L. P. REXFORD.

FOLDING PACKING BOX.

APPLICATION FILED JULY 2, 1910.

996,364. Patented June 27, 1911.

2 SHEETS—SHEET 1.

Fig. II.

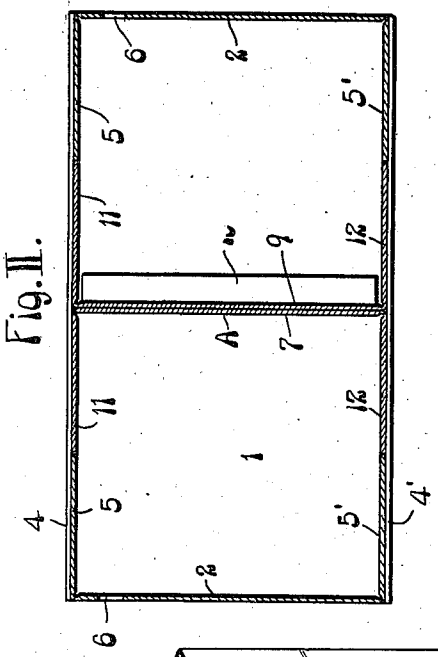


Fig. III.

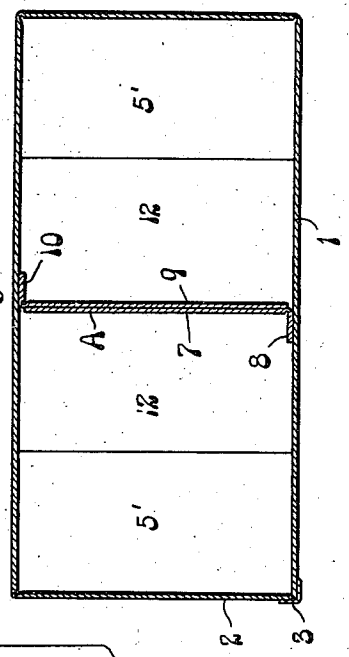


Fig. IV.

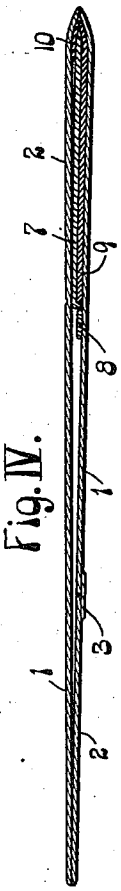
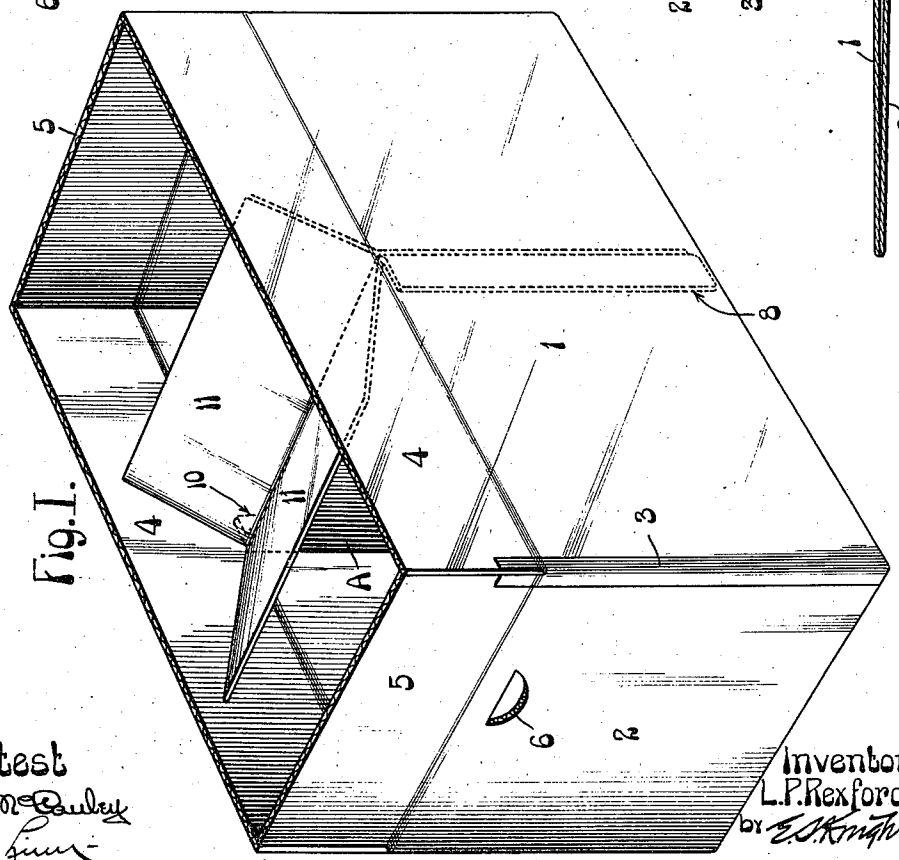


Fig. I.



Attest

A. J. McCauley

E. B. Finney

Inventor:

L. P. Rexford

by E. O. Knight

Atty.

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2 SHEETS—SHEET 2.

Fig. V.

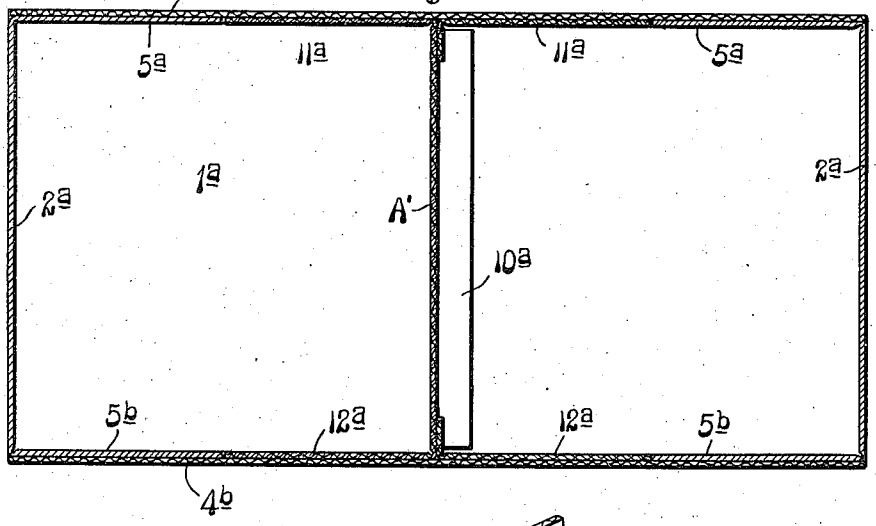
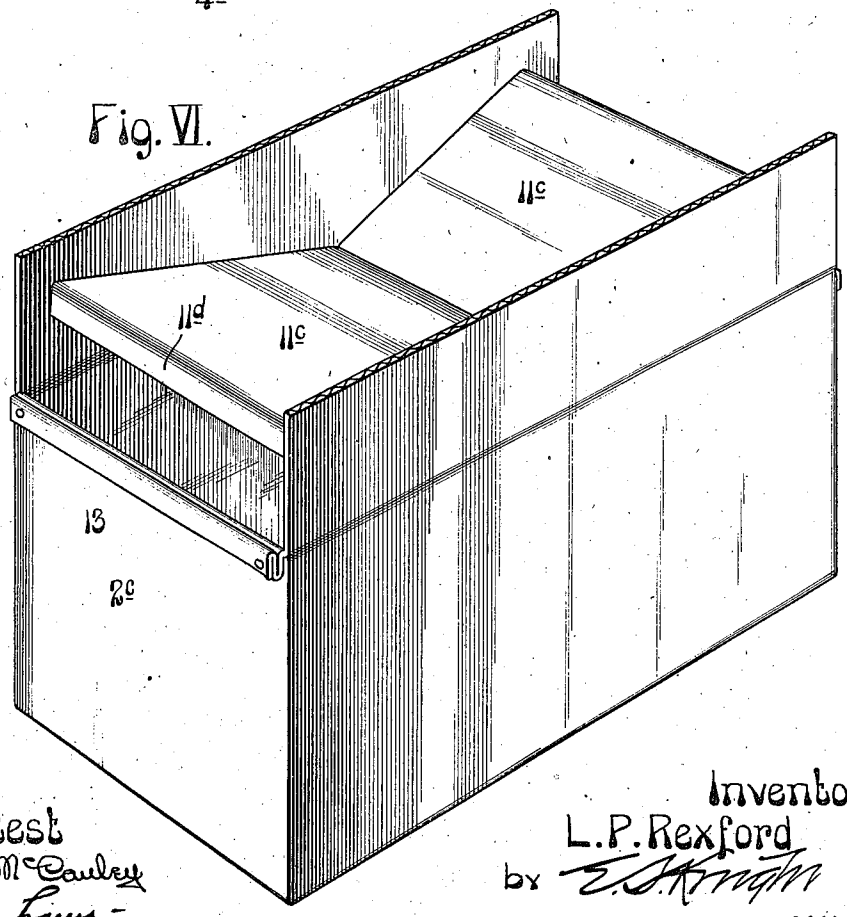


Fig. VI.



Attest

A. J. McCauley

E. B. Lamb

Inventor:

L. P. Rexford

by E. S. Knight

Atty.

UNITED STATES PATENT OFFICE.

LEY P. REXFORD, OF ST. LOUIS, MISSOURI, ASSIGNOR TO AMERICAN PAPER PRODUCTS COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION.

FOLDING PACKING-BOX.

996,364. Specification of Letters Patent. Patented June 27, 1911.

Application filed July 2, 1910. Serial No. 570,044.

To all whom it may concern:

Be it known that I, LEY P. REXFORD, a citizen of the United States of America, residing in the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Folding Packing-Boxes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a folding packing box and it has for its object the production of a box of this description made of sheet material provided with means whereby the box is divided into a multiple of compartments, the box being so produced that it is in its entirely, notwithstanding the fact that it is made of sheet material, such as paper, rendered very rigid, and capable of withstanding hard usage such as packing boxes are commonly subjected to, and is suitable for use in lieu of the commonly employed wooden packing boxes, the production of which entails much greater expense than a packing box made in accordance with my improvement.

Figure I is a perspective view of my packing box with the top of the box shown open. Fig. II is a vertical longitudinal section through the box in a closed condition. Fig. III is a horizontal section through the box. Fig. IV is a longitudinal cross section through the box in a folded condition. Fig. V is a vertical longitudinal section through my box with a modified form of partition therein. Fig. VI is a perspective view of a modification of the box.

The body of my box, shown in the accompanying drawings, is preferably made of a single sheet of paper, paper board, or other sheet material and comprises side wall sections 1 and end wall sections 2. These wall sections are foldably connected at their ends; or, in other words, at what are the corners of the box when the box body is made of a single sheet of material, the two ends of the sheet are united at one corner of the box body by suitable means, such as a strip 3 of tape. The box body also comprises top and bottom side flaps 4 and 4′, foldably connected to the side wall sections 1 and top and bottom end flaps 5 and 5′, foldably connected to the end wall sections.

While considering the subject of the body of my box, it is to be noted that the side flaps 4 and 4′ are foldable inwardly toward each other so that they will lie at angles relative to the side wall sections 1 at both the bottom and top of the box body and serve as partial closures for the bottom and top of the body, but it is unimportant as to whether or not the edges of these side flaps meet each other when they are folded. The end flaps 5 and 5′, which are foldable to positions at angles to the end wall sections of the box to serve as partial closures for the bottom and top of the box body, have functions independent of their functions as closure members, as will hereinafter appear, and these end flaps are, for this reason, made of specific lengths that will provide for their performing such functions, and it may be here stated in a general way that the length of each end flap is less than one-half of the length of the box body into the structure of which said flap enters.

The body of my box is preferably provided with hand holes 6 located in the end wall sections 2, into which a person's fingers may be introduced when the box is to be lifted or carried.

A designates a partition that enters into the structure of my box and by which the interior of the box body is subdivided into separate compartments when it is set up and placed in condition for use, said partition being so attached to one of the wall sections of the box body as to permit of the body being folded. This partition, as illustrated in Figs. I to IV, inclusive, comprises two body members 7 and 9, of sheet material, that are placed back to back, and glued, or otherwise suitably connected to each other, thereby rendering the partition a double one, to afford greater rigidity in the partition than would be acquired by the use of only one of the partition members 7 and 9. The partition body member 7 is provided with a hinge leaf 8, glued, or otherwise suitably secured to one of the side wall sections of the box body and the partition body member 9 is provided with a stay leaf 10 adapted to bear against the opposite side wall section of the box body, and this leaf is arranged parallel with the hinge leaf 8, but extends from the partition in a direction the reverse of the direction in which the hinge leaf extends, (see full lines Fig. III and dotted lines Fig. I). The two leaves 8 and 10 therefore serve to stay the par-

tition and hold it in its proper position transversely of the box. At the top of the partition are brace wings 11 and at the bottom of the partition are brace wings 12. These brace wings are flexibly connected to the partition body members 7 and 9, and they are adapted to be bent into positions at right angles to the partition A, and extend horizontally therefrom at each side of the partition at its top and bottom and, when in their horizontal positions, lie in the same planes as those in which the top and bottom end flaps 5 and 5′ of the box body lie when they are folded inwardly from the end sections of said box body. The brace wings of the partition A are of widths corresponding to the width at the interior of the box body and it will be noted on reference to Figs. II and III that the free ends of the end flaps 5 and 5′ toward which they extend, and that consequently the abutting end flaps and partition brace wings act to resist any force to which the parts abutting thereagainst are subjected. It will, therefore, be apparent that the partition A is firmly held in its proper position and that the entire box is rendered very rigid throughout horizontal lines occupied by the end flaps of the box body and the partition brace wings 11 and 12, such rigidity being present at both the top and bottom of the box.

In setting up my box, the side flaps 4 and 4′ hinged to the side wall sections of the box body are adapted to be folded onto the end flaps 5 and 5′ and the partition brace wings 11 at the top of the partition A, and also onto the end flaps 5′ and the partition brace wings 12 at the bottom of the partition A and secured in such folded positions in any suitable manner, in order that they will hold said flaps and brace wings from outward movements and also serve to complete the closures of the box body at both its top and bottom, as well as insuring further rigidity in the structure of the box. It will be readily understood that the bottom closure members, including the flaps of the box body and the brace wings of the partition A at the bottom of the box, are secured in place prior to filling the box and as an initial act in setting the box up after it has been unfolded and the partition has been moved to its proper position; further that the brace wings at the top of the partition are permitted to remain in upright positions while the box is being filled, following which the top partition brace wings are lowered and the flaps of the box body are moved to their proper positions, as explained, to produce the desired bracing action with respect to the partition.

In the modification shown in Fig. V, the box body is of a structure similar to the previously described box body and includes side wall sections 1^a, end wall sections 2^a, side flaps 4^a and 4^b at the top and bottom of the body and end flaps 5^a and 5^b at the top and bottom of the body. The box in this modification differs only from the previously described box with respect to the partition A′. The body of this partition is a single sheet of material that is provided with hinge and stay flaps, the stay flap 10^a only being shown in the drawing. At the top and bottom of the body of the partition are brace wings 11^a and 12^a that oppose respectively the end flaps 5^a and 5^b when the box is in use and have the same functions as the previously described brace wings 11 and 12. Two of these brace wings are shown as being produced from the same sheet of material as that used for the body on the partition A′, and the other brace wings are attached to the body of the partition in any suitable manner, but it is obvious that this structure may be varied, if desired; and, as an illustration of departure from the structure shown, the entire number of brace wings may be of sheets of material separate from that of which the body of the partition is produced and be suitably secured to the body sheet.

In the modification shown in Fig. VI, the body of the box is similar in structure to the structure shown in Figs. I to IV, inclusive, except that the end flaps at the top of the box are dispensed with and the material utilized in the first described construction for producing the end flaps is arranged in several folds at the exterior of the end sections 2^c of the box body and these folds are suitably secured to the end sections, thereby producing hand holds 13 that may be readily engaged for the purpose of lifting and carrying the box. The box in this modification is provided with a partition, the body of which and the bottom brace wings of which may be similar either to the corresponding parts shown in Figs. I to IV, or in Fig. V. In view, however, of the end flaps of the box body being dispensed with in this modification, the top brace wings 11^c of the partition are made of such lengths that they will extend from the partition to the end wall sections of the box body for engagement therewith in service as bracing members in a similar sense to that in which the partition wings previously described serve as bracing members. The brace wings 11^c are preferably made with downturned flanges 11^d which serve to strengthen these wings at their ends and also serve to provide for the wings acting as more perfect closures for the top of the box at its ends in the absence of top end flaps carried by the end wall sections of the box body.

In making the herein described box, the material used is preferably corrugated paper board; but any stiff paper or other suitable sheet material may be utilized instead of

corrugated paper board, without departing from my invention.

I claim:—

1. In a sheet material packing box, a body comprising walls, closure flaps hinged to parallel walls of said body at the bottom and top of the body; and a vertical partition within said body disposed transversely of the body walls which carry the closure flaps, the partition carrying wings hinged to its bottom and top edges; said partition wings being adapted to brace the remaining walls of the box body, and said closure flaps overlapping said partition wings when the box is closed to form with said wings a double bottom and a double top for the box.

2. In a sheet material packing box, a body comprising walls, brace flaps hinged to two parallel walls of said body at the bottom and top of the body, closure flaps hinged to the other walls at the bottom and top of the body; and a vertical partition within said body parallel with the walls having the brace flaps, the partition being provided with wings hinged to its bottom and top edges; said brace flaps and partition wings being adapted to abut against each other when the box is closed, and said closure flaps being adapted to overlap said brace flaps and partition wings when the box is closed.

In testimony whereof, I have hereunto affixed my signature.

LEY P. REXFORD.

In the presence of—
A. J. McCawley,
E. B. Linn.