Aug. 15, 1933. P. A. SCHILLING 1,922,399

BOX

Filed Jan. 19, 1931

Fig. 2

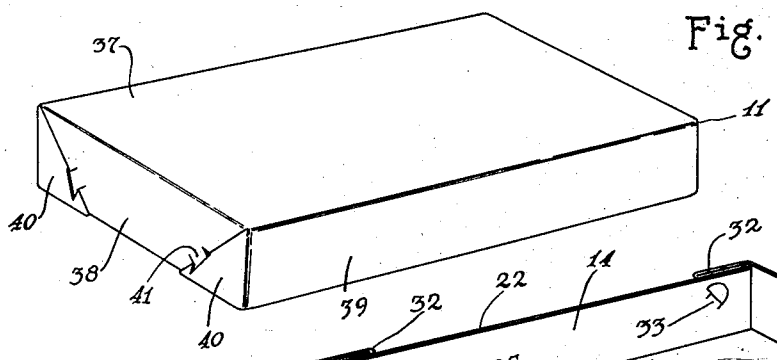


Fig. 1

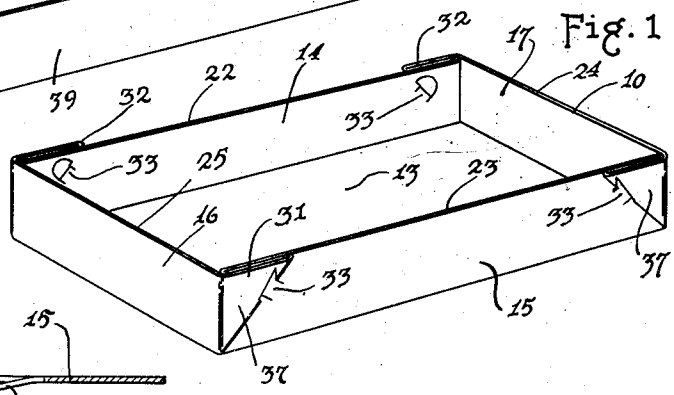


Fig. 6

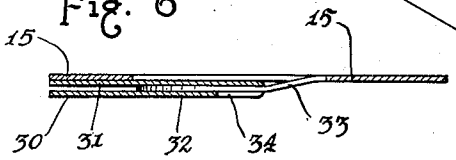
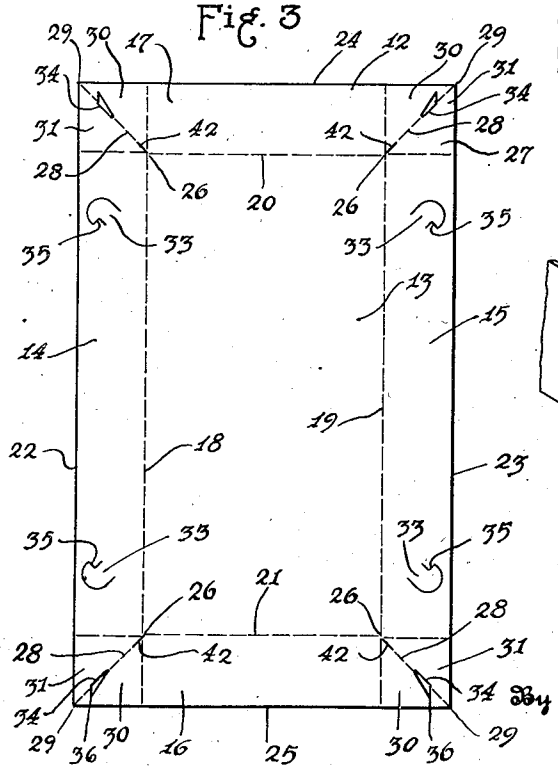


Fig. 3



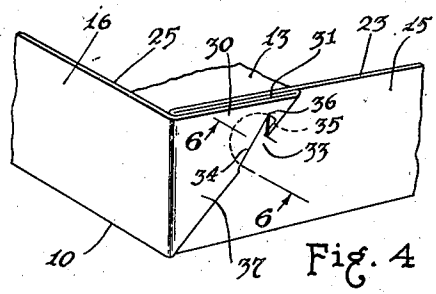


Fig. 4

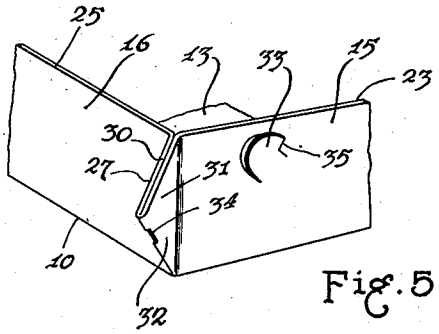


Fig. 5

Inventor

Paul A. Schilling

By Carwell & Lagaard

Attorneys

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UNITED STATES PATENT OFFICE

1,922,399

BOX

Paul A. Schilling, St. Paul, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a Corporation of Minnesota

Application January 19, 1931. Serial No. 509,741

10 Claims. (Cl. 229—31)

My invention relates to collapsible boxes and particularly to paper boxes having a bottom, side and end walls, all foldable from a single blank into erected position and locking means for holding the walls in erected position, and has for its object to provide a box, formed with the interior thereof unobstructed, to permit of more readily packing the goods within the box.

Another object of the invention resides in constructing the box with flaps at the corners thereof, adapted to overlie certain of the walls of said box upon the exterior thereof and to further provide said walls with tongues adapted to engage said flaps to hold the walls in erected position.

An object of the invention resides in providing a box which will be easy and simple to erect and which when erected will positively remain in erected position.

A still further object of the invention resides in providing a box free from folds in the walls of the box to cause the box to maintain its open position when erected.

Another object of the invention resides in constructing said flaps of double thickness of material and in providing said flaps with slots adapted to receive said tongues.

Another object of the invention resides in inserting the tongues in between the parts of said flap to completely conceal the same and to protect the tongue from injury and to prevent the disengagement of the tongue from the flap.

Another object of the invention resides in constructing the slot in the flap near the folded over edge thereof.

An object of the invention resides in constructing the slot with a notch and the tongue with a hook adapted to engage the notch for holding the tongue attached to the flap.

A feature of the invention resides in causing said notch to extend inwardly from the folded edge of the box to permit of the easy application of the tongue within the slot.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

In the drawing:

Fig. 1 is a perspective view of the body of a box, illustrating an embodiment of my invention.

Fig. 2 is a perspective view of a closure for the body of the box shown in Fig. 1.

Fig. 3 is a developed view of the blank from which the box structure shown in Fig. 1 is constructed.

Fig. 4 is a fragmentary perspective view of a corner of the box shown in Fig. 1 drawn to a larger scale.

Fig. 5 is a view similar to Fig. 4 showing the method of folding the flap and erecting the box.

Fig. 6 is a cross sectional view taken of line 6—6 of Fig. 4 and drawn to a still larger scale.

In the packing of goods in paper boxes, considerable inconvenience is encountered where tongues, flaps and like structures are disposed within the interior of the box and which are readily engaged by the articles to be placed in the box, rendering the use of the box awkward. At the same time, where tongues or similar devices are used for locking the walls of the boxes in erected position and said tongues are exposed, the tongues readily catch in various objects and become torn or loosened, so as to cause the box to fall apart. Certain boxes of similar nature are provided with folds along the walls thereof which make it difficult to cause the box to assume its erected position without accidentally collapsing the box when not intended. The present invention overcomes all these disadvantages and provides an exceedingly simple and effective box for performing the various functions for which the box was intended.

The box illustrated in this application, which is of the telescoping type, consists of a body 10 in which the goods or objects to be contained are placed and a closure 11 similarly constructed and adapted to be placed over the body 10. These parts will now be described in detail.

The body 10 is formed from a single sheet of stock designated at 12 in Fig. 3 and is provided with a bottom 13, side walls 14 and 15 and end walls 16 and 17. The blank 12 is scored along two parallel lines, 18 and 19, extending longitudinally of the blank and disposed a distance from the longitudinal edges 22 and 23 thereof, equal to the height of the box. The blank 12 is further scored along lines 20 and 21, spaced from the transverse edges, 24 and 25, of the box, the same distance as the score lines 18 and 19, and extending transversely across the box and intersecting the score lines 18 and 19 at points 26. These various score lines divide the blank 12 into sections forming the bottom 13, the side walls 15 and 14 and the end walls 16 and 17 and in addition, leave corner sections 27, which serve to hold the walls in erected position as will be presently described.

Along the corner sections 27 of the blank 12, are formed diagonal score lines 28, which extend from the intersections 26 of the previously re-

ferred to score lines up to the corners 29 of the blank, dividing the sections 27 into two parts 30 and 31. These parts are adapted to be jointly folded to overlie one another, as shown in Fig. 1, to form a flap 32 by means of which the walls may be held in erected position.

In erecting the box, the various walls 14, 15, 16 and 17 are folded out of the plane of the bottom 13 and the corner sections 27 folded along the score lines 28, bringing the parts 30 and 31 into the position shown in Fig. 5. This leaves the walls of the box in erected position and the flaps 32 extending outwardly therefrom. These flaps may then be swung into the plane of either the side walls or the end walls connected therewith and the same attached to said particular walls in any suitable manner.

For the purpose of locking the box in erected position, one of the walls of the box adjacent each of the flaps 32, is formed with a tongue 33 adapted to be struck out of the material of said wall. This tongue is adapted to be engaged within a slot 34, formed in the flap 32 near the score line 28 thereof, along which said flap is folded. The tongue 33 is insertable into said flap and when lodged therein, is substantially completely concealed between the two parts 30 and 31 of the flap. For holding the tongue 33 locked between the parts of the flap 32, said tongue is provided with a hook 35, which is adapted to engage within a notch 36 formed in the slot 34. The slot as illustrated extends up to the score line 28 and the notch 36 extends obliquely away from said score line.

To insure the folding of the flaps at the proper localities, the said flaps are slit along the score lines 28 adjacent the points of intersection 26. This causes the said flaps to fold at the proper places, so that the tongues 32 may be properly engaged within their respective slots 34.

In the erection of the box, the walls are first folded as shown in Fig. 5, with the flap 32 extending outwardly therefrom. This flap is next folded toward the adjacent wall, having the tongue 33 formed in it. As the said flap is folded toward this wall, the tongue 33 is inserted into the slot 34, which is of a length equal to the width of said tongue and which is so disposed as to readily receive said tongue. As the tongue enters into the slot, the same becomes disposed between the parts 30 and 31 of the flap 32. To hold the tongue locked to said flap, the hook portion 35 thereof is inserted behind the notch 36 and lodged against the folded section of the flap 32, as clearly shown in 34, which serves to lock the tongue in place and hold the same firmly attached to the flap. When the tongue has been so attached, the same is rigidly secured to the flap and the box firmly held in erected position. At the same time the tongue is lodged between the two parts 30 and 31 of the flap, where the same is concealed and protected. All of the corners of the box are similarly attached, which leaves the box without obstruction upon the interior as shown in Fig. 1.

The closure 11 of the box may be constructed identically the same as the body 10 and if desired may be formed slightly larger in dimension, so as to readily fit over the body 10 and telescope with respect thereto. The closure 11 may be constructed with a top 37, end walls 38 and side walls 39 all connected with flaps 40, identical with the flaps 32. However to prevent piling up of the material at the same locality in the box, the flaps 40 of the closure 11 may be turned over upon the end walls 38 of the box instead of upon the side walls and the tongues 41 cooperating therewith, formed on the end walls 38, instead of on the side walls 39. This places part of the extra material on the side walls and part on the end walls, thereby distributing the surplus material and forming a rigid and substantial box.

In using the box, the body and closure are erected as previously brought out, so that the same take the form illustrated in Figs. 1 and 2. The goods or articles to be packed within the box may then be placed in the body 10 and the closure 11 applied over the body proper. The box may then be tied together with string or tape or secured in any suitable manner.

My invention is highly advantageous in that an extremely sturdy and rigid box construction is provided. The tongue for fastening the flap in locking position is completely concealed and protected, so that injury thereto or breakage thereof is entirely prevented. The box is entirely free of obstructions upon the interior thereof, thereby greatly facilitating the packing of the goods within the box. The walls of the box when erected, readily retain their proper shape. The box can be constructed at a minimum cost and requires but a single operation in the formation of the blank. In the construction or erection of the box, neither glueing or other separate fastening means are employed.

Changes in the specific form of my invention as herein disclosed may be made within the scope of what is claimed, without departing from the spirit of my invention.

Having described my invention, what I claim as new and desire to protect by its patent is:

1. A collapsible box comprising a bottom having a side wall and an end wall folded outwardly therefrom, said side and end walls being formed with a doubled over flap lying against one of said walls and a tongue on the same wall disposed between the parts of said flap for holding said walls in erected position.

2. A collapsible box comprising a bottom, having a side and an end wall folded outwardly therefrom, a flap formed with a fold to provide folded parts and connected to the ends of both the side and end walls and adapted to lie along one of said walls, and having a slot near the fold thereof and a tongue on the wall along which said flap is disposed, said tongue being received within said slot and lying between the folded parts of said flap.

3. A collapsible box comprising a bottom, having a side and an end wall folded outwardly therefrom, a doubled over flap, folded along the middle line thereof and connected to the ends of both the side and end walls and adapted to lie along one of said walls, and having a slot at the middle line thereof and a tongue on the wall along which said flap is disposed, said tongue being received within said slot and lying between the folded parts of said flap.

4. A collapsible box comprising a bottom, having a side and an end wall folded outwardly therefrom, a flap formed with folded parts and connected to the ends of both the side and end walls and adapted to lie along one of said walls, and having a slot in the outer portion thereof and a tongue on the wall along which said flap is disposed for insertion into said slot, between the folded parts of said flap, said slot having a notch at one end thereof and a hook on said tongue for engagement within said notch.

5. A collapsible box comprising a bottom, having a side and an end wall folded outwardly therefrom, a flap formed with a fold to provide folded parts and connected to the ends of both the side and end walls and adapted to lie along one of said walls, and having a slot in the outer portion thereof and a tongue on the wall along which said flap is disposed for insertion within said slot, between the folded parts of said flap, said slot having a notch at one end thereof extending inwardly from the fold of said flap and a hook on said tongue for engagement within said notch to hold the tongue attached to said flap.

6. A collapsible box formed from a blank, rectangular in shape, said blank having parallel spaced longitudinal score lines and spaced parallel transverse score lines, dividing said box into a bottom, side walls and end walls, said blank further having diagonal score lines extending from the intersections of the said first named score lines to the corners of the box, said box being foldable along said score lines to bring said walls into erected position and to form doubled over flaps at the corners of the box, adapted to be folded along certain of the walls of the box, said blank having slots formed in the corners of the box in close proximity to said diagonal score lines and extending in the same direction as said score lines and tongues on certain of the walls of said box for engagement within said slots.

7. A collapsible box comprising a bottom having a side wall and an end wall folded outwardly therefrom, a doubled over flap having two parts connected to the ends of both the side and end walls, said flap lying along one of said walls and having a slot therein and a single tongue formed solely from the stock of the wall along which said flap is disposed, said tongue being received within said slot and lying between the overlying parts of said flap.

8. A collapsible box comprising a bottom having side and end walls folded outwardly therefrom, a doubled over flap having two overlying parts formed with a fold and connected to the ends of both the side and end walls, said flap lying along one of said walls and having a slot extending in substantially the same direction as the fold thereof, and a tongue on the wall along which the flap is disposed, said tongue being received within said slot and lying between the overlying parts of said flap.

9. A collapsible box comprising a bottom, side and end walls folded outwardly therefrom, a flap connected to the ends of the end and side walls and lying along one of said walls, said flap having two overlying parts and being formed with a slot near one of the edges thereof and a tongue on the wall along which the flap is disposed, said tongue extending through said slot and lying between the overlying parts of said flap.

10. A collapsible box comprising a bottom, side and end walls folded outwardly therefrom, a flap connected to the ends of the end and side walls and lying along one of said walls, said flap having two overlying parts and being formed with a slot, a tongue struck out of the wall of the box along which the flap is disposed to leave an opening therein, said tongue extending through the slot and lying between the overlying parts of said flap, the outer part of said flap being intact at the locality of said tongue to cover the opening formed in said wall by said tongue.

PAUL A. SCHILLING.