A. STURROCK.

WIRE BOUND BOX.

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1,086,241.

Patented Feb. 3, 1914

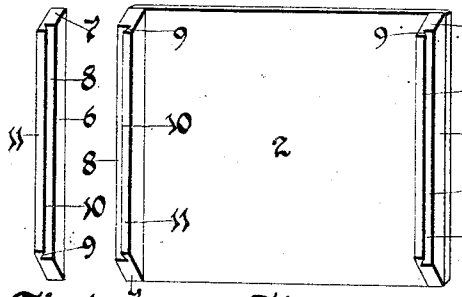


Fig. 1.

Fig. 2.

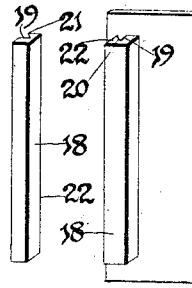


Fig. 3.

Fig. 4.

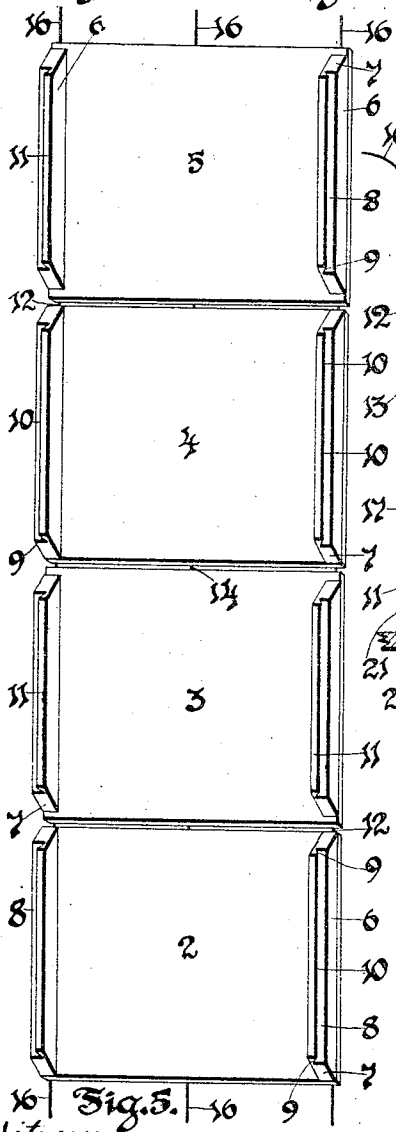


Fig. 5.

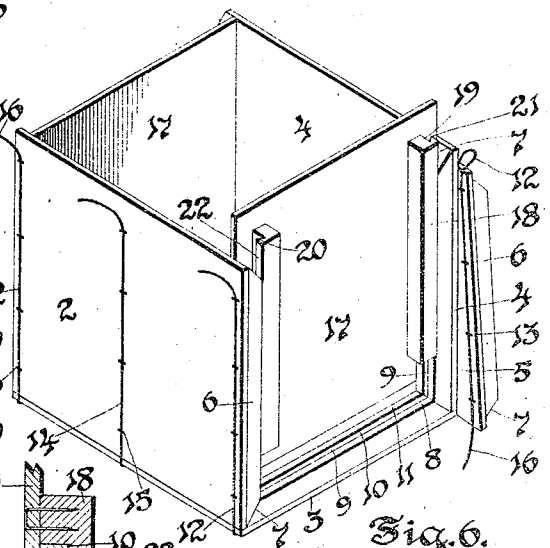


Fig. 6.

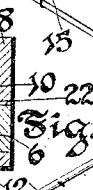


Fig. 7.

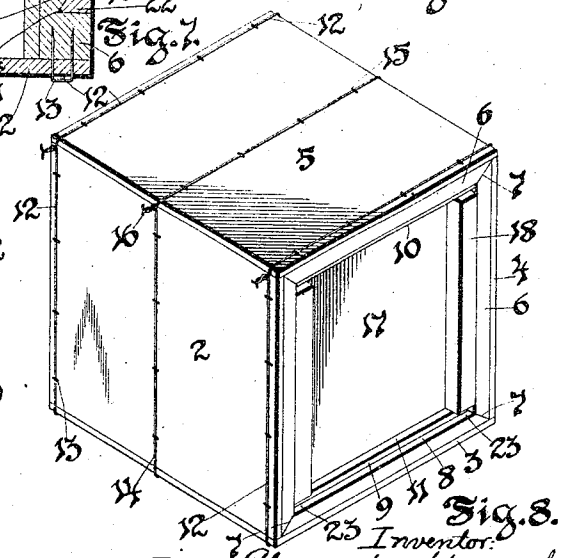


Fig. 8.

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UNITED STATES PATENT OFFICE.

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WIRE-BOUND BOX.

1,086,241. Specification of Letters Patent. Patented Feb. 3, 1914.

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To all whom it may concern:

Be it known that I, ALEXANDER STURROCK, a subject of the King of Great Britain and Ireland, residing at Lorimer street, in the city of South Melbourne, a suburb of the city of Melbourne, in the county of Bourke, State of Victoria, Commonwealth of Australia, have invented certain new and useful Improvements in Wire-Bound Boxes, of which the following is a specification.

This invention relates to that type of wire-bound box formed from sheets suitably spaced apart and united by binding wires, with two cleats secured to each of the sides or sheets.

It is a very old practice to produce sectional box blanks capable of being folded or wrapped around two box ends. Usually with foldable blanks after three sides or sections of the blank have been wrapped around the two box ends, the said ends are stapled to some or all of the cleats of the said three sides. While the ends, it is true, may be thereby securely retained in position, the box cannot accurately be said to be a "knockdown" box as it cannot be quickly reconverted to the box blank state without damage to the box ends. It has also hitherto been thought necessary in many constructions, that the side cleats should interengage at their meeting ends and the said ends at their extremities have sometimes been step-mitered to effect this purpose.

The object of the present invention is to provide a box, having all the advantages of prior boxes, but cheaper to manufacture and simpler of construction.

The invention, lies chiefly in providing sliding ends which have cleats thereon interengaging and also interlocking with side cleats, in a simple and efficient manner. The end cleats and the side cleats are both cut from one length of material which greatly minimizes the cost of production. The said box also has many other advantages which will be immediately apparent to those acquainted with the art.

Referring to the drawings which form part of this specification:—Figure 1 is a perspective view of a side cleat. Fig. 2 is a perspective view of a side with two cleats, of the character seen in Fig. 1, in position. Fig. 3 is a perspective view of an end cleat. Fig. 4 is a perspective view of a box end with two cleats, of the character seen in Fig. 3, in position. Fig. 5 is a perspective view of a box blank according to this invention. Fig. 6 is a perspective view of a partly assembled box according to this invention. One sliding end is slightly elevated and the fourth side, (5) lid or top of the box is thrown back for illustrative purposes. Fig. 7 is an enlarged sectional plan view showing the interlocking of an end and a side cleat. Fig. 8 is a perspective view of a box assembled and complete as used for the transportation of goods.

The invention includes a plurality of side sheets. These comprise a first side 2, a second side 3, a third side 4, and a fourth side 5. The sides are preferably formed from thin lumber and may be of any desired size and area.

Attached to each side are two side cleats 6. Each cleat has each of its ends 7 beveled or mitered. The ends are quite plain. Formed in each cleat is a longitudinal instep, having a square surface 8 and an undercut or inclined surface 9. The undercut surface 9 provides an overhanging edge 10 and the said longitudinal inclined surface 9, and also the longitudinal square surface 8, may vary in width or depth. Formed by the instep of each cleat is a longitudinal retaining piece or projecting locking strip 11.

The cleats 6, attached to the first side 2, and the cleats 6 attached to the third side 4, it will be noticed extend from one edge of the side to which they are attached to the other. The cleats 6, attached to the second side 3 and the cleats 6 attached to the fourth side 5, however, it will be seen terminate short of each edge of the side to which they are attached for a distance equal to the thickness of the material forming the sides.

It will be seen that all of the cleats are of similar conformation. This is not absolutely necessary, but is incidental to them because it is cheaper to cut one long length of material into short sections instead of providing two or more different materials without attaining any better effects.

Uniting the side sheets 2, 3, 4 and 5, are binding wires. The two outer binding wires 12, are secured to the said sides by staples 13, which staples penetrate through the sides and thereby also retain the side cleats 6 as is usual. The intermediate binding wire 14, is secured to the sides by staples 15. If these penetrate through the sides the points are bent over inside the box. Each end of each binding wire projects beyond the extreme

edges of the box blank, forming wire extensions 16 as is also common to most box blanks.

With the foregoing are used two end sheets 17. Attached to each end sheet is a vertical square-ended end cleat 18. Each end cleat 18 is provided with a longitudinal instep having a square surface 19, and an undercut or inclined surface 20. The undercut surface 20 provides an overhanging edge 21, and formed by the instep is a longitudinal retaining piece or projecting locking strip 22. It will be seen that the end cleats terminate short of the top and bottom edges of the box ends for a distance equal to the full width of the side cleats. The said end cleats it will be further observed, are positioned upon the box ends inwardly from the side edges thereof for a distance approximately equal to the width of the side cleats. The end cleats are, it will also be observed, of the same section as the side cleats and are cut from the same length of material which effects a very great saving.

With this invention to assemble a box from the box blank condition, it is only necessary to lift the first side 2, so that it will rest upon the adjoining edge of the second side 3. The beveled ends 7 of the side cleats 6 of the two sides are then abutting against each other at one end as seen in Figs. 6 and 8. The third side 4 is now lifted upon the other edge of the second side 3 and the side cleats abut against each other at their other ends. An end sheet 17 has now to be placed in position. To effect this it is only necessary to aline the undercut surface 9 of the side cleats 6, with the undercut surface 20 of the vertical cleats 18. The end is then pushed downwardly and by the locking strips 11 and 22 is firmly held in position. The end, it will be noticed, provides an uninterrupted interior surface and reaches from the bottom to the top of the box. The other end of the box is similarly positioned. The box may now be filled when the fourth side 5 is closed down as seen in Fig. 8. The wire extensions 16 are now twisted together and prevent the box from opening. It will be seen from Fig. 8 that owing to the instep formed in the cleats of the second side 3, there is a finger space 23 provided beneath each end cleat 18. Should it be desired to convert the box back to the box blank state, after untwisting the wires and throwing back the lid or fourth side 5, the fingers may be inserted in the space 23 and by pressing upon the cleats 6 of the second side 3, the ends 17 of the box may be lifted upwardly. The said ends continue to slide upward until the cleats 18 have disengaged from the cleats 6. The sides of the box may then all be lowered to the horizontal plane.

Having now described my invention what I claim as new and desire to secure by Letters Patent is:—

1. A box comprising opposite side sheets each having grooved cleats on each end, each grooved cleat having a projecting locking strip on its face opposite the side sheet, said strip having its outermost face beveled; end sheets adapted to fit between the opposite side sheets and against the inner faces of the cleats thereon, and two end cleats secured to each end sheet and provided with locking strips on their opposite faces opposite the locking strips on the side cleats, said locking strips being beveled on their inner faces opposite to the bevels on the locking strips of the side cleats, the beveled edges of the locking strips on the end and side cleats interlocking to prevent lateral separation of the side sheets, substantially as described.

2. A box blank consisting of opposite side sheets, opposite cleats secured to the sheets adjacent their outer ends, said cleats having beveled locking strips 11 on their opposing faces, and two end sheets adapted to be placed between the opposed side sheets, and bear against the inner faces of the cleats attached thereto, and end cleats attached to the outer face of each end sheet and having beveled locking strips 22 on their opposite faces, the locking strips 11 of the cleats on the end pieces being adapted to engage the locking strips 22 of the cleats on the side sheets, when the end side sheets are inserted between the side sheets with top and bottom pieces provided with end cleats adapted to engage the outer faces of the end sheets between the cleats on the side sheets, all substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ALEXANDER STURROCK.

Witnesses:
CECIL MCLEASTRIN,
GEORGE A. M'REN.