

D. J. HUDSON.
 COLLAPSIBLE BOX.
 APPLICATION FILED JUNE 10, 1909.

933,454.

Patented Sept. 7, 1909.

Fig. 1.

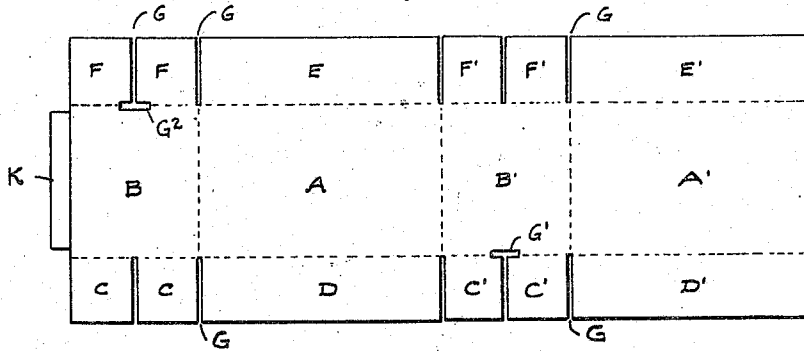


Fig. 2.

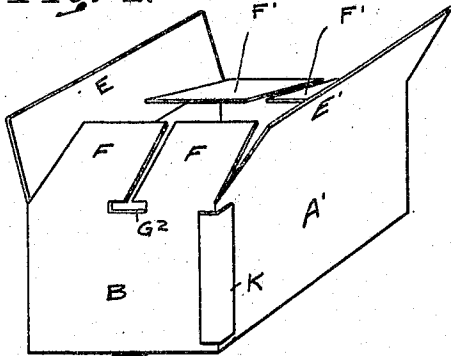


Fig. 3.

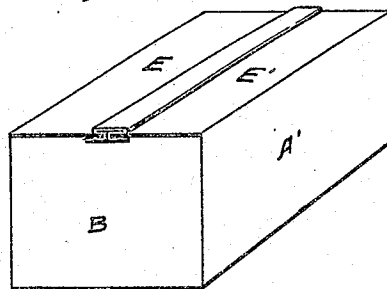


Fig. 4.



Fig. 5.

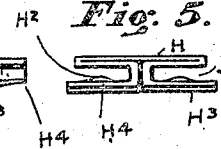
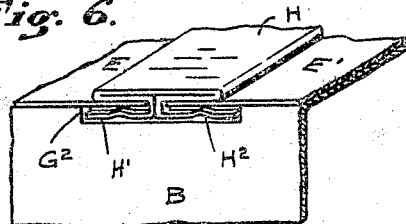


Fig. 6.



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UNITED STATES PATENT OFFICE.

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COLLAPSIBLE BOX.

933,454.

Specification of Letters Patent.

Patented Sept. 7, 1909.

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To all whom it may concern:

Be it known that I, DAVID J. HUDSON, a citizen of the United States, and residing at the city of Muncie, in the county of Delaware and State of Indiana, have invented a new and useful Collapsible Box, of which invention the following is a specification.

This invention relates to improvements in collapsible boxes or containers which are composed of a blank or sheet of fibrous material or stout paper known as box-board, and the sides of which blank are divided into flaps or leaves so that the blank is capable of being folded and secured into the form of a box.

Divers forms of blanks for boxes of this character have been hitherto devised wherein glues or cements, and other means have been employed to effect the joining together of the flaps and body portions of the box. Boxes as hitherto constructed of the box-board have been comparatively inconvenient and difficult of perfect construction on account of the necessity of the application of glue as a binding element, and boxes of such make have been wholly ineffective where subjected to the effect of humid or damp atmosphere, as the same are liable to become disjointed and incapable of retaining their contents.

The objects of this invention are to provide a box or container of the character referred to in which the flaps of the blank will be held securely together and to the body portion of the blank without the use of glue and in such manner that the box may be formed quickly, economically and will be well braced, strong and durable.

This invention is intended especially for use as a container for articles of merchandise of uniform dimensions, such as paste-board packages, fruit jars, cans and the like.

The objects of my invention are accomplished by the new construction, combination and arrangement of parts described herein, illustrated in the accompanying drawings, and clearly defined in the appended claims.

Corresponding parts are designated by similar characters of reference throughout the views in the drawings, in which—

Figure 1 represents the new form of blank or sheet of which my improved box is formed. Fig. 2 is a perspective view of my improved

box in partially formed condition. Fig. 3 is a perspective view of the box complete. Fig. 4 is a side view and Fig. 5 is a front end view of the connector-strip. Fig. 6 is a perspective view of the connector strip and a portion of the box.

The portions A—A¹ and B—B¹ of the blank, form the sides and ends, respectively of the box. By the transverse slits, as shown in Fig. 1, are provided the flaps which will constitute the other sides of the box.

For convenience in the description hereinafter, of the mode of folding this blank into box form, the flaps are designated as C—C¹ D—D¹ E—E¹ and F—F¹. The inner end of the slit G dividing one flap of each pair is terminated in the form of a slot indicated by the letters G¹ and G² the function of which slots will be presently referred to.

H designates the connector strip, two of which are provided for each box and the function of which said strip is to engage and securely hold together the meeting edges of the flaps. This connector strip consists of a long metal sheet whose sides are folded inwardly an equal distance and are then folded at substantially a right angle and thence outwardly whereby the grooves J are formed in which grooves the edges of the flaps will be retained. The structure of this connector strip will be readily understood by reference to Fig. 4, Fig. 5 and Fig. 6. The lips H¹ of this connector strip are each provided with the continuously extended bead or ridge H² which terminates in an easy bevel at the forward end of the strip where the extreme ends of the lips each have the curved portion H³ and the nose H⁴.

In the body blank the folds occur at the dotted lines and the outer end of the side A¹ is brought into engagement with the outer end of the side B and these ends are there bound together by a flexible strip K of muslin or canvas. The blank in this form having the ends thus joined may lie flat and in convenient form for handling on a suitable work table or bench. The sides A—A¹ being then parallel, the flaps C—C and C¹—C¹ are bent inwardly, and then the flaps D—D when bent inwardly will be in alignment and the flaps C—C and C¹—C¹ will lie in such position with reference to each other that the edges of the slits of the flaps C—C and C¹—C¹ and the edges of the flaps D

and D¹ will be substantially in registration with each other. The connector strip is then disposed with its nose in the slot G¹ where it will engage the corners of the flaps C¹ and C² and of the flaps D and D¹. As the connector strip is pushed farther inwardly the corners of the flaps C and C are engaged and with the further inserting of the connector strip its end will abut against the inner face of the side B. There is such resiliency of the lips H¹ that in the act of pushing or forcing the strips into the above described position the edges of the flaps will have been firmly grasped and will be held securely; the bead H² will have made for itself a niche or groove in which the bead will snugly reside and whereby the grip of the edges of the flaps will be tenacious, and continuous throughout the entire length of same. A substantial amount of force being necessary to place the connecting strip in position, it will not become dislodged. The packages or containers of merchandise are then placed in the box. When the flaps F—F¹ and F²—F³ are folded over they will lie on top of the packages; the flaps E—E¹ are then folded over and their edges and the interior edges of the flaps F and F¹ will register with each other. The second connector strip is then inserted into the slot G² and in pushing the same into the position as shown in Fig. 3, the edges of the flaps will have been gripped and will be held securely together in the manner as hereinbefore described for the flaps on the opposite side of the box.

Results of my invention are that the blank form of the character described, is rendered effective and practicable for constituting a box intended for the carriage of articles of bulk and weight, which heretofore have of necessity been carried in containers made of wood or metal.

By providing a blank of the form described and the newly devised connecting strip shown, it is not only possible to connect together the meeting flaps or sides of the box without the use of glue, or nails or other such means, but the line or lines of connection, with reference to the corners, and surfaces of the box are such that the strains and stress from without and from within to which the loaded box is subject, are very effectively withstood.

Boxes made in accordance with my invention will withstand the most severe strains without damage, and may be made rapidly and economically. The connecting strips besides completely closing the space between the meeting edges of the flaps or sides, will hold the sides of the box together tenaciously, the box will be unaffected by atmospheric conditions and will be strong and durable.

If it is desired to open my improved box

without cutting or mutilating same the rear end of the connector strip is grasped by a pliers and pulled out of the closed position when the flaps may be opened out as shown in Fig. 2.

What I claim as my invention and desire to secure by Letters Patent of the United States, is—

1. A collapsible box comprising a body blank provided with complementary flaps or leaves that will register with each other when folded into the angular position to form the sides of said box substantially as described, of a connecting member to bind the edges of said flaps together consisting of a metal sheet having its sides bent toward each other thence at an angle and outwardly to form oppositely disposed grooves to receive and to hold the edges of said flaps, substantially as and for the purposes set forth.

2. A collapsible box comprising a body blank having transverse slits from the edges inwardly toward the center of said blank to form complementary side flaps of length substantially that of the box, and to form complementary end flaps of length substantially that of the width of the box, the last named flaps being divided centrally so that when the said side and end flaps are folded into positions of angularity with reference to the body portions of the blank, the longitudinal edges of the side flaps will register with the central edges of the end flaps, means to secure together the longitudinal edges of the said side flaps and the central edges of the end flaps.

3. A collapsible box comprising a body blank having transverse slits from the edges inwardly toward the center of said blank to form complementary side flaps of length substantially that of the box, and to form complementary end flaps of length substantially that of the width of the box, the last named flaps being divided centrally the dividing slit of one end flap on each side of the box being terminated by a slot disposed at a right angle thereto, a connector member adapted to be passed through the said slot and to bind together the longitudinal edges of the said side flaps and the central edges of the end flaps, and which said member is composed of a metal sheet having its sides bent toward each other then at an angle and outwardly to form oppositely disposed grooves to receive and to hold the edges of said flaps, substantially as described.

4. In a device of the kind described, the combination of a body blank provided with complementary flaps or leaves that when folded into position of angularity with reference to the body portion of the body blank, will lie face to face and whose edges will register with each other, of a connector member to bind together the edges of the said flaps, con-

sisting of a resilient metal sheet having its sides bent toward each other thence at an angle and outwardly to form oppositely disposed grooves or recesses, the lips H¹ thereof being provided with a longitudinal bead H², the transverse curved portions H³ and the noses H⁴, substantially as described.

In testimony whereof I sign my name to this specification in the presence of two subscribing witnesses.

DAVID J. HUDSON.

Witnesses:

SAMUEL G. HUDSON,
EPHRAIM RIFFLE.