

(No Model.)

2 Sheets—Sheet 1.

H. S. MUNSON.

PAPER BOX.

No. 288,254.

Patented Nov. 13, 1883.

Fig. 1.

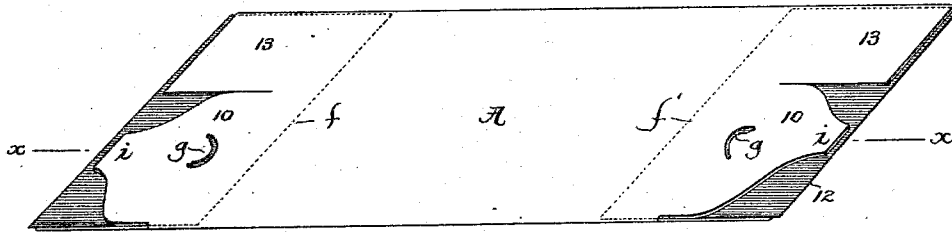


Fig. 2.

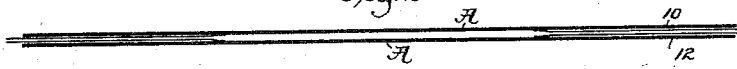


Fig. 3.

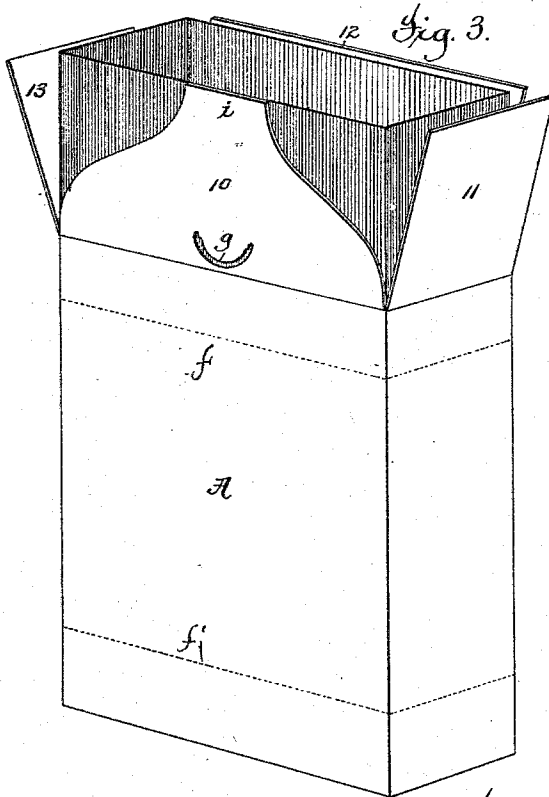


Fig. 4.

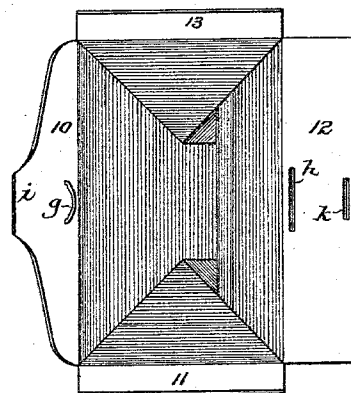


Fig. 5.

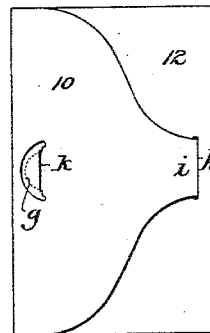
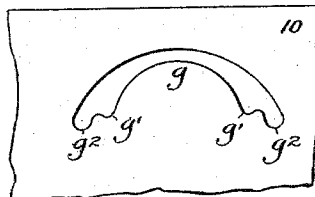


Fig. 6.



Attest:

Geo. M. Graham
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Inventor,

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Attys.

(No Model.)

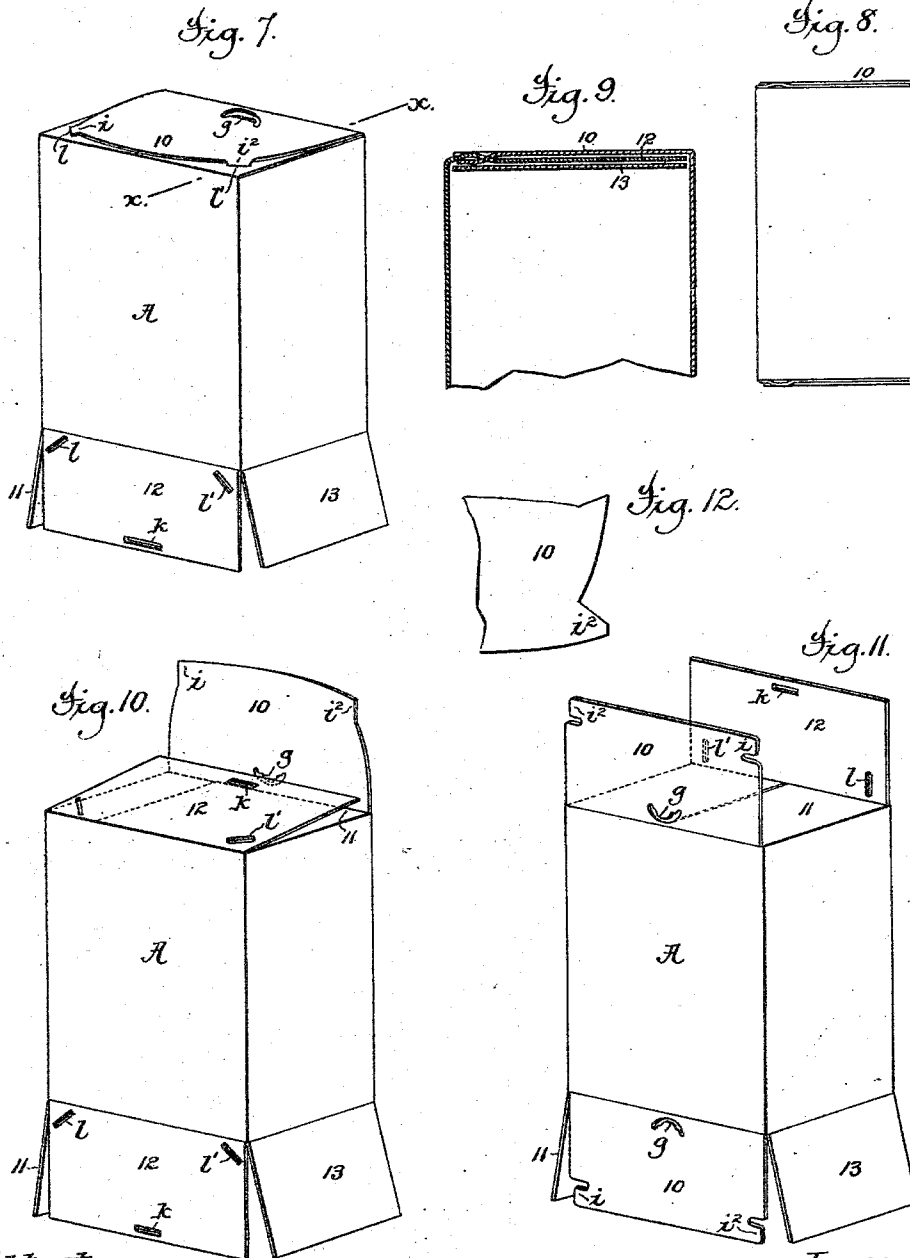
2 Sheets—Sheet 2.

H. S. MUNSON.

PAPER BOX.

No. 288,254.

Patented Nov. 13, 1883.



Attest:
A. N. Jasbena.
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Harvey S. Munson,
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UNITED STATES PATENT OFFICE.

HARVEY S. MUNSON, OF NEW HAVEN, CONNECTICUT.

PAPER BOX.

SPECIFICATION forming part of Letters Patent No. 288,254, dated November 13, 1883.

Application filed April 9, 1883. (No model.)

To all whom it may concern:

Be it known that I, HARVEY S. MUNSON, a citizen of the United States, residing in the city of New Haven, county of New Haven, and State of Connecticut, have invented certain new and useful Improvements in Paper Boxes, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The inventions embraced herein relate particularly to "knockdown" paper boxes having end-closing flaps, the interlocking members of which have front and rear fastenings, and in part, generally, to boxes that open and close at their ends.

The subjects-matter of invention embraced in this case are withdrawn from my application for Letters Patent filed in the United States Patent Office October 3, 1877, one of which subjects-matter is further illustrated herein by Figure 11.

The inventions now to be described are improvements upon the box forming the subject-matter of Letters Patent of the United States No. 164,099, granted June 8, 1875. A box constructed as in said patent, while advantageous and meritorious to a large degree and practicable for many uses, has two defects, viz: The front flap, which carries a single central locking-tongue, requires the removal of the side portions of the flap, whereby the main or forward portion of the flap, being secured at but one point, bulges upward in practical use, and thus renders the fastening liable to derangement, this structure also operating to break up the surface of the end of the box and prevent the utilization of said end for the purpose of carrying a printed inscription. The other defect is found in the rear fastening or locking tongue, the angles of which, forming the bearing-shoulders, and the slits which define the points of union of the tongue with the body of the flap, being so shaped as to render the tongue liable to ready rupture, whereby its fastening power is impaired. These defects are avoided by my improvements, which consist, first, in a knockdown box provided with end-closing flaps, the interlocking members of which are provided with a central rear tongue-and-slot fastening, and with a front fastening, consisting of a tongue and slot at

each of the two corners of the last or outermost closing-flap, by which structure not only is the end of the box provided with an even or unbroken surface-area approximately equal to that of the cross-sectional area of the box, thus affording a surface adapted to bear a printed inscription; but said outermost flap is secured at such points as to hold it snugly down upon the other flaps, and thus expose no edge liable to be caught and upturned in handling the box; second, in forming the locking-tongue of the rear fastening with curved edges at suitable points, thereby avoiding any angular form that would operate to readily start a tear when a strain is put upon the material, as is necessary in performing the interlocking of such a tongue with its holding slot or pocket.

In the accompanying drawings, Fig. 1 represents a knockdown box folded flat, which embodies a portion of the improvements. Fig. 2 represents a longitudinal sectional elevation of the same. Fig. 3 represents the same when set up for use, its lower end being closed and its upper end open. Fig. 4 represents a top view of the same, and shows an interior wrapper as folded, while the end-closing flaps are spread open. Fig. 5 is a plan view of the box with its end closed and locked. Fig. 6 represents by an enlarged plan view the structure and form of the rear fastening-tongue of the outer closing-flap. Fig. 7 represents by a perspective view a knockdown box embodying another portion of the improvements, the bottom end of said box being shown as open and the upper end as closed. Fig. 8 represents a side elevation of said box. Fig. 9 represents an enlarged sectional elevation of the same on the line *x* of Fig. 7. Figs. 10 and 11 show modified structures embodying a portion of the improvements. Fig. 12 shows by an enlarged view one of the tongues of the front fastening.

The boxes to which these inventions are applicable are of that class made from paper, card-board, straw-board, or similar material that may be cut into form and creased or indented upon folding lines to enable a blank to be brought into tubular or box form, but preferably to such as are rendered capable of folding flat for storage or shipment, as in Fig. 1,

and to be set up into tubular form to receive their contents, as in Figs. 2, 7, 10, and 11, and have their ends closed to retain said contents, as in Figs. 5, 7, 10, and 11. It therefore being understood that these improvements may be applied to a box the body of which retains its rigid tubular form, or to one capable of being knocked down, the description will be confined to the latter class.

The body A of the box may be rectangular or polygonal, and may be provided with an interior wrapper or lining, as B B', if desired, which wrapper or lining, when used, will consist of light paper or similar material cut to proper width and length and united to the interior of the box, so as to project from either or both ends thereof; but as no claim is made herein to such lining no further description of the same is here necessary, except to say that it is shown as pasted to the inside walls of the box at the lines *f* or *f'*, and protrudes to an extent rendering it capable of being folded in any manner to close the end, irrespective of the closing-flaps, as the instances shown in Figs. 4 and 11, thus interfering in no wise with the operation of said closing-flaps.

The ends of the various boxes illustrated are closed and secured by means of four end-closing flaps that project from the body of the box and are marked, respectively, 10 12 11 13, the flaps 11 13 being extensions of the sides of the body and the flaps 10 12 extensions of the front and rear of the body, which flaps 10 12 are provided with means for interlocking one with the other over or upon the flaps 11 13, thus closing and securing the end. Thus in the forms shown the blank, having had its edges secured together, is "set up" into tubular form, and has its closing-flaps bent inwardly to close the end as follows: The flaps 11 13 are first so manipulated, then the flap 12 is bent down onto them, and, lastly, the flap 10 is bent inwardly and secured to said flap 12 by the interlocking means.

In the structure shown in Figs. 1 to 5 the interlocking means are as follows: The rear fastening is composed of a tongue, *g*, projecting backward, near the rear part or hinge-joint of the flap 10, which tongue is capable of entering into a slot or pocket, *k*, formed in and near the front edge of the flap 12. The front fastening is composed of a central tongue, *i*, formed by cutting away the sides of the flap 10, so that the same taper enough to constitute such a tongue as is adapted to enter a pocket or slot, *h*, formed near the rear part or hinge-joint of the flap 12. In engaging these parts the flap 12 is laid centrally, followed by the flap 10, the tongue *g* of which is first entered into the slot *k*, whereupon the tongue *i* is bent so as to enter it into the slot *h*, when the flaps will be secured, as shown in Fig. 5. In this manipulation it has been found in practice that there is great liability of tearing the tongue *g*, and, again, that such rupture often occurs in handling the boxes when packed with

their contents. To obviate this and to secure a perfect operation of this lock, I construct the locking-tongue with two sets of shoulders or bearing-points, one set to constitute the hinge or bending joints *g'*, whereby the tongue *g* may be given a considerable play while being bent downward for insertion into the slot or pocket *k*, (this joint being one of the points of rupture common to the old form with angles or abrupt lines,) the other set constituting the shoulders or stops *g'*, which bear, after the tongue is inserted into the pocket, against the body of the flap 12 by projecting beyond the ends of said pocket, and thus act to retain the locking-tongue in place in the pocket or slot and to press the flap 12 into a proper direction to lay it flat upon the flaps 11 13, as shown in Fig. 5, which shoulders *g'* are other points easily ruptured or torn in the old form. The improvements applicable to this tongue *g* consist in forming its shoulders *g'* and bearing-points *g''* by curved cuts which present no angular points, as in Fig. 6, and the opening made in the paper when detaching such tongue will also, preferably, be curved at all points. This formation of the shoulders *g'* and bearing-points *g''* of the tongue will, as is apparent, constitute a locking-tongue that has no tendency to tear when strained in locking it, as is the case in the former structure. While such a box, constructed, as it is, with a central rear fastening and a central front fastening for its closing-flaps, forms a desirable and valuable article of manufacture, it is not free from defects which militate against its general adoption. In boxes of its character, largely used for packing material which requires reference or descriptive matter printed upon the exterior of the box, and especially upon the ends thereof, the form of the flap 10 so breaks up the surface of the end as to destroy its usefulness for bearing an inscription. So, too, the single fastening for the front edge of said flap renders the same quite liable to have its side edges turned up, or its body bowed or bulged outward by the elasticity of the material composing it, thus destroying its appearance and exposing its locking means to disengagement in handling. To avoid these defects I provide a box of the class named herein with not only the rear fastening device, consisting of the tongue *g* and the slot *k*, whereby the flap 12 is stretched rearwardly and drawn down flat upon the flaps 11 13, but supply the flap 10 with locking-tongues at its front corners, as in Figs. 7, 10, 11, whereby, while its area is extended to afford an enlarged smooth surface for the reception of a printed description, a duplex fastening means is provided, whereby its extended edges are secured at such points as to hold its entire body flatly down upon the underlying flaps, thus forming a means for closing the ends of such a box that will hold the flaps snugly upon each other without liability to bulge. The removal of this tendency to bulge is due to the straining

or leverage of the rear fastening as opposed to the hold obtained by the locking-tongues at the front corners of the outermost flap.

The structure of front fastening devices preferred for use in connection with the central rear fastening device is shown in Fig. 7. These consist of tongues *i'* and *i''*, formed by a suitable fashioning of the corners of the flap 10, which tongues, projecting somewhat laterally, are adapted to enter slots or pockets *ll'*, cut angularly in the flap 12, to receive them. These tongues may be given the shape shown in Fig. 12, in which case the slots or pockets *ll'* will be made more nearly parallel with the side edge of the top of the box. The said tongues *i'* *i''* may be constituted by cutting the flap 12 so as to form the corners into tongues, as shown, adapted to enter the angular arrangement of slot or pocket. So, too, as adapted to co-operate with slots or pockets arranged substantially parallel with the sides of the box end, these tongues may be made to extend laterally, as in Fig. 11. In closing such a box end the flaps 11 13 are first bent over the end of the box, followed by the flaps 12 10, the latter of which has its rear fastening adjusted first, after which its final tongues are entered into their pockets. This done, the several flaps will be found to lie snugly and smoothly upon each other, as shown in Figs. 8 and 9, and consequently will present no outwardly-bent parts.

While this division of my said application, filed October 3, 1877, shows various forms of interior linings for boxes, that feature is not claimed, and the following is alone claimed herein:

1. A paper box provided with end-closing flaps 11 13 12 10, the two outermost of which are provided with a central rear fastening, and with a front fastening at each of the corners, whereby said outermost flaps are interlocked, substantially as described.

2. In a box-fastening, the locking-tongue connected to the body of the closing-flap by means of curved hinge or bending joints *g'*, substantially as described.

3. In a box-fastening, a locking-tongue arranged for interlocking with a slot or pocket, and constructed with curved shoulders or stops *g'*, substantially as described.

4. The locking-tongue constructed with curved hinge or bending joints *g'* and curved shoulders or stops *g'*, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HARVEY S. MUNSON.

Witnesses:

T. H. PALMER,
A. N. JASBERA.