
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Fig. 5.



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UNITED STATES PATENT OFFICE

ALFRED L. ROSENMUND, OF ROCKAWAY, NEW JERSEY, ASSIGNOR TO STAPLING MACHINES CO., A CORPORATION OF DELAWARE

BOX AND CRATE

Application filed May 21, 1929. Serial No. 364,781.

This invention relates to boxes and crates and particularly to sectional wirebound boxes and crates.

Among other objects the invention is intended to provide certain improvements contributing to the strength and rigidity of box and crate structures, particularly of the sectional wirebound type; said improvements being hereinafter described and claimed.

The invention will be clearly understood by reference to one illustrative embodiment thereof shown in the accompanying drawings in which:

Figure 1 is a top plan view of a wirebound sectional box blank embodying the invention.

Figure 2 is a side elevation of the same.

Figure 3 is an enlarged top plan view of a portion of the box blank of Figure 1.

Figure 4 is a sectional view taken on the line 4—4 of Figure 3.

Figure 5 is an enlarged perspective view of the box blank of Figure 1 folded into box form; certain parts being broken away for clearness of illustration.

The box selected for illustration is of the wirebound type having a smooth inner surface free from projections.

The illustrative box blank as shown in Figures 1 and 2 comprises four separate sections, A, B, C and D, foldably connected by wires W to provide, when folded, the four sides of a wirebound box. Each section comprises a sheet or sheets of side material 1, an interior cleat 2 secured to the side material at one end of the section, and an exterior cleat 3 secured to the side material at the other end of the section. The ends of exterior cleats 3 are preferably grooved, and the wire W which overlies the exterior cleates is preferably bowed over the intervals between adjacent exterior cleat ends to facilitate folding the box blank from the flat into box form.

When the blank is folded into box form the ends of the wires W are joined by intertwisting or otherwise, to complete the wire binding and retain the sections in box form. When in box form, the interior cleates 2 form a supporting frame at the bottom of the box to receive a bottom section placed thereon and to resist bulging and inward displacement of the side material at the bottom of the box, and the exterior cleats 3 serve as a support for a cover section and also to resist bulging of the side material at the top of the box. Exterior cleats 3, however, do not offer sufficient resistance to inward displacement of the side material at the top of the box. To prevent such inward displacement and to increase the rigidity of the box, metal bands or strips 4 are provided at the upper corners of the box, as shown in Figure 5. Said metal bands or strips are located between the side material 1 and the exterior cleats 3 and extend over the intervals between sections. The frictional contact between the side material and the exterior cleats is usually sufficient to hold bands 4 in position, but, they may be stapled to the side material and exterior cleats by one or more staples.

The metal bands 4 are usually incorporated in the structure at the time of the assembling and wiring of the materials for the box blank. Such assembling and wiring operations are usually performed on a box blank machine which positions and feeds the assembled box parts to stapling mechanism for the wire applying operation. The metal bands 4 may be placed in position between the side material and the cleats and fed therewith to the stapling mechanism.

When the box blank is folded from the flat into box form, the metal bands 4 which extend over the intervals between adjacent sections of the blank are bent over the corner edges of the side material, as shown in Figure 5, and that portion of the metal band 4 which extends beyond the edge of section D of the box blank is bent and inserted between the side material and the exterior cleat of section A. The metal bands thus positioned and incorporated in the box structure, strongly resist any tendency of one section of side material to shift inwardly under strain and increase the rigidity of the whole structure.

I claim:

1. A foldable box blank comprising a plurality of separate sections of side material and cleats connected together in foldable relationship by flexible binders, and a flexible

band extending over an interval between adjacent cleat ends and having each of its ends located between the side material and a cleat of a section.

2. A foldable box blank comprising a plurality of separate sections of side material and exterior cleats connected together in foldable relationship by flexible binders, with the exterior cleats located between the side material and a flexible binder, and a flexible band extending over an interval between adjacent exterior cleat ends and located between the side material and the exterior cleats.

3. A box or crate comprising a plurality of separate sections of side material each provided with a reenforcing cleat, an encircling binder secured to said sections, and a flexible band bent over a corner of the box or crate in line with the cleats and located between the side material and the cleats.

4. A box or crate comprising a plurality of separate sections of side material each provided with an exterior cleat, an encircling binder overlying the exterior cleats and secured to said cleats and the sections of side material, and a flexible band bent over a corner of the box or crate in line with the cleats and binder and located between the side material and the cleats.

5. A box or crate comprising a plurality of separate sections of side material connected together by encircling binders secured thereto, each said section being provided with an interior cleat at one end and an exterior cleat at the other end, and a flexible band bent over each corner of the box in line with the exterior cleats and located between the side material and the exterior cleats.

6. A foldable box blank comprising a plurality of separate sections of side material and exterior cleats connected together in foldable relationship by flexible binders, with the exterior cleats located between the side material and a flexible binder, and a metal band extending over an interval between adjacent sections of the side material in line with the cleats and located between the side material and the exterior cleats.

In testimony whereof, I have signed my name to this specification this 11th day of May, 1929.

ALFRED L. ROSENMUND.