F. H. HOUGHLAND.

FOLDING BOX.

APPLICATION FILED JULY 3, 1915.

1,177,774.

Patented Apr. 4, 1916.

3 SHEETS—SHEET 1.

Fig. 1.

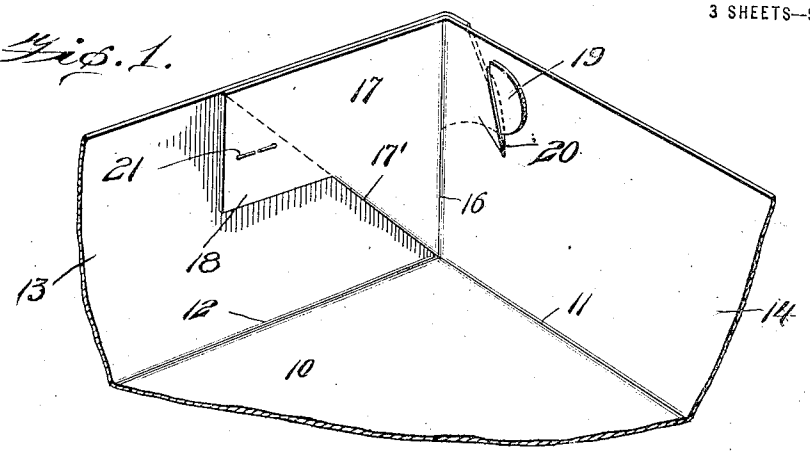


Fig. 2.

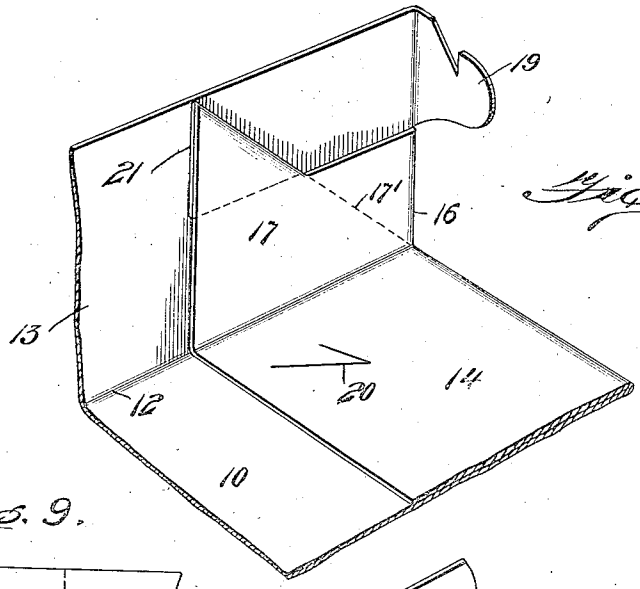


Fig. 9.

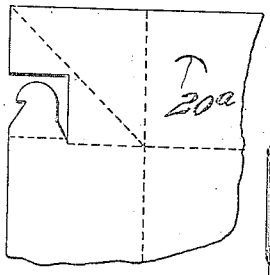
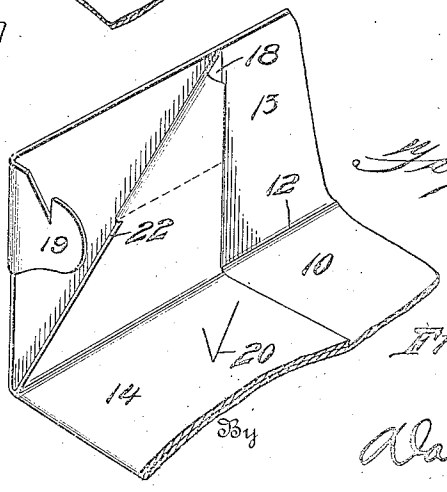


Fig. 3.



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3 SHEETS—SHEET 2.

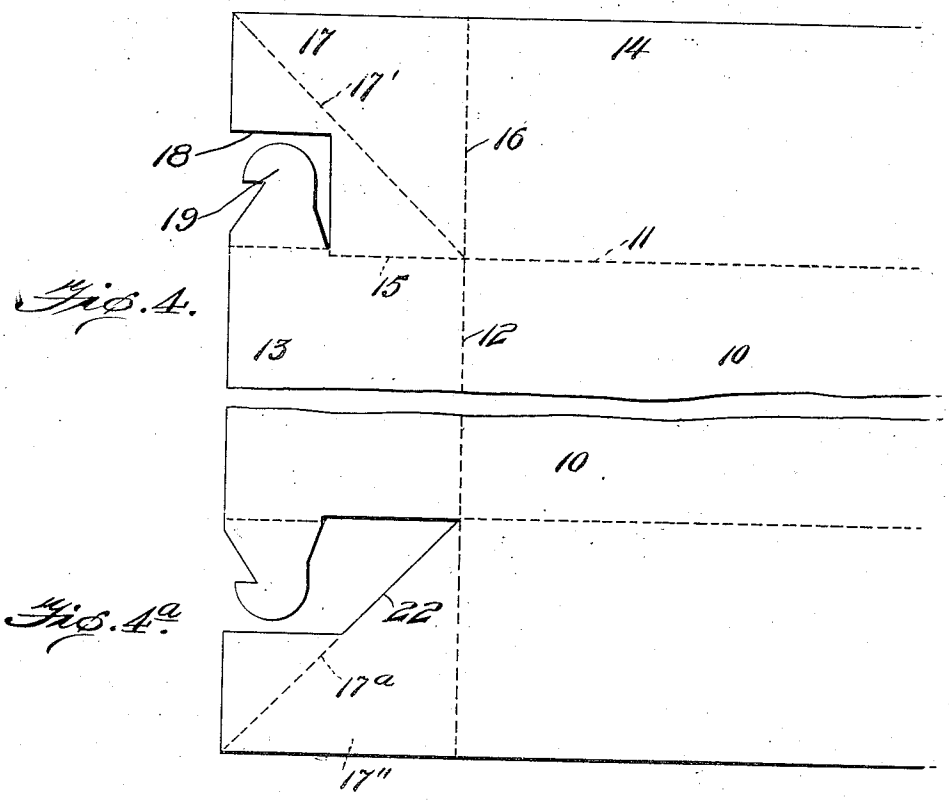


Fig. 4.

Fig. 4a.

Fig. 5.

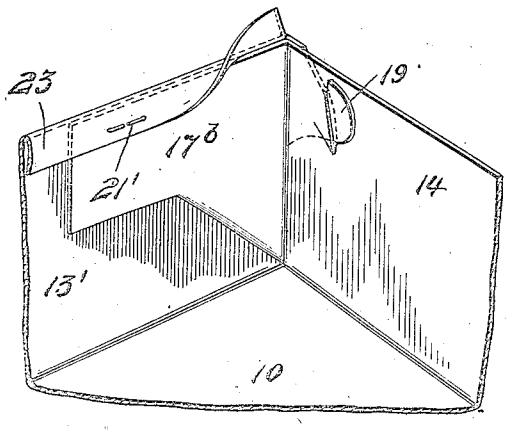
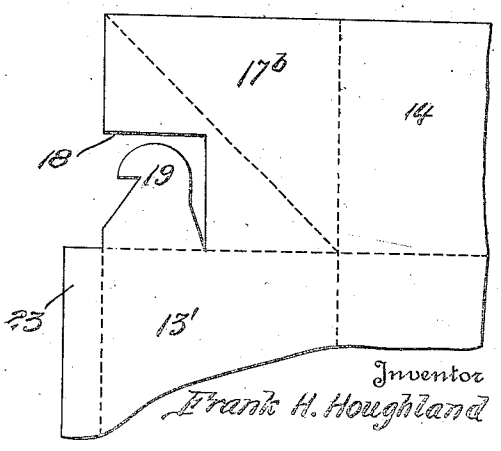


Fig. 6.



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3 SHEETS—SHEET 3.

Fig. 7.

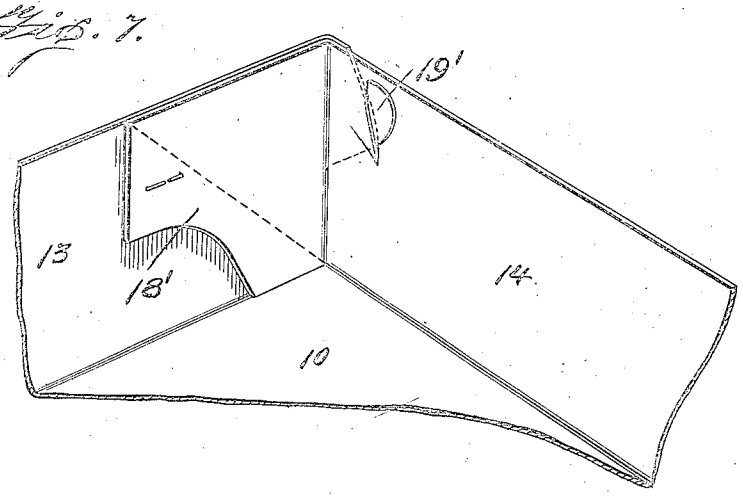
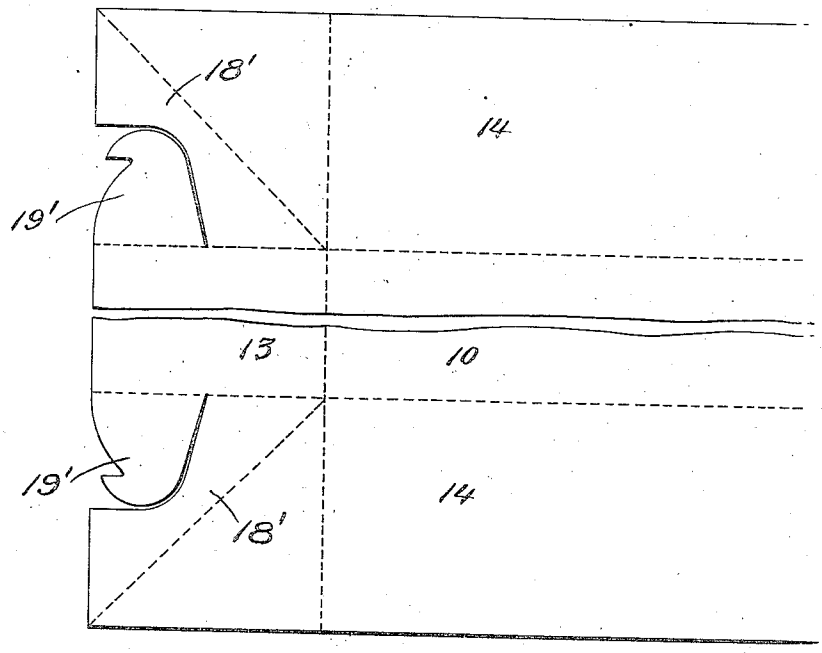


Fig. 8.



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UNITED STATES PATENT OFFICE.

FRANK H. HOUGHLAND, OF CINCINNATI, OHIO.

FOLDING BOX.

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Application filed July 3, 1915. Serial No. 37,837.

To all whom it may concern:

Be it known that I, FRANK H. HOUGHLAND, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Folding Boxes, of which the following is a specification.

This invention relates to improvements in folding boxes and more particularly to the type of box having the folded corners, one object of the invention being the provision of a box of this character which can be made with the least waste of material and which when assembled in form will be properly reinforced without liability to breakage as is commonly the case with boxes of this type.

A further object of the present invention is the provision of a box of this type which as it is formed or moved from its flat position to a tray or box forming position will cause the locking members thereof to move toward locking position and thus make such operation a simple and easy one.

With the foregoing and other objects in view which will be evident as the description proceeds, the present invention resides in the features hereinafter set forth and particularly claimed.

In the accompanying drawings: Figure 1 is a perspective view of the inner corner of one form of box embodying the present invention. Fig. 2 is a similar view thereof just previous to the extension of the side wall and the locking of the corner. Fig. 3 is a similar view to Fig. 2 taken from the opposite side. Fig. 4 is a plan view of one corner of the blank. Fig. 4ª is a similar view of a modified form. Fig. 5 is a perspective view of another modified form of lock corner. Fig. 6 is a plan view of the blank thereof. Fig. 7 is a perspective view of another modified form of lock corner. Fig. 8 is a plan view showing one end of the blank therefor. Fig. 9 is a detail view of a blank showing a modified form of incision for receiving the lock.

Referring to the drawings, the numeral 10 designates the blank which is scored at 11 and 12 to provide the end wall 13 and the side wall 14, these walls being further scored as at 15 and 16 to further provide the fold in corner flap 17. This corner flap is scored diagonally as at 17′ so that it may be caused to assume the position as shown in Figs. 1, 2 and 3. The portion thereof adjacent to the end wall 13 is cut to provide the staple receiving supplemental flap 18 and the locking tongue 19 while the side wall 14 is provided with the various incisions or cuts 20 and 20ª as shown in Figs. 1 and 9 for the reception of the hook 19. A staple 21 is driven through the end wall 13 and the supplemental flap 18 to lock the corner flap relative thereto so that the box may be collapsed in a flat relation or be extended to the various positions shown in Figs. 2 and 1, respectively.

In the modification shown in Fig. 4ª the flap 17″ is provided with the angular cut away portion 22, the supplemental flap 18 being cut to the crease line 17ª.

In the construction shown in Figs. 5 and 6 the same details as shown in Figs. 1 and 4 are carried out except that the end wall 13′ is provided with the fold in edge 22 which is held in place over the edge of the corner flap 17ᵇ by means of the staple 21′. By this means the reinforcement is provided the full length of the free edge of the wall 13′.

In the construction shown in Figs. 7 and 8 the lock 19′ is cut with the least waste of material to provide a relatively long staple receiving supplemental flap 18′, the curved edge of the lock being substantially contiguous at the greater portion thereof with the flap 18′ while a portion thereof between the crease and the curved edge provides a reinforcement that is not so liable to tear at the crease line as the other form.

By forming the curved lock receiving incision 20ª as shown in Fig. 9 it has been found that the lock is more readily guided into position when the end wall is moved toward the side wall and that the normal tension of the hook lock is to permanently seat itself therein. It also requires no extra time nor effort to press the locking point into or out of position.

From the foregoing description it is evident that with a box constructed according to and embodying the present form of folded corner and lock, that there is less liability of the lock accidentally becoming released, and in view of the fact that the staple securing flap is rigidly held in place no great strain is thrown upon the lock when the box is set up. It is also apparent that with a box construct-

ed according to and embodying the present invention that there is practically no waste of material.

What is claimed is:—

1. A tray box made from a single sheet of material and scored to provide side and end walls, one of such walls being provided with a diagonally creased corner flap to provide a supplemental attaching flap, a locking hook carried by the other wall, a receptacle for the locking hook carried by the corner flap carrying wall, and means for permanently securing the supplemental flap to the hook carrying wall.

2. A tray box made from a single sheet of material and scored to provide side and end walls, one of such walls being provided with a diagonally creased corner flap having a supplemental attaching flap, a locking hook carried by the other wall, a receptacle for the locking hook carried by the corner flap carried wall, and a fastening device for securing the supplemental flap to the other wall.

3. A tray box made from a single sheet of material and scored to provide side and end walls, a corner flap formed upon one end of one of the walls and provided with a supplemental flap, means for permanently securing the supplemental flap to the other wall, said corner flap being folded diagonally to permit one wall to be folded inwardly upon the body of the box and the other wall to be simultaneously extended outwardly, and coöperating locking means carried by the corner flap and the other wall.

4. A tray box made from a single sheet of material and scored to provide side and end walls, a corner flap formed upon one end of one of the walls and provided with a supplemental flap, means for permanently securing the supplemental flap to the other wall, said corner flap being folded diagonally to permit one wall to be folded inwardly upon the body of the box and the other wall to be simultaneously extended outwardly, a locking hook carried by the other wall, and a receptacle for the locking hook carried by the corner flap carrying wall.

5. A tray box made from a single sheet of material and scored to provide side and end walls, a corner flap formed upon one end of one of the walls and creased diagonally from the score line toward the outer edge, a locking hook formed from the corner flap but carried by the other wall for cooperation with the wall carrying the corner flap, a supplemental flap formed upon the corner flap by the severing of the locking hook, and means for permanently attaching the supplemental flap to the locking hook carrying wall.

6. A tray box made from a single sheet of material and scored to provide side and end walls, each corner of the sheet being folded diagonally from the corner of the main portion and cut to provide a triangular flap whose base is the diagonal fold, and a locking flap, whose base is the fold or score line of one of the walls, the triangular flap being disposed to fit coextensively with the wall carrying the locking hook, and its carrying wall being provided with a slit to receive the locking hook when the box is set up, and a permanent fastener for securing the triangular flap to such mentioned wall.

In testimony whereof I affix my signature.

FRANK H. HOUGHLAND.