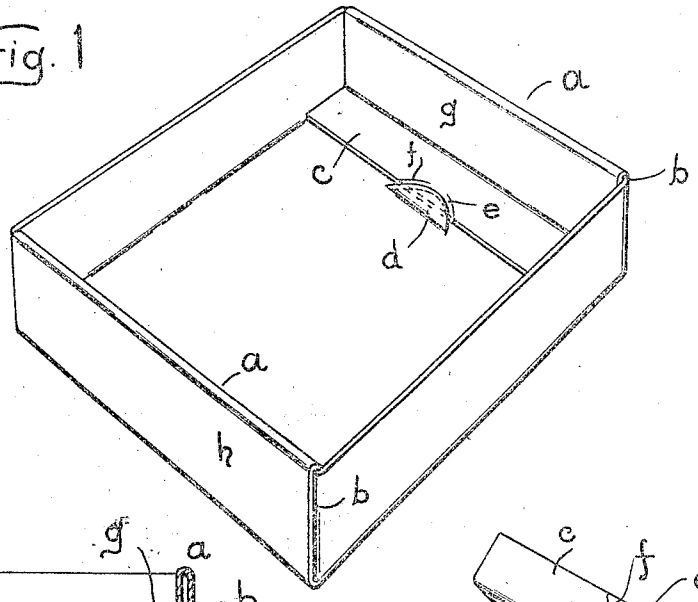
G. B. STREIT.

PAPER BOARD BOX.

APPLICATION FILED NOV. 7, 1914.

1,126,123. Patented Jan. 26, 1915.

Fig. 1



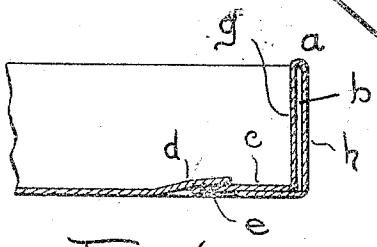


Fig. 4

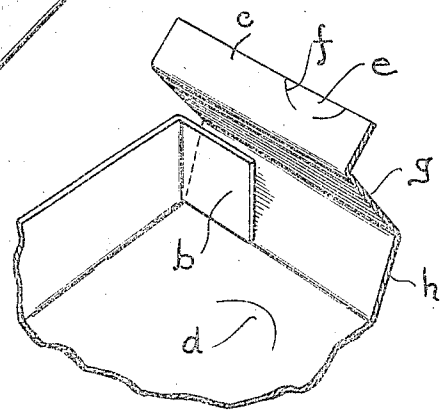


Fig. 2

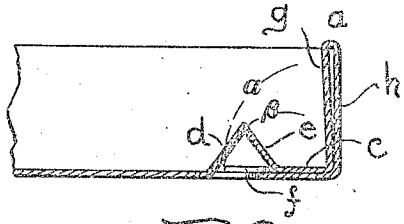


Fig. 3

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PAPER-BOARD BOX.

1,126,123. Specification of Letters Patent. Patented Jan. 26, 1915.

Application filed November 7, 1914. Serial No. 870,782.

To all whom it may concern:

Be it known that I, GEORGE B. STREIT, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Paper-Board Boxes, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to paper board boxes of the type shown in patent to R. P. Brown 525,585. One of the difficulties with the type of box shown in the Brown patent is to get the flaps under the lips that are struck out of the bottom; especially is this true with the box made out of heavy board. It has been proposed to obviate this objection by scoring the flap so it can be buckled in forcing it under the lip. Patent 698,117 to Jordan shows this improvement.

It is the object of the present invention to obviate the difficulty in another way and in a way which in no way impairs the engagement of the flap with the lip.

In the drawings, Figure 1 is a perspective of the box folded for usage. Fig. 2 is a detail showing the flap before it is slipped under the lip. Fig. 3 is a fragmentary section showing how with the use of the latch it is easier to get the flap under the lip. Fig. 4 shows how the spring action of the folded end wall holds the latch under the lip.

The type of box shown in the drawings is well known in the art, so it will be unnecessary to refer to the form of blank and the specific portions that go to make up the side walls, bottom, etc. Reference to the patent to Brown 525,585 will show the general form of construction. The side walls are locked in perpendicular position with respect to the bottom by the end walls *a*, *a*, which double-back upon themselves and lock the extensions *b*, *b* of the side walls in between the folded portions of the end walls *a*, *a*. These double end walls are each provided with a terminal flap *c* which is intended to engage under the lip *d* that is cut in the bottom of the box.

Ordinarily it would be supposed that there would be no difficulty in swinging the flap *c* and the lip *d* upwardly to a point beyond where their swinging arcs intersect so that the flap *c* can drop under the lip *d*. However, in order to provide the lip *d* with sufficient stiffness to accomplish its function of holding the flap *c* in place, it is necessary that this lip *c* have a very wide base. Consequently this lip swings with a great deal of difficulty, and if it is swung too far, the paper board will tear. It is therefore, necessary to so arrange the lip *d* and the flap *c* that the lip will not have to be raised any more than is absolutely necessary. If the paper board out of which the paper box is made is not very thick, the difficulty is not so great as the board flexes easier without tearing. Where the paper board is quite thick and stiff, great difficulty will be found in forcing the flap *c* under the lip, and in fact to make it possible to secure the flap under the lip without tearing the board, it is necessary to move the lips farther away from the end walls than is the case in the construction shown in my drawings. The farther away the lip is from the perpendicular position of the end wall, the smaller will the arc be through which the lip must be swung to allow the flap to drop under the lip. However, the moving of this lip farther into the box results in the inner strip *g* of the end wall *a* spreading farther from the outer wall *h* (Fig. 4). In fact, it will spread so far that the inner face of the end wall *a* will cease to be perpendicular but rather will be inclined, which is clearly a detriment to the box for the interior of the box will have different dimensions at the top and bottom.

Fig. 3 illustrates the nature of my improvement. It comprises cuts forming a latch or tongue *e* in the end of the flap *c* by means of the curvilinear converging slits *f*. These present a narrow base for the tongue or latch and consequently this member may easily swing. Again referring to Fig. 3, it will be seen that the inner wall *g* of the end wall *a* is pushed tightly against the outer wall *h* at the bottom. This withdraws the latch *e* somewhat from what would otherwise be an almost complete overlapping condition with respect to the lip *d*. Consequently it is easier in this position to swing the latch *e* under the lip *d*, for their swinging arcs will intersect at a lower point and consequently are shorter. The same action would take place were not the latch cut in the flap, but there are these two difficulties

encountered:—first, the entire flap *c* must be swung in order to get it under the lip *d*, and, inasmuch as it has a very long base, this swinging is rather difficult especially where the paper board is thick; second, the lip *d* being in the same position, this member *d* must be swung back quite a little farther for the flap than is required for the latch *e*. This is clearly shown by the arcs described in Fig. 3. The arc alpha is the arc described by the flap in swinging while the arc beta is the arc described by the latch *e* in swinging. It is apparent that the lip *d* will have to be bent back considerably farther in order to allow the uncut flap *c* to pass under it than it will to allow the latch *e* to pass under it, when the latch *e* has been cut in the flap. It is in this my improvement lies, for inasmuch as the lip *d* has of necessity a very broad base and is stiff, it cannot stand too much bending back especially in heavy board boxes, without tearing. Or if the position of the lip *d* is moved farther inward in the box to lessen the length of the arc through which it will have to be swung, then when the inner wall *g* resumes the position it will take by reason of the spring action of the folded end wall *a*, such a position will not be a true vertical position as shown in Fig. 4, or approximately one, but rather an inclined position, thereby making the interior dimensions of the box different at top and bottom.

It will be found that the parts may be easily engaged by pressing the thumb against the inside strip *g* and forcing it against the outer strip *h* as shown in Fig. 3, and then using two fingers to pry the lip *d* and the latch *e* upward until their arcs intersect and the latch *e* drops under the lip *d*. This pressing should be done from the bottom of the box.

What I claim is:

A box, comprising a bottom, a pair of side walls having extensions, a folded end wall comprising two strips that fold against each other to lock the extensions of the side walls in place, and a terminal flap, said terminal flap including a latch having a hinging axis between the free edge of the terminal flap and the hinging axis of the terminal flap and the said bottom of the box being provided with a lip cut in it under which the flap engages by the latch and lip being raised to allow the latch to drop under the lip, substantially as described.

In testimony whereof, I sign this specification in the presence of two witnesses.

GEORGE B. STREIT.

Witnesses:

STUART C. BARNES,

VIRGINIA C. SPRATT.