No. 744,414. PATENTED NOV. 17, 1903.

J. SCHMIDT, JR.

METHOD OF MAKING BOXES.

APPLICATION FILED OCT. 4, 1900.

NO MODEL.

Fig. 4.

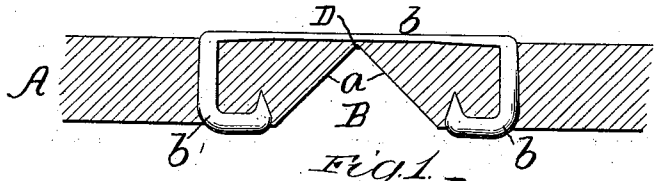


Fig. 1.

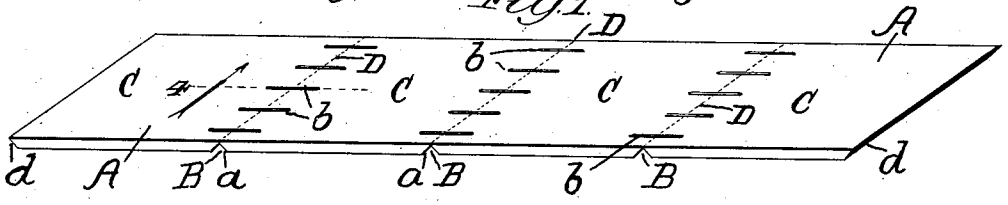


Fig. 2.

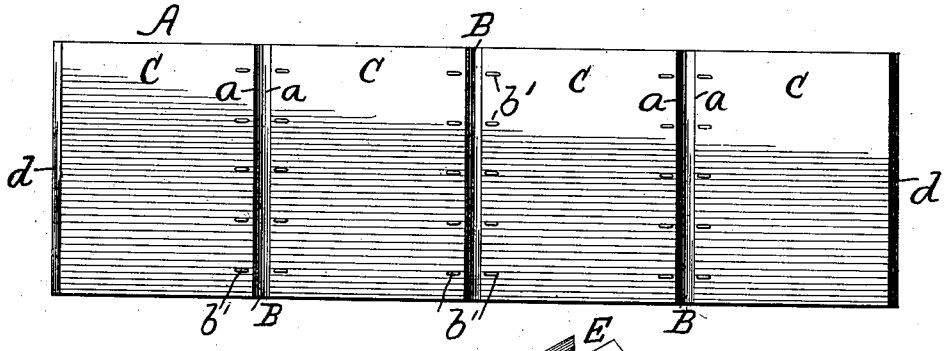
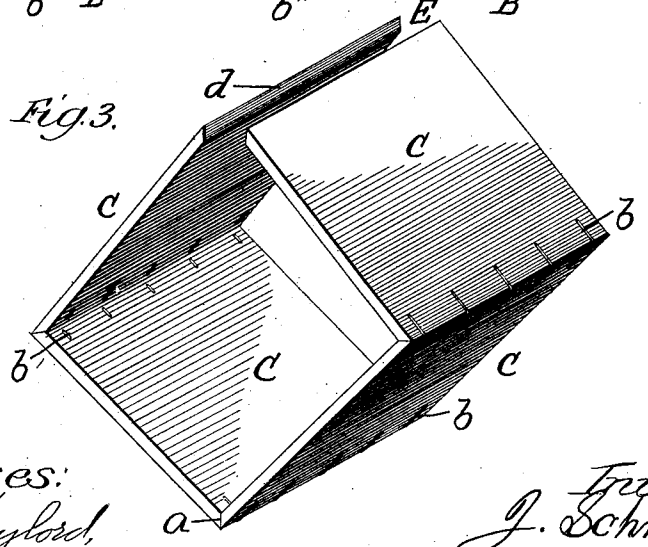


Fig. 3.



Witnesses:
Chas. E. Gaylord,
L. M. Freeman.

Inventor:
J. Schmidt Jr.
By L. B. Copeland & Co.
Attys.

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No. 744,414. Patented November 17, 1903.

UNITED STATES PATENT OFFICE.

JOSEPH SCHMIDT, JR., OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO JOHN L. FLANNERY, OF CHICAGO, ILLINOIS.

METHOD OF MAKING BOXES.

SPECIFICATION forming part of Letters Patent No. 744,414, dated November 17, 1903.

Application filed October 4, 1900. Serial No. 32,044. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH SCHMIDT, Jr., a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Methods of Making Boxes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improvement in the art of making boxes, shipping-receptacles, and the like, and has for its object to provide a method that will greatly facilitate the operation and at the same time produce a stronger and a more durable article of its kind than is possible under the ordinary arrangements.

This invention relates more especially to that part of a box structure usually termed the "frame" or "body," the top and bottom parts being added in the usual manner.

Ordinarily the frame of a box or like receptacle consists of four equal sides when square or two sides and ends when of a rectangular form. The frame part of a box when the material is of considerable thickness is usually prepared in four separate pieces and requires considerable time and skill in handling and placing the joining ends evenly together in the operation of stapling or otherwise mechanically fastening the corners.

By means of the improved method presented herewith the frame of the receptacle is formed from a single piece of material or blank without first cutting the same into as many different pieces as there are sides to the structure, three of the corner-joints being preferably secured together at the same time and at one movement or stroke of the stapling or fastening machine, and thus greatly facilitating the operation.

A machine for carrying out the method of fastening three corners of a box-frame while the blank material lies in a flat position, as herein set forth, is made the subject-matter of an application filed in the United States Patent Office on the 29th day of March, 1901, and patented February 25, 1902, No. 694,031.

In the accompanying drawings, Figure 1 is a view in perspective of a prepared piece of material or board which will form the frame part of a box structure. Fig. 2 is a plan of the inner side of the same. Fig. 3 is a view of the frame of a box in perspective preparatory to closing the last or binding corner; and Fig. 4 is an exaggerated broken-away longitudinal section on line 4, Fig. 1, looking in the direction indicated by the arrow.

A may represent the stock or material, which will ordinarily consist of a board of wood of suitable dimensions to form the four sides of the frame of the box minus the top and bottom parts, as shown in Fig. 3. This board is provided transversely on the inside surface with a number of grooves or scores B, usually three, which correspond to the three corners of a box. These grooves are approximately of a V shape and are disposed at intervals, representing the position of the box-corners, which will be termed "joints," until the structure assumes the form shown in Fig. 3. The degree of bevel is such that the two faces *a* of the grooves will come to a bearing and form a close corner-joint when the sections C are turned at right angles with reference to each other in forming the frame part. The depth of the grooves will be determined somewhat by the thickness of the stock and the kind of wood employed, the object being to leave just enough of the original stock in the bottom of the grooves to allow the sections to bend around easily and at the same time present an unbroken exterior surface at the corners in forming an integral frame structure.

The method of forming the frame of a box consists in first taking a piece of material of the required dimensions to form the frame and cutting the corner grooves or scores, then laying the board flat with the grooved side downward and inserting and clenching all the staples *b*. The staples, as many in number as desirable, are driven into the board or material so that the bar of the staple is on the unscored face lying across the line of the score, and the points of the staple are clenched on the inner side of the blank, one

point being at each side of the miter-score. As shown in Fig. 4, the staples may be embedded in the plane face of the blank. When the blank is bent to form as in Fig. 3, the corners D are strengthened by the staples, and the outer or longitudinal bar of the staple is drawn taut by bending around the corners of the sections C of the box and is usually still farther embedded. The staples preserve the box-corners, both in the act of bending and in subsequent usage, by extending across the surface where the material has been weakened by the interior score. The legs of the staples after the bending are no longer parallel, but converge toward their points or clenched ends.

The respective ends of the board are cut away on a bevel, as at *d*, to form the last corner-joint when brought together. This method may be followed in the construction of boxes where the material runs up to an inch or more in thickness, but is especially adapted for stock running from a quarter up to an inch in thickness.

The staples are inserted from the outside and encompass the corner-grooves, and are clenched to a smooth surface on the inside and form a corner-joint that can only be ruptured by the destruction of the receptacle itself.

As the grain of the wood is generally approximately in the direction of the length of a board, such as is used for box construction, the outer bar of staples *b* lies practically in the direction of the grain, and can therefore be embedded in the wood with small expenditure of power. The corners of the box when completed will present the appearance of having wires or bands extending outside the corners for a little distance and then entering the plane sides of the box. Internally the clenches *b'* of the staples will appear near the corners.

What I claim as new, and desire to secure by Letters Patent, is—

1. The improvement in the art of making boxes, which consists in taking a piece of material the size of the box-frame, scoring one face of the blank with beveled scores at the position of all but one of the box-corners and beveling the ends to form the final corner, inserting staples into the material on the face opposite the scores so that the bar of the staple extends across the line of the score, then bending the blank so that the staples are drawn taut and extend around the corners, and finally fastening the binding-corner in suitable manner.

2. The improvement in the art of making boxes which consists in preparing a blank for the box-sides, scoring the blank transversely on one face, inserting staples on the other face across the line of the score while the material lies flat, and afterward bending the blank to form the corner, at the same time drawing the staples taut around the outside of the corner.

3. The method of making boxes which consists in scoring a blank transversely with a miter-score, driving staples in the unscored face so that the bars of the staples lie across the score, clenching the ends of the staples inside the blank near the score, then bending the blank so that the staples are bent and drawn taut around the outside of the box-corner.

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

JOSEPH SCHMIDT, JR.

Witnesses:
L. M. FREEMAN,
L. B. COUPLAND.