Feb. 5, 1924. 1,482,857

J. A. MOORE

BOX OR CONTAINER

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Fig. 1.

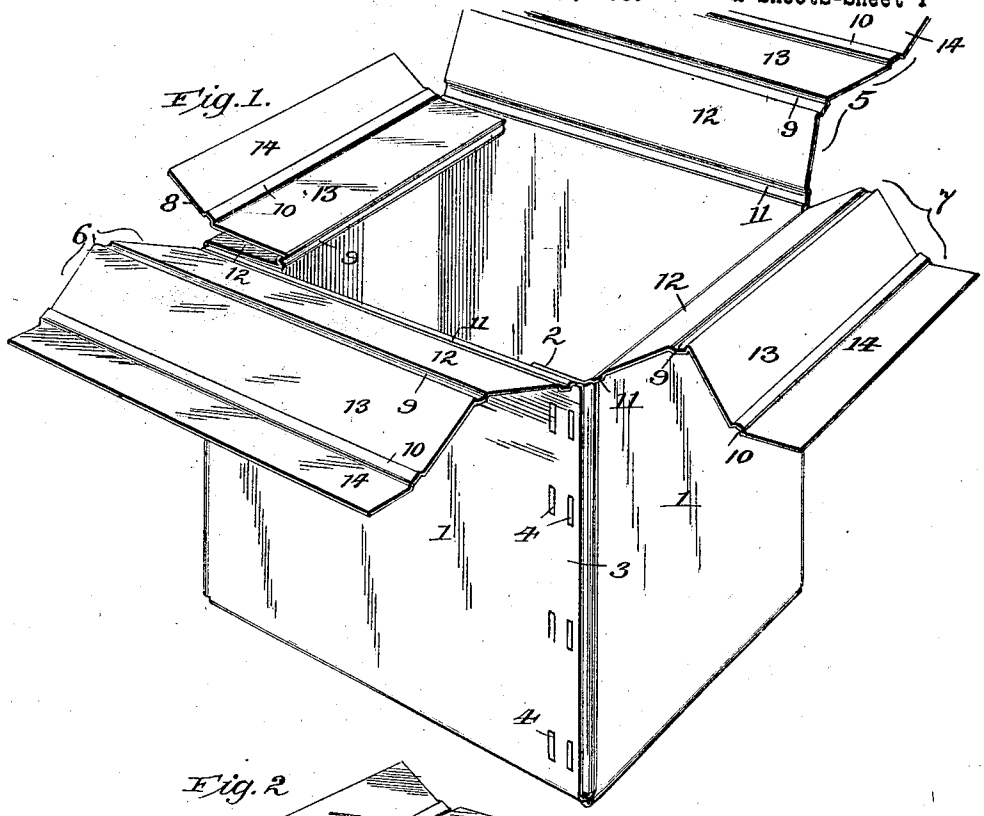
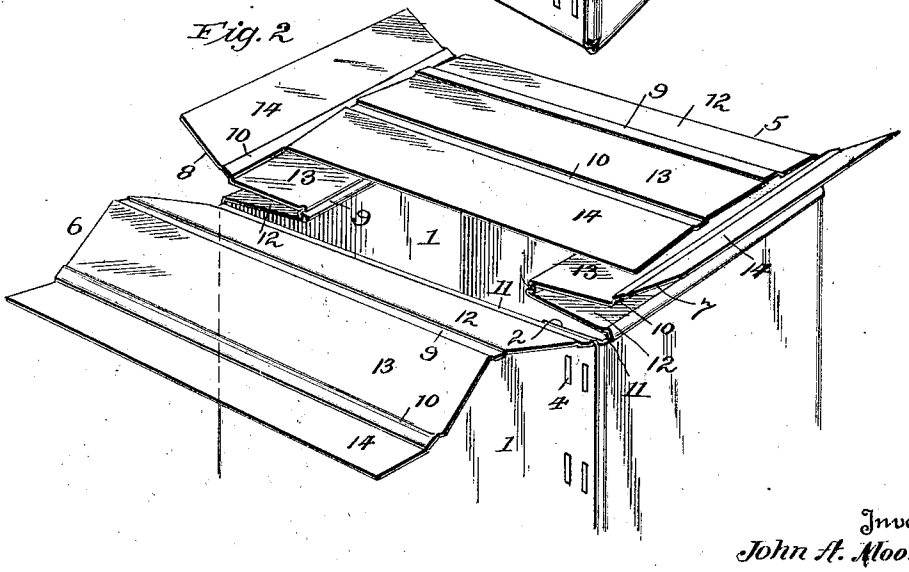


Fig. 2



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Fig. 3.

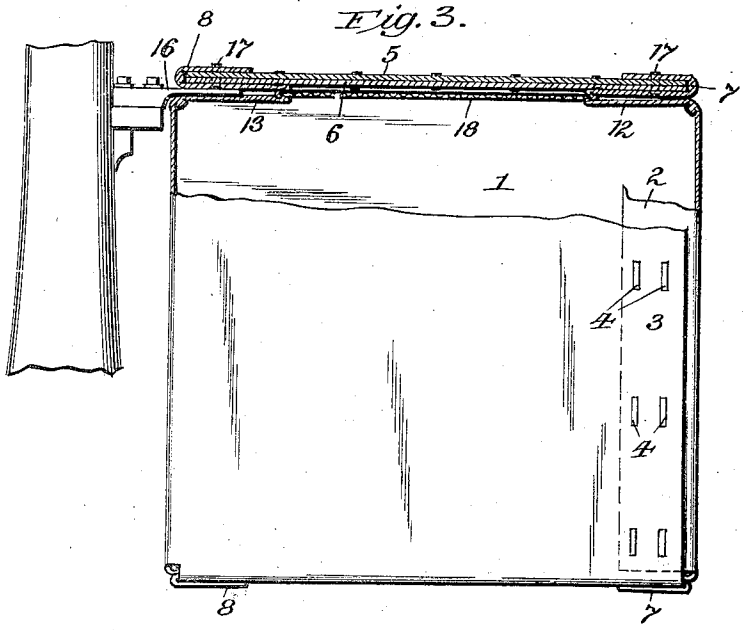
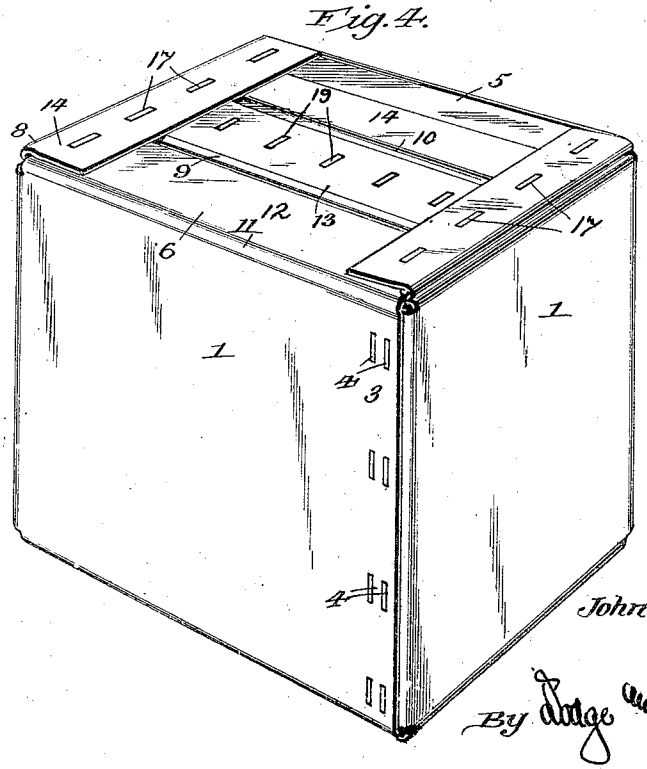


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN A. MOORE, OF LOUISVILLE, KENTUCKY, ASSIGNOR TO THE MENGEL COMPANY, OF LOUISVILLE, KENTUCKY, A CORPORATION OF NEW JERSEY.

BOX OR CONTAINER.

Application filed September 18, 1919. Serial No. 324,324.

To all whom it may concern:

Be it known that I, JOHN A. MOORE, 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 Boxes or Containers, of which the following is a specification.

This invention pertains to shipping boxes or containers and more particularly to those which are produced from fiber board.

The main object of the invention is to produce a strong and pilfer proof box and one which may be readily sealed or stitched without disturbing or injuring the contents of the box.

The construction is such that the box is made exceedingly strong at its corners, a point of manifest advantage, and this without the employment of more stock in the blanks than is now commonly employed with boxes of equal size. Moreover the construction lends itself to quick and easy sealing or stitching and the employment of skilled labor to effect the operation is not essential.

The structure is shown in the annexed drawings, wherein,—

Fig. 1 is a perspective view of a box constructed in accordance with my invention with three of the top flaps thrown outwardly or open while the fourth is partially infolded;

Fig. 2 a similar view showing two of the flaps partly infolded and one of the other flaps brought to position thereon;

Fig. 3 a sectional elevation showing the flaps in their final position and an anvil of a stitching machine in place between the innermost folds of the refolded and embracing flaps; and

Fig. 4 a perspective view of the completely sealed or stitched box.

The box is preferably formed from a one piece blank and is so shown, though as will be readily appreciated, in so far as the sealing or closing arrangement is concerned the box might be formed from a plurality of pieces stitched or seamed together in any suitable manner so long as the necessary flaps formed in the manner hereinafter set forth are provided.

The box body which is rectangular in cross section is designated by 1 and the overlapping edges or margins 2 and 3 of the body portion of the blank are secured together in any suitable manner as by metallic staples or "stitches" 4.

The bottom of the box may be formed and sealed in any suitable manner for while the box is empty it is a simple matter to seal the bottom. It is preferred, however, to form the bottom flaps like the top and to seal the bottom in the same manner as the top. By making the flaps alike no confusion can arise in sealing up the box blank as it makes no difference which end is first sealed. Moreover, the stiffened construction which will be secured is advantageous for the bottom as well as the top.

To avoid confusion in description, the flaps 5 and 6 will be termed the end flaps and flaps 7 and 8 the side flaps. These designations are, however, employed only to differentiate between the two sets of opposed flaps. The box may be square or oblong and, as will be hereinafter set forth, either pair of flaps may serve as the embracing members. Such designations when they appear in the claims are to be construed in the light hereof.

The various flaps are alike in form and each is provided with two grooves 9 and 10 formed by creasing or indenting the stock. Said grooves lie parallel to each other and to a hinge groove 11 formed at the line of juncture of the flap to the box body.

Grooves 9 and 11 are formed by pressing or indenting the stock outward, while groove 10 is formed by indenting the stock inward. Groove 9, moreover, is spaced equidistantly between the grooves or indentations 10 and 11 so that the intermediate flap portions 12 and 13 are of the same width, but the outermost flap section 14 will preferably be made somewhat narrower than the others.

Assuming that the box bottom is sealed and the box is filled, each of the side flaps 7 and 8 is folded inward along groove 11 and outward along groove 9, hinging portion 13 against portion 12 in each case, portion 13 overlying 12, and portion 14 extending outward beyond the box body.

When both side flaps are thus positioned

(see Fig. 2), the end flaps 5 and 6 are successively folded inward along grooves 11, flap 5 lying flat upon the then underlying sections 13 of the two side flaps 7 and 8, while flap 6 overlies flap 5. Flaps 5 and 6 may now be stitched together by known stitching devices, or they may be otherwise sealed together. Such stitching is indicated in Fig. 4 at 19, but is by no means necessary. The flap sections 14 of the side flaps 7 and 8 are then folded inward over the flaps 5 and 6. It will be seen that the edges of the flaps 5 and 6 are then embraced between the flap sections 13 and 14 and that sections 13 are directly connected to and are in fact integral extensions of, the box body.

A short anvil 16 (Fig. 3) of a stitching machine (not shown) is then inserted between the flap sections 12 and 13 and suitable stitches 17 are driven and clinched against the anvil. Such stitches pass through portions 13 and 14 of the side flaps 7 and 8, and likewise through the end flaps 5 and 6 which are embraced therebetween. Thus most of the stitches or staples pass through four superposed plies or layers of the interfolded flaps, and the balance pass through three plies. This not only secures the flaps firmly together but also provides reinforcement along two opposite edges of the box, thereby enhancing its rigidity at points where the box is subjected to the greatest strain incident to handling and rough usage.

As will be readily appreciated, the sealing operation is simple and a machine having a short rigid anvil is all that is required. This is a point of manifest advantage over constructions requiring the use of anvils which are long in order to extend between the flaps and entirely across the box.

Inasmuch as the end flaps 5 and 6 overlap to a considerable extent and are stitched to each other and to the embracing sections of the side flaps, the box is rendered pilferproof even without the stitches 19, as one cannot insert his hand beneath flap 6 and press flap 5 downward to such an extent as to permit access to the contents of the box. The stitches 19 do, however, strengthen the box, particularly in the larger sizes.

If desired or necessary a filler piece 18, Fig. 3, of corrugated board or other suitable cheap material may be placed on the box contents and fill in the space between the margins of the inturned sections of the side flaps and the under face of flap 5.

While I have shown all of the box flaps as grooved in the same manner it will be apparent that only two oppositely disposed flaps need be so formed since the other pair lie flat. Grooving of all the flaps is preferred as the operator may under such conditions employ either pair of oppositely disposed flaps as the embracing members.

What is claimed is,—

1. A box having four closure flaps arranged in opposite pairs with the flaps of one pair each twice folded once upon itself, and the second fold embracing the sides of the other pair of flaps when the latter are turned inwardly, and fastenings extending through such folded flaps and the embraced portions of the other flaps.

2. A box having two end flaps and two side flaps, said side flaps each being creased to form three inter-connected sections, the innermost section being arranged to be folded inwardly with the next adjacent section turned outwardly and overlying the same while the outermost section contacts. when turned inwardly, the inturned end flaps, and stitches passing through the two outermost sections of the side flaps and those portions of the end flaps which are embraced between said two outermost sections.

3. As a new article of manufacture, a box having four closure flaps arranged in opposite pairs, each flap being grooved parallel to the box wall from which it extends, along two parallel lines distinct from the line of connection of the flap to the box body whereby each flap will be provided with three interconnected sections, two of which are adapted to be readily folded over one another while the third is adapted to be folded over the adjacent flaps when the same are turned inwardly.

4. A box having four closure flaps arranged in opposite pairs, one of said pairs at least being grooved along two lines parallel to the adjacent box wall to form three interconnected sections, said grooves being distinct from the connection or hinge of said flaps to the box wall and the two sections adjacent to hinge being of substantially equal width.

5. A box having four closure flaps arranged in opposite pairs, one of said pairs, at least, being grooved along two lines parallel to each other and to the adjacent box wall, the grooves extending inwardly, respectively, from opposite faces of the flaps.

6. A box having four closure flaps arranged in opposite pairs and extending from the box body as integral extensions thereof, the line of juncture between each of said flaps and the body being defined by a groove which admits of an easy inturning of the flap, one of said pairs of flaps, at least, being grooved along two lines parallel to each other and to the adjacent box wall, said grooves extending inwardly, respectively, from opposite faces of the flaps.

7. A box having four closure flaps arranged in opposite pairs, with two of said flaps, at least, divided into three connected

sections by grooves formed therein parallel to the box body, the innermost section, when the flaps are brought to closed position, being turned inwardly and underlying the intermediate and then outwardly folded section, while the outermost or end section is folded inwardly and overlies the edges of the then inturned other pair of flaps, and fastenings driven through the outermost and intermediate sections of the folded flaps and through the flaps which are embraced between said outermost and intermediate sections.

In testimony whereof I have signed my name to this specification.

JOHN A. MOORE.