

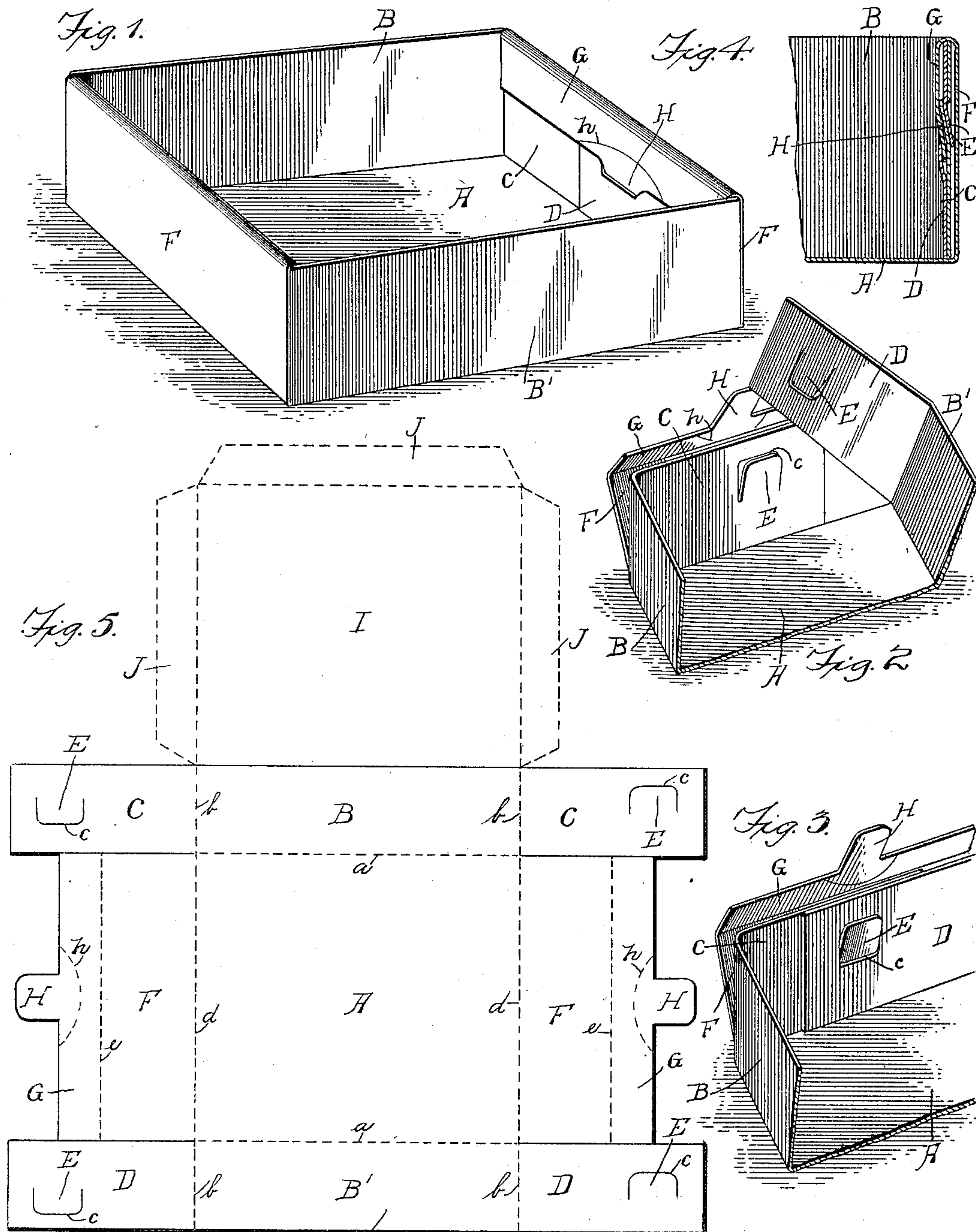
No. 630,007.

Patented Aug. 1, 1899.

H. M. RUSSELL.
FOLDING PAPER BOX.

(Application filed Apr. 3, 1899.)

(No Model.)



Witnesses

Ralph A. Shepard,
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UNITED STATES PATENT OFFICE.

HARLOW M. RUSSELL, OF SAUGUS, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO ROBINSON Y. RUSSELL, OF SAME PLACE.

FOLDING PAPER BOX.

SPECIFICATION forming part of Letters Patent No. 630,007, dated August 1, 1899.

Application filed April 3, 1899. Serial No. 711,559. (No model.)

To all whom it may concern:

Be it known that I, HARLOW M. RUSSELL, a citizen of the United States, residing at Saugus, in the county of Essex and State of Massachusetts, have invented a new and useful Folding Paper Box, of which the following is a specification.

This invention relates to paper boxes, and more especially to the type of folding boxes that can be set up without the aid of glue or other like material, while at the same time being capable of being shipped and stored in a flat condition.

To this end the invention primarily contemplates an improved folding or knockdown paper box having a blank of simple configuration and constructed of a minimum number of parts, while at the same time requiring a small amount of labor in stripping—that is, in separating the waste from the blank.

A further object of the invention is to construct a paper-box blank in such a way as to require a minimum amount of stock and also permitting the box to be easily and quickly set up.

Another object of the invention is to provide the box-blank with improved means for firmly interlocking or fastening the parts together in their set-up condition, and thereby positively preventing a spreading or separation of the box parts from internal pressure or careless handling, and in the accomplishment of this object it is the purpose of the present invention to construct the blank with a total absence of slots or holes for receiving tucks, flaps, or tongues, thereby rendering it unnecessary to remove or strip off any piece of the stock except around the marginal edges of the blank.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

While some of the details of construction are necessarily susceptible to modification without departing from the principle of the invention, still the preferred embodiment of

the latter is shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a complete folding paper box set up from the blank, constructed in accordance with the present invention. Fig. 2 is a detail in perspective of an end portion of the box, showing the position of the parts when the fastening-flap extensions are about to be interlocked. Fig. 3 is a similar view showing the fastening-flap extensions interlocked and the end-flap extension about to be folded thereover to bring the tuck-ear into position for insertion through the slit of one of the fastening-flaps. Fig. 4 is a detail vertical sectional view of one end wall of the completed box, the line of section including the interlocked parts. Fig. 5 is a plan view of the blank which is employed to form the box.

Referring to the accompanying drawings, the numeral 1 designates the blank of the box, which is of a general rectangular configuration and is cut from a single sheet of paper or other suitable material to form the complete box, and in order that the construction of the blank may be fully understood it is to be observed that the solid lines on Fig. 5 of the drawings indicate the cuts and slits in the blank, while the dotted or broken lines indicate the scores where the folds are to be made.

The single blank or sheet 1 has scored from the opposite sides thereof, by means of the score-lines *a*, the opposite folding side portions B and B', respectively, of the box, and between these side portions the blank is provided with the usual rectangular bottom piece A. The opposite folding side portions B and B' are provided at their ends with the rectangular fastening-flap extensions C and D, respectively, which are scored from the respective side portions by means of the score-lines *b*, it being observed that the fastening-flap extensions C are extended from the opposite ends of the side portion B, while the flap extensions D are extended from the opposite ends of the side portion B'. The said fastening-flap extensions C and D at each end of the side portions B and B', respectively, have cut therein the arched slits *c*, forming correspondingly-shaped locking-tongues E,

disposed transversely of the flap extensions, and while, broadly speaking, the slits *c* are arched, still in the practical construction of the blank such slits are preferably of a substantial U shape, whereby the side portions thereof will be disposed in a substantially vertical plane when the box is set up, as may be clearly seen from Figs. 2 and 3 of the drawings. Furthermore, the transversely-disposed locking-tongues E of the flap extensions C and D at the same end of the box-blank are reversely arranged with relation to each other, so that said tongues will have an interlocking engagement one behind the other when the parts of the blank are folded to set up the complete box. It will also be noted that while the locking-tongues E are preferably located at the same distance from the score-lines *b* for their respective flaps C and D the locking-tongue E on the flap extension D is usually placed substantially at a central point between the side edges of said flap extension D, while the locking-tongue E on the flap extension C is arranged at one side of or above the longitudinal center of said flap extension C, whereby the two tongues may have a proper interlocking engagement. In other words, said locking-tongues on the flap extensions at the same end of the box-blank are respectively disposed in different planes with reference to the longitudinal centers of the flaps carrying the same.

Although in the practical construction of the box-blank, while the locking-tongues are located at the same distance from the score-lines *b* for their respective flaps, still the requirements of the particular box may necessitate a different arrangement of the tongues with reference to said score-lines—that is, the locking-tongue E of the flap extension D may be disposed farther than one-half the width of the box from the score-line *b*, while the locking-tongue E on the directly-opposite flap extension C is brought correspondingly nearer the score-line *b*, but irrespective of the distance between the locking-tongues E and the score-lines *b*, such tongues are designed to come together and interlock in the same vertical plane when the flaps C and D are folded inward, so as to overlap at the end of the box.

Between the flap extensions C and D at both ends of the box-blank the rectangular bottom piece A has scored from the opposite ends thereof, by means of the score-lines *d*, the folding end portions F, forming the main end pieces of the box and adapted to be folded against the outer side of the flaps C and D when folded inward and overlapped. The said folding end portion F at each end of the box-blank is provided with an end-flap extension G, scored therefrom by the score-lines *e* and of the same length as the end portion F, so as to fold over the top edges of the flap extensions C and D and be held at the inner side of said flap extensions, as plainly shown in Fig. 1 of the drawings. The flap extension

G, extended from each folding end portion F of the box-blank, is provided centrally between its ends with an offstanding narrow tuck-ear H, and contiguous to the base of said ear the said end-flap extension G, carrying the same, is provided with a segmental score or crease *h*, which enables the tuck-ear H to bend independently of the flap extension *g*, so as to prevent any uneven bending or cracking of the stock when setting up the box and thrusting the tuck-ear into its locked position. The said narrow tuck-ear H of each of the flap extensions G is made somewhat less in width than the arched slits *c* and is arranged in such a position that it will slip into the slit *c*, exposed at the inner side of the end wall of the completed box when set up.

In setting up the box each end portion of the blank is manipulated in the same manner, so an explanation of one end portion will suffice for the other. The opposite fastening-flap extensions C and D at the same end of the box are grasped and folded inward and at the same time brought into vertical positions at the end of the bottom piece A after the side portions B and B' of the blank have been folded upward to an upright position. One of said fastening-flap extensions—for instance, the flap extension D—is brought in front or inside of the other flap extension C, with which it overlaps, so that when the locking-tongues E of said flap extensions are brought into vertical alignment by pressing the said tongues out of their slits the locking-tongue of the flap D may be inserted through the slit and behind the locking-tongue of the flap C, thereby securely fastening these two flaps together, and at this point it will be noted that by reason of the fact that the side portions of the slits *c* when the tongues are thus interlocked are disposed in a substantially vertical plane any tendency of the two flap extensions to spread apart or swing out of engagement is effectually resisted. In other words, there is an interlocking action at the side edges of the tongues E of both flaps C and D which positively prevents disengagement of the flaps except by manual manipulation. When the fastening-flap extensions are interlocked in the manner described, the end-flap extension C is carried over the top edges of the said flap extensions C and D and the tuck-ear H is thrust into the slit *c* of the flap extension D, which is exposed at the inner side of the box.

While the box described is of the open type designed to be closed by a removable cover of some character, this cover may be formed integral with the blank itself, as indicated by dotted lines in Fig. 5 of the drawings. This would simply necessitate cutting the blank with a rectangular top piece I, scored from one of the folding side portions and provided with one or more marginal tucks J, adapted to be tucked inside of the box in the usual manner when the same is set up.

The preferred embodiment of the invention

has been fully described; but it will be understood that changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a paper box, the blank provided at its ends with fastening-flaps having therein arched slits forming correspondingly-shaped locking-tongues, the locking-tongues of the separate flaps being reversely arranged with reference to each other, and adapted to interlock in a vertical plane, substantially as set forth.

2. In a paper box, a blank provided at its ends with fastening-flaps having therein U-shaped slits forming correspondingly-shaped locking-tongues, the locking-tongues of the separate flaps being reversely arranged with reference to each other, and also respectively disposed in different planes between the side edges of the flaps carrying the same, substantially as set forth.

3. In a paper box, the blank provided at its ends with fastening-flaps having therein U-shaped slits forming correspondingly-shaped locking-tongues, the locking-tongues of the separate flaps being reversely arranged with reference to each other and adapted to be in-

serted one through the slit of the other in a vertical plane, whereby the vertical side edges of the slits will interlock, substantially as set forth.

4. In a paper box, the blank provided at its ends with fastening-flaps having therein arched slits forming correspondingly-shaped locking-tongues adapted to interlock in a vertical plane, whereby one of the slits is exposed at the inner side of the box when set up, said blank being further provided with an end flap carrying a narrow tuck-ear adapted to be inserted in said exposed slit, substantially as set forth.

5. A blank for paper boxes, consisting of a single-piece sheet provided with a central bottom piece having at the sides thereof folding side portions provided with fastening-flap extensions at their ends, having therein arched slits forming correspondingly-shaped locking-tongues, said central bottom piece being further provided at its ends with folding end portions having integral flap extensions provided with narrow tuck-ears projected therefrom, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HARLOW M. RUSSELL.

Witnesses:

DAVID MEAD,
ANNA W. MEAD.