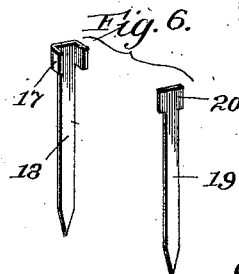
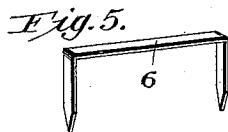
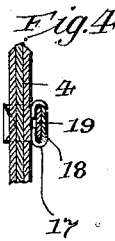
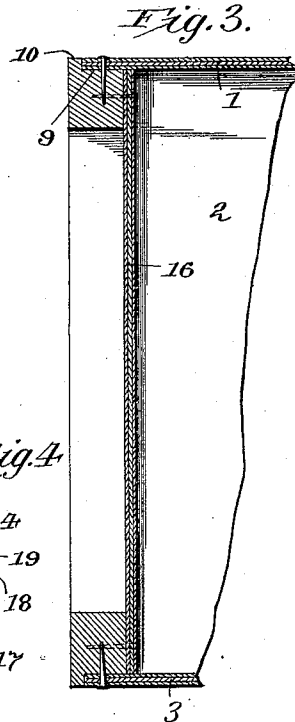
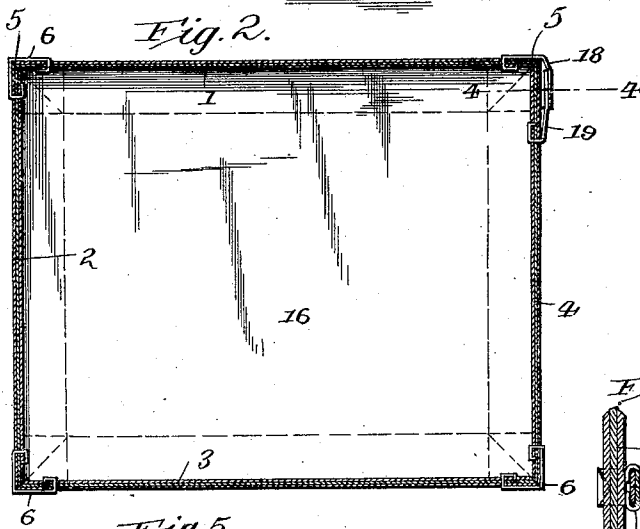
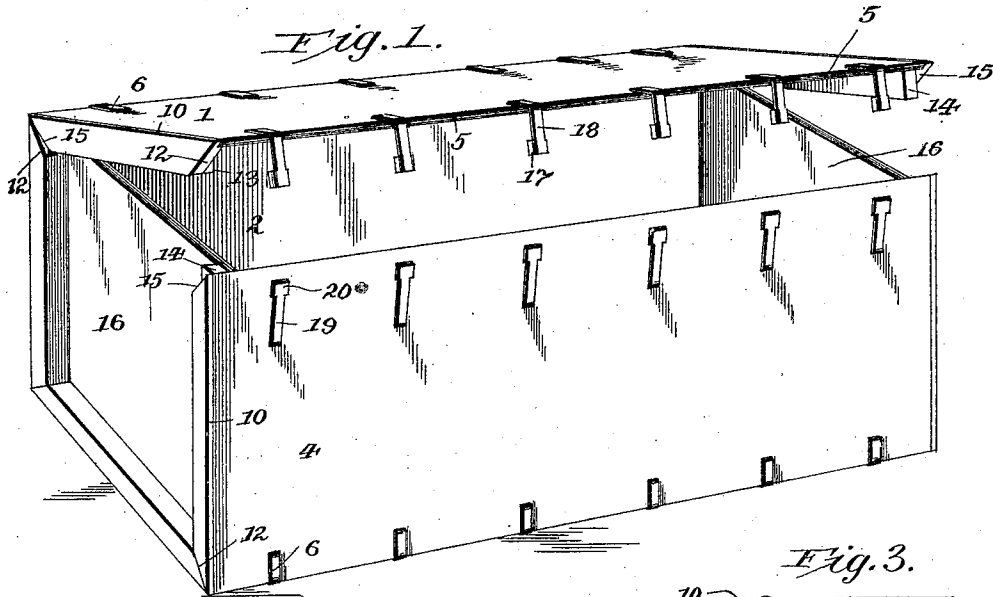


C. C. MENGEL.
PACKING BOX.
APPLICATION FILED JUNE 7, 1909.

933,846.

Patented Sept. 14, 1909.

2 SHEETS—SHEET 1.



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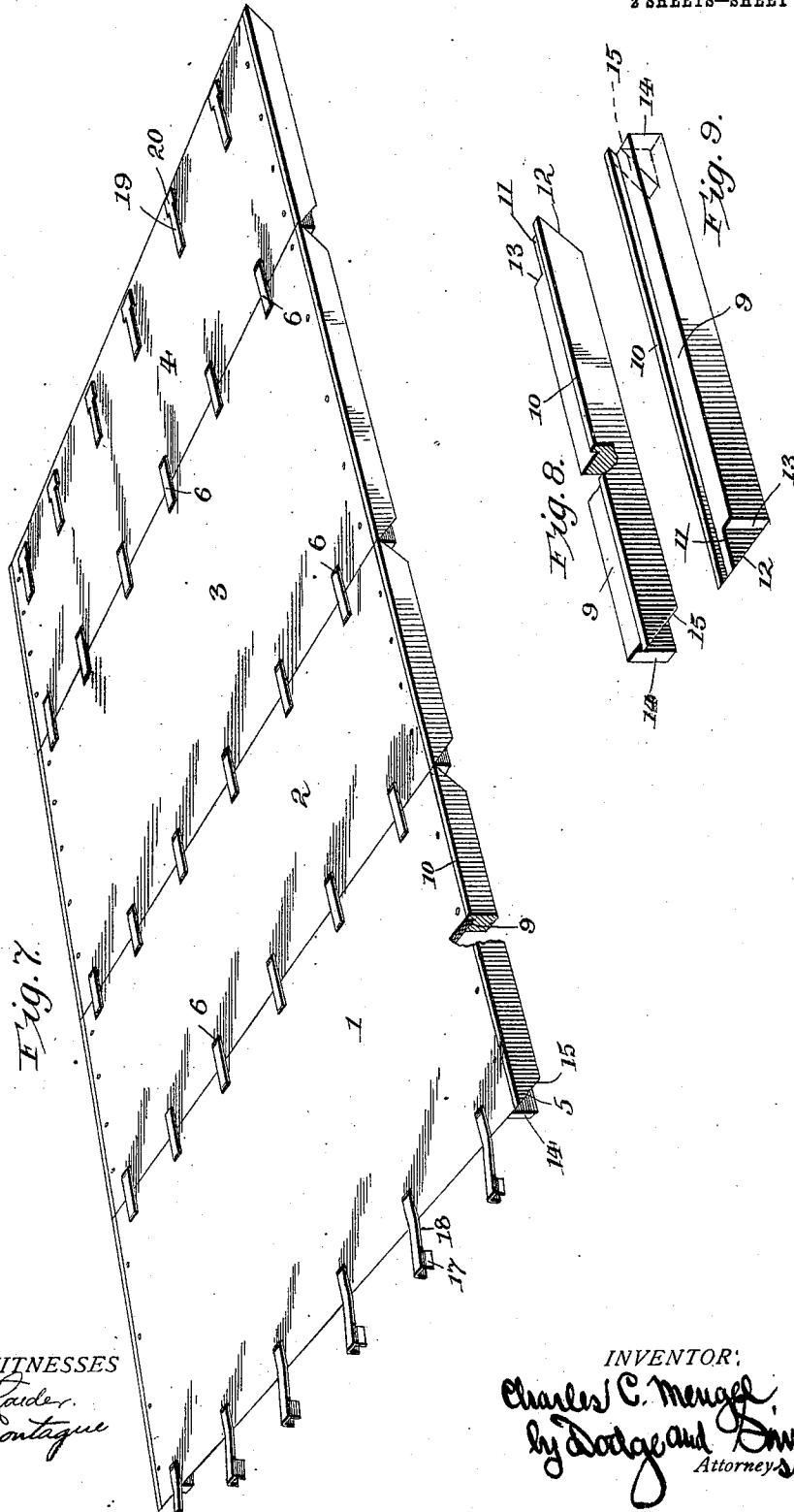
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UNITED STATES PATENT OFFICE.

CHARLES C. MENGEL, OF LOUISVILLE, KENTUCKY, ASSIGNOR TO MENGEL BOX COMPANY, OF LOUISVILLE, KENTUCKY, A CORPORATION OF NEW JERSEY.

PACKING-BOX.

933,846.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed June 7, 1909. Serial No. 500,599.

To all whom it may concern:

Be it known that I, CHARLES C. MENGEL, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Packing-Boxes, of which the following is a specification.

My present invention pertains to improvements in packing boxes, the construction and advantages of which will be hereinafter set forth, reference being had to the annexed drawings, wherein:

Figure 1 is a perspective view of a box, the top thereof being slightly elevated or open; Fig. 2 a transverse vertical sectional view thereof; Fig. 3 a horizontal sectional view of one end of the box, shown upon a slightly larger scale than in the previous views; Fig. 4 a horizontal sectional view, taken on the line 4—4 of Fig. 2; Fig. 5 a perspective view of one of the staples or hinge members employed to fasten the adjacent edges of the sides of the box to each other; Fig. 6 a perspective view of one of the preferred forms of fastening device employed in conjunction with the box; Fig. 7 a perspective view of the box-sides, shown in their knocked-down position or that position which they occupy prior to being squared up or brought into box-form; Fig. 8 a perspective view, partly broken away, of one of the battens; and Fig. 9 a similar view of the batten as viewed from the opposite side.

The main object of the present invention is to provide a strong and simple packing-box, the parts of which may be readily secured together by suitable staples and fastening devices or the like, which may be positioned and driven by machinery, and in which the cleats or battens employed in conjunction with the sides may likewise be secured to the sides with nails driven by machinery.

A further object of the invention is to provide a special form of cleat which serves to protect the ends of the sides, which sides will preferably be formed of veneer-lumber. Where such lumber is used to form the sides it is found advantageous to employ a cleat or batten which will protect the ends or edges of the sides so as to prevent splitting of the lumber, and likewise to provide a solid surface which will receive the shock when the package is thrown and hits upon the end.

It has been found in the actual production of a commercial box in accordance with the invention hereinafter set forth in detail that the structure is extremely light and yet quite stiff and rigid, and by reason of the peculiar form of batten employed the box will stand quite severe strains, and will be as durable as a box which is made of much heavier material.

The construction is such that the blanks which form the two sides, the bottom and the top (which have heretofore been referred to generically as the "sides") of the box, may be placed in a single machine edge to edge, and the staples which are preferably employed and which are designed to secure the parts together are simultaneously driven, and at the same time the fastening devices for the top are likewise positioned and secured in place. The cleats or battens are also secured to the opposite faces of the sides, top and bottom, said members being so formed that when the box is brought to its closed or angular position, the cleats, which preferably interlock with each other, will thus aid in producing a strong and rigid box.

In the drawings I have shown a box rectangular in cross-section, though it is conceivable that a box other than rectangular may be formed if so desired. The front, the bottom, the back and the top, or in other words the four sides of the box, are alike in form (except as to width) in the box herein illustrated, the front being designated by 1, the bottom by 2, the back by 3 and the top by 4. Preferably each of these members will be formed of compound or veneer lumber, and the edges, where they join one another, will be beveled at an angle of 45°, as indicated at 5. The proximate edges of the front and bottom, of the bottom and back, and the back and the top are preferably secured together by sheet-metal hinge staples 6. Said staples are driven through the wood and bent inwardly beneath the inner face of the sides, and if desired turned inwardly or clenched, as indicated in the sectional view, Fig. 2. The staples will be of such length that when the sides are brought to form the parts will assume the positions shown in Fig. 2, the staples being bent around the edges and bringing the beveled faces 5 into close contact with each other.

Preferably, at the same time the staples

are driven, the fastening, composed of two members, will be driven into the free edges of the front 1 and the top 4. The fastening shown in this instance forms the basis of Letters Patent No. 915,045, granted to Robert Schleicher, under date of March 10, 1909. Any approved form of fastening may be used, but that shown is preferred inasmuch as it is made of sheet metal, may be readily driven and secured to the box members at the same time the hinge staples are inserted.

The end cleats or battens are secured to each of the side members, to wit, the front, bottom, back and top, at each end thereof. Said battens will be formed with a seat or depression 9, or in other words, with an upstanding lip or flange 10 in line with the outer face thereof, and the veneer rests upon said seat 9 and against the upstanding lip or flange 10, as best shown in Figs. 3 and 7. By reason of the fact that the veneer lumber is nailed or otherwise secured to the batten, the edge of the lumber will be protected by said flange 10, and at the same time the face of the lumber adjacent to the end is supported upon the batten.

The ends of the battens may be formed in any approved manner, but that shown in the drawings has been found satisfactory. In this construction one end of the batten is provided with a tongue 11, having an inclined face 12 formed upon an angle of 45°, the tongue being of a thickness approximately half that of the cleat. A square shoulder or face 13 is formed adjacent to the tongue 11. The opposite end of the cleat is provided with an outwardly-projecting tongue 14, the end of which is squared, said tongue being of a thickness equal to that of the tongue 11, and said end being likewise provided with a beveled face 15, said face inclining in a direction opposite to that of the beveled face 12. The faces 12 and 15 will, when the cleats are secured to the side members, stand in alinement with the beveled edges of the sides, and when the box is squared or brought to form said beveled faces 12 and 15 will come into contact with each other as the beveled edges of the sides likewise contact with each other. The squared tongue 14 and the beveled tongue 11 will overlap each other, as clearly indicated by the dotted lines in Fig. 2, where they will be preferably secured by nails or the like driven through such overlapping portions.

By the employment of the squared shoulders 13, against which the square-faced tongues 14 abut, an end frame for the box is produced, which frame is quite rigid and unyielding. By making use of the beveled faces the sides may be squared or brought to form without danger of breaking down the edges of the sheets which compose the sides of the box.

The heads 16, which are preferably though

not necessarily formed of veneer lumber, are nailed or otherwise secured to the inner face of the end frames or cleats, and the frames are thus further stiffened. The heads cannot, of course, be secured in place until the front, the bottom and the back of the box are brought to position, at which time the heads may be nailed in place. When so secured, the box will be held in shape, while leaving the top free to be closed when the box has been packed. When this is accomplished, the top is shut down and the members of the fastener are brought into engagement with each other. The wings 17 of the member 18 are then bent inwardly to engage the body of the member 19 above the head 20 formed thereon.

It will be readily appreciated that the boxes may be shipped in a knocked-down condition and assembled or shaped when so desired, this without the necessity of employing skilled workmen.

Any form of fastening device may be employed in lieu of that specifically mentioned, and where cleats or battens such as herein set forth are employed, means other than the specific hinge staples shown may be used for securing the proximate edges of the sides together. So, too, the ends of the cleats or battens may be of a form other than that specifically referred to, although the shape illustrated is preferred; in other words, so long as the lip or flange 10 is provided to protect the ends of the sides and to receive the shock when the package is being handled, it is immaterial what form the end of the cleat or batten may have.

The construction set forth provides a strong yet light box and one which cannot be opened and then closed without indicating that the package has been tampered with.

By the use of a cleat having an upstanding flange, as herein set forth, I am enabled to employ relatively light veneer lumber, said flange serving to protect the ends or edges of the sheets.

Having thus described my invention, what I claim is:

1. A box comprising a plurality of sides, and a batten secured to each end of each side, each of said battens being provided with a flange of a height equal to the thickness of the side and adapted to extend over the end of the side, said batten being likewise provided at each end with means for forming an interlocking connection with the proximate end of the next adjacent batten.

2. In a box, a plurality of sides, the adjacent edges of which are beveled; and a cleat secured to each end of each side, each of said cleats being provided with an upstanding flange adapted to bear against the edge of the end of a side and to protect the same, and likewise provided with a beveled

face which lies in a plane coincident with the adjacent beveled edge of the side.

3. In a box, a plurality of sides, the adjacent edges of which are beveled; and a cleat secured to each end of each side, each of said cleats being provided with an upstanding flange adapted to bear against the edge of the end of a side and to protect the same, and likewise provided with a beveled face which lies in a plane coincident with the adjacent beveled edge of the side, and with a member adapted to interlock with the end of the next adjacent cleat.

4. In a box, the combination of a front, bottom, back and top, the oppositely-disposed edges of said members which are designed to contact with the adjacent edge of the next member being beveled; a plurality of staples driven through and connecting the front and bottom, the bottom and back, and the back and top; a plurality of fastening members secured adjacent to the free edge of the front; a plurality of cooperating fastening members secured to the free edge of the top; cleats secured to the outer edges of the front, bottom, back and top; and heads adapted to be placed within the box-frame and to bear against the cleats.

5. A box comprising a front, bottom, back and top, the opposite edges of each of said members being beveled where they contact with the edge of the adjacent member; flexible sheet-metal staples driven through the adjacent edges of the front and bottom, the bottom and back, and the back and top and securing said members together so that they may lie in a flattened condition or be brought around at substantially right angles to each other and maintained in such relation; cleats secured to the outer edges of said members, each cleat having a tongue at each end adapted to overlap the tongue upon the next adjacent cleat when the parts are positioned; fastening members secured to the free edge of the front and to the free edge of the top; and heads placed within the frame formed by the front, bottom, back and top, adapted to bear against the cleats.

6. A box comprising a plurality of sides, the adjacent edges of which are beveled, said sides being connected to each other by a plurality of metallic staples driven there-

through and bent over to hold them in close engagement with the sides; a cleat secured to each end of each of the sides, each of said cleats being provided with an upstanding flange and adapted to bear against the outermost edge of the side; and heads secured to the cleats.

7. A box comprising a plurality of sides, the adjacent edges of which are beveled, said sides being connected to each other by a plurality of metallic staples driven there-through, the ends of which are bent over to hold them in close engagement with the sides; a cleat secured to each end of each of the sides, each of said cleats being provided with an upstanding flange adapted to engage the end of said side, the cleat being provided with means at each end to form an interlocking connection with the end of the next adjacent cleat; and heads secured to said cleats.

8. In a box, the combination of a front, bottom, back and top; a plurality of series of sheet-metal staples driven through and connecting, respectively, the front with the bottom, the bottom with the back, and the back with the top; cooperating fastening members carried, respectively, by the top and the front; a cleat secured to each end of each of the sides, the back and top, each cleat being provided with an upstanding flange adapted to contact with and protect the end of the sheet to which it is secured, each of said cleats being likewise provided at each end with means for forming an interlocking connection with the end of the next adjacent cleat; and heads.

9. A batten for boxes, provided with a seat or depression in its outer face having an upstanding lip at one side thereof, the ends of the batten having members adapted to form an interlocking connection with corresponding members when brought into operative relation therewith.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES C. MENGEL.

Witnesses:

ROBT. SCHLEICHER,

FRANK VON BORRIES, Jr.