O. C. FENLASON.

BOX.

APPLICATION FILED FEB. 28, 1914.

1,148,372.

Patented July 27, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

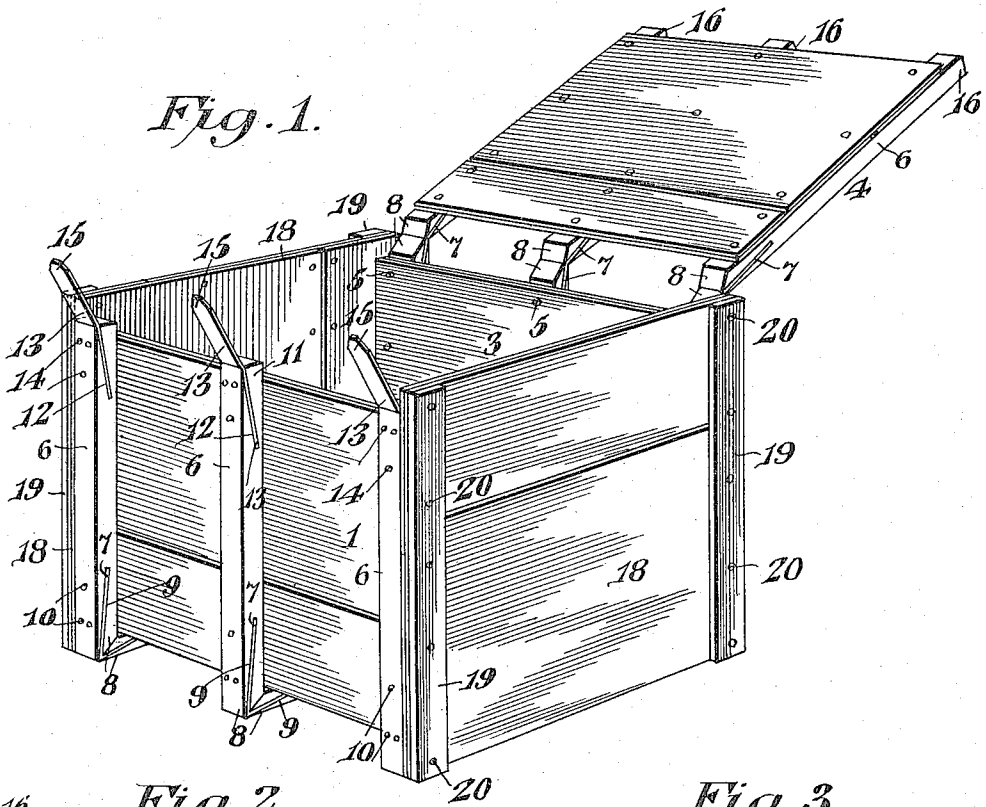


Fig. 2.

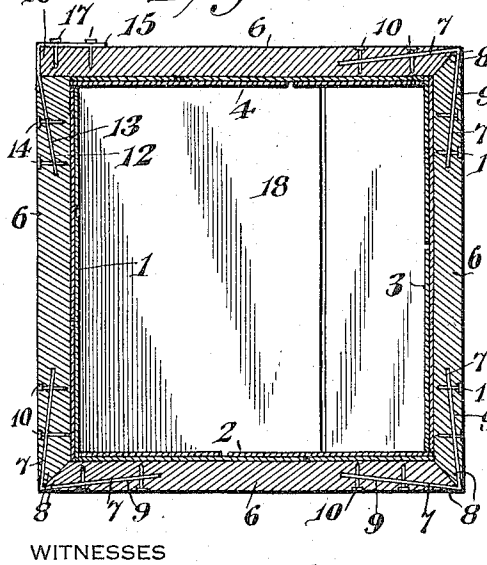
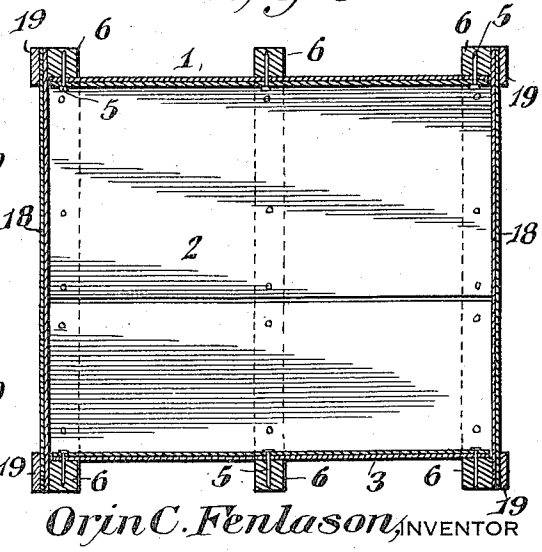


Fig. 3.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 4.

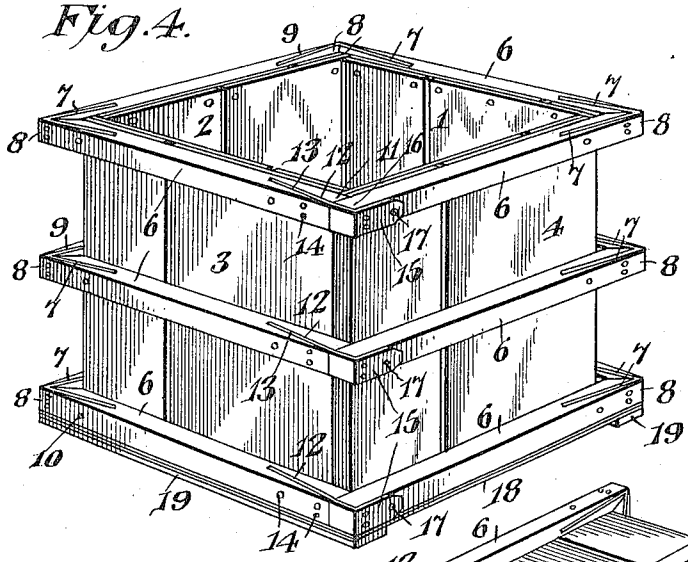


Fig. 5.

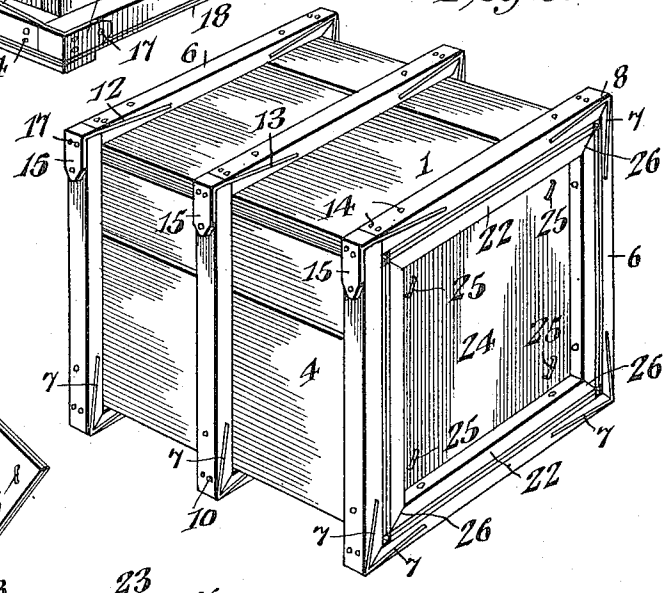
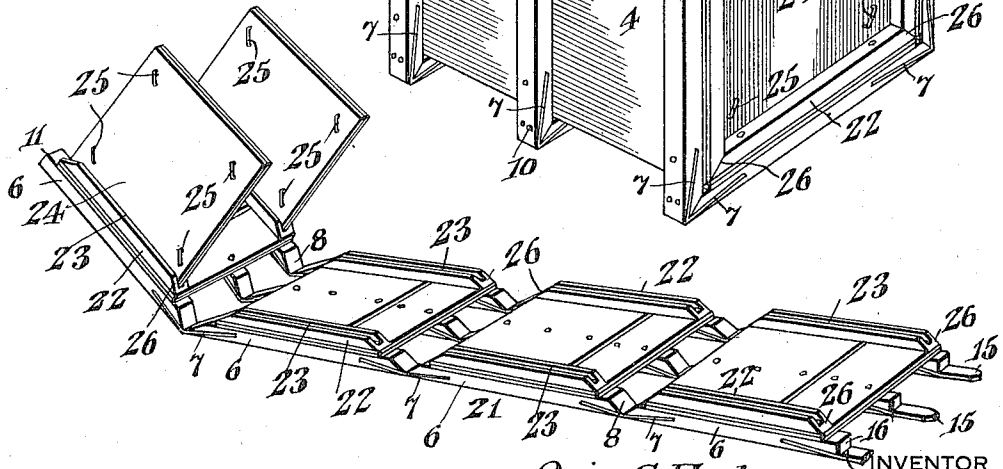


Fig. 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

ORIN C. FENLASON, OF HOQUIAM, WASHINGTON.

BOX.

1,148,372. Specification of Letters Patent. Patented July 27, 1915.

Application filed February 28, 1914. Serial No. 821,712.

To all whom it may concern:

Be it known that I, ORIN C. FENLASON, a citizen of the United States, residing at Hoquiam, in the county of Chehalis and State of Washington, have invented a new and useful Box, of which the following is a specification.

The invention relates to improvements in boxes for shipping various kinds of merchandise.

The object of the present invention is to improve the construction of packing boxes and to enable veneer and other thin lumber to be employed in the construction of such packages and to provide a simple and inexpensive box of strong and durable construction, adapted to be shipped in knocked-down condition to secure lowest freight rates, and capable of being easily and quickly assembled or made up without necessitating the employment of a skilled nailer.

A further object of the invention is to provide a box of this character equipped with exteriorly arranged binding cleats adapted to enable the veneer or other thin lumber to be nailed interiorly to the inner faces of the binding cleats, so that the nail heads will not have to stand the outward pressure to which the veneer is subjected, and capable, when the boxes are arranged one upon another, of protecting the veneer or other thin lumber from breaking away from the said cleats and being crushed inwardly against the contents of the boxes.

With these and other objects in view the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing: Figure 1 is a perspective view of a box constructed in accordance with this invention, the top being arranged in the form of a hinged cover and shown open. Fig. 2 is a central vertical sectional view of the same, the top or cover being closed. Fig. 3 is a horizontal sectional view of the same. Fig. 4 is a perspective view of a rigid box body formed from the blank of the box shown in Figs. 1 to 3 inclusive, one of the end walls being fastened to the box and constituting the bottom of the box. Fig. 5 is a perspective view of a collapsible box illustrating another form of the invention and shown closed. Fig. 6 is a perspective view of the blank which forms the body of the box, showing the same in a spread out condition, the end walls being arranged in the grooves of one of the end sections of the blank.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

In the drawings, in which is illustrated the preferred embodiment of the invention, the box comprises in its construction a blank comprising sections 1, 2, 3, and 4, constituting the front, bottom, rear and top or cover when the box is arranged as illustrated in Figs. 1 to 3 inclusive. The sections of the blank consist of sheets of veneer or other thin lumber secured by nails 5 to the inner faces of exterior binding cleats 6, and when sheets of veneer are employed in the construction of the said sections, they are preferably arranged in two plies or thicknesses, as shown, but a single thickness of veneer may, of course, be employed, where it will afford sufficient strength to sustain the internal pressure and weight of the contents of the box. The heads of the nails 5, which secure the veneer to the inner faces of the exterior binding strips, are arranged at the inner faces of the veneer, so that the strength of the veneer does not depend on the holding power of the nail heads, and the binding cleats on the outside of the box will resist the internal pressure to which the veneer is subjected. The cleats will also protect the veneer when the boxes are piled one upon another, so that the veneer will not break away from the cleats and be crushed inwardly against the contents of the boxes. The exterior binding cleats are arranged at the center and ends of the sections of the blank and they are hinged together at their adjacent terminals by metallic straps or pieces 7 which enable the sections of the blank to be spread out in a flat condition, substantially as illustrated in Fig. 6 of the drawings, before the box is made up. This will permit the boxes to be sent to the shipper in flat or knocked-down condition, and will enable the lowest freight rates for such material to be secured. Also, the hinge connection will enable the top of

the box to be used as a hinged lid or cover until the box is filled and the top rigidly secured in its closed position, as hereinafter fully described. The hinged ends 8 of the exterior binding cleats are mitered at an angle of forty-five degrees, and they are provided with longitudinal kerfs 9 extending inwardly along the cleats from the apices or points of the mitered ends and receiving the metallic straps or pieces 7 which are secured in the kerfs by nails 10 or other suitable fastening devices. The nails 10 are driven into the cleats 6 from the outer faces thereof, and they pierce the metallic straps or plates 7 and secure the same in the kerfs and close the walls of the kerfs tightly against the straps or plates. By this construction and arrangement the cleats are securely hinged together, without interfering with the perfect fitting of the mitered ends to form a square joint.

The outer ends 11 of the cleats 6 of the section 1 are squared and are provided with angularly disposed kerfs 12 extending longitudinally of the said cleats from the outer corners of the squared ends 11 and receiving metallic straps 13 secured by nails 14 in the kerfs 12 and having free terminal portions 15 adapted to be bent around the outer ends 16 of the cleats of the top section 4 to secure the latter in its closed position after the box has received its contents. The ends 16 are squared and are arranged upon the squared ends 11 of the cleats of the section 1, the terminal portions 15 of the straps 13 being bent horizontally against the upper or outer faces of the cleats of the top or cover section 4 and secured to the same by nails 17 or other suitable fastening devices.

When it is desired to arrange the parts so that the cover section or top 4 forms a hinged lid or cover, the end walls 18 of the box are secured to the end cleats of the front, rear, and bottom sections to form a rigid body, as clearly illustrated in Fig. 1 of the drawings. The end walls 18 preferably consist of two plies or layers of veneer, but they may be constructed of thin lumber or other suitable material, and they are reinforced at the front and back by vertical cleats or battens 19, extending from the upper to the lower edges of the end walls 18 and secured to the same by nails 20 which pierce the said end walls and engage the said end cleats of the front, back, and bottom of the box. The end walls are of a size to extend from the upper faces of the cleats of the top of the box to the lower faces of the cleats of the bottom of the same, and from the outer faces of the front cleats to the outer faces of the rear cleats, the edges of the end walls 18 being in substantially flush relation with the outer faces of the exterior binding cleats. The end walls 18 completely cover the side edges of the section of the blank and the hinged top section or cover, in closing, fits downwardly between the upper portions of the end walls.

The box illustrated in Figs. 1 to 3 inclusive is made up into permanent form, but the parts are also susceptible, when made into a permanent box, of being arranged as illustrated in Fig. 4 of the drawings, in which the blank is arranged in rectangular form to form the front, back, and side walls of the box, one of the end walls being secured to the lower end cleats 6 to form a temporary bottom, the other end of the box being left open to permit the contents to be placed therein. After the box is filled, the other end is placed upon the open top of the body and is secured to the end cleats, the completed or closed box presenting the same appearance as when the box is closed, as illustrated in Figs. 1 to 3 inclusive.

In Figs. 5 and 6 of the drawings is illustrated a collapsible box composed of a body blank 21 comprising four sections constructed substantially the same as the body blank heretofore described, with the exception that the sections of the blank 21 are equipped with parallel interiorly arranged cleats 22 secured to the inner faces of the sections and provided with longitudinal grooves 23 for the reception of the marginal edges of end walls 24. The end walls 24 may consist of a plurality of thicknesses of veneer secured together by staples 25 or other fastening means, but light lumber or other suitable material may, of course, be employed in the construction of the ends of the box. The interiorly arranged cleats have mitered ends 26 which fit together when the blank is folded around the end walls 24 to form the box, and they increase the strength of the box structure, as the end portions of the sheets of veneer are securely fastened between the inner and outer cleats. One of the end sections is adapted to form the hinged lid or cover for the box and is secured in its closed position by the terminal portions 15 of the metallic straps or plates 13 heretofore described.

The foldable or collapsible box is adapted to be arranged in a flat condition for transportation to the shipper, the end walls 24 being shown in the grooves of the blank in Fig. 6 merely to illustrate the manner of arranging the parts in making up the box. The box is adapted to be quickly set up for use and the only nailing required will be the fastening of the free terminals of the metallic straps or plates. Neither a box in this form of the invention nor in the form where the end walls are permanently nailed to the sections of the body blank will require a skilled nailer, and any common laborer may readily assemble the parts of either box. The foldable or collapsible

boxes will require much less space than made-up boxes.

What is claimed is:

1. A box of the class described comprising a blank including four sections constituting the top, bottom, front and rear walls of the box and provided at their outer faces with exterior binding cleats located at the end edges of the sections, means for hinging the adjacent ends of the cleats together to permit the blank to be arranged in flat form and also to swing up into box form, end walls having their edges arranged in substantially flush relation with the outer edges of the binding cleats and extended above the front and rear walls to receive the top of the box between their upper portions, and exterior vertical cleats fitted against the end walls at the front and rear edges thereof and having fastening devices piercing the said end walls and the binding cleats of the front and rear walls.

2. A box of the class described comprising a blank including four sections constituting the top, bottom, front and rear walls of the box and provided at their outer faces with exterior binding cleats, means for hinging the adjacent ends of the cleats together to permit the blank to be arranged in flat form and also to swing up into box form, and end walls rigidly secured at their front, rear, and bottom edges to the contiguous sections of the blank to form a permanent box structure and extended above the front and rear walls to receive the top of the box between their upper portions, the binding cleats of the front and rear walls being extended above the upper edges thereof, and the top of the box being supported upon the upper edges of the front and rear walls.

3. A box of the class described including cleats having mitered terminals fitted together to form square joints and provided with longitudinal kerfs extending inwardly from the points of the said mitered ends in a direction longitudinally of the cleats and at an inclination to the outer faces of the same, and metallic straps or pieces secured in the said kerfs and forming a hinge joint for connecting the cleats.

4. A box of the class described including a blank comprising a plurality of sections provided with exterior binding cleats extending longitudinally of the blank and having mitered ends and provided with longitudinal kerfs extending inwardly from the points of the said ends at an inclination to the side faces of the cleats, and metallic straps or plates secured in the said kerfs and forming a hinge joint or connection to permit the blank to be arranged in a flat condition and to fold up in box form with the mitered ends of the cleats in close contact.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ORIN C. FENLASON.

Witnesses:
C. A. WOOD,
S. ALLISON.