(No Model.) 3 Sheets—Sheet 1.

# E. J. TRUM.

## PAPER BOX.

No. 371,230. Patented Oct. 11, 1887.

Fig: 1.

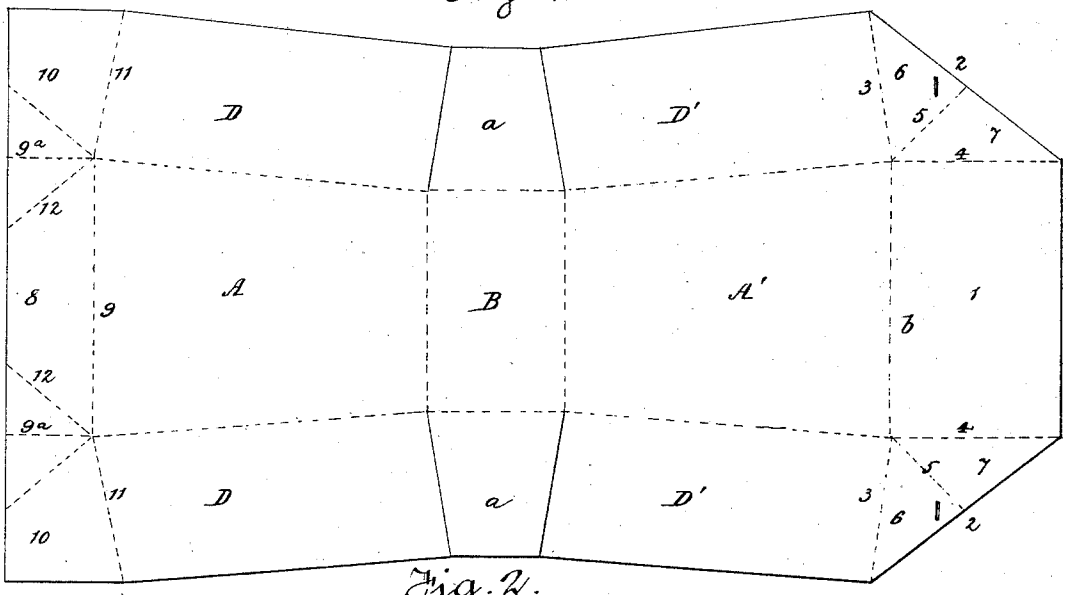



Fig. 2.

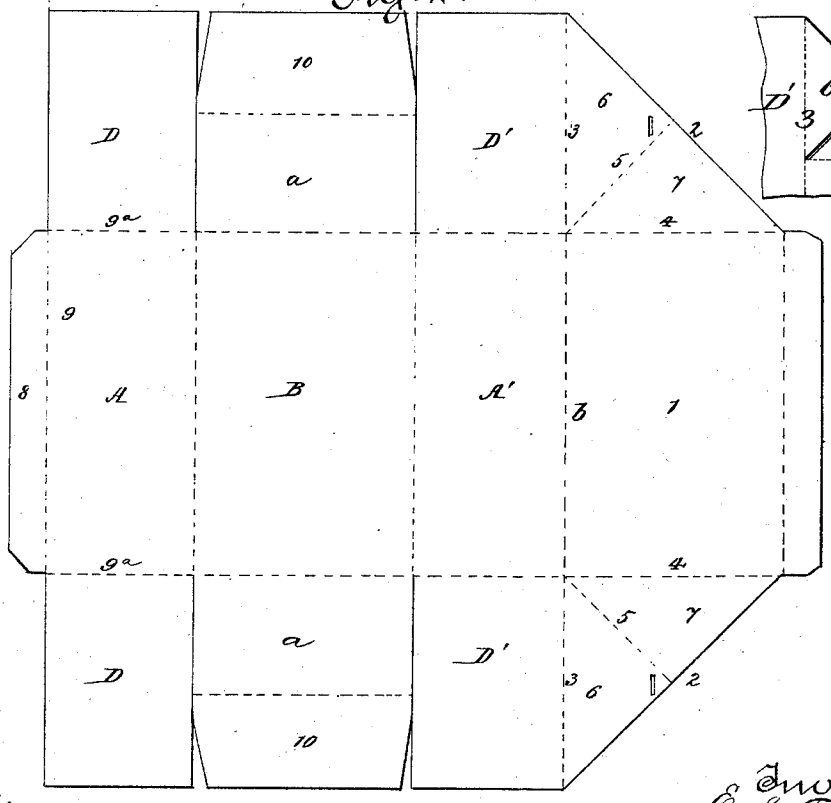
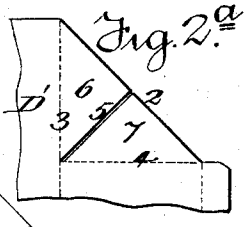



Fig. 2a.




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By his Attorney
Albert G. Davis

N. PETERS. Photo-Lithographer, Washington, D. C.

(No Model.)

3 Sheets—Sheet 2.

# E. J. TRUM.

## PAPER BOX.

No. 371,230. Patented Oct. 11, 1887.

Fig: 3.

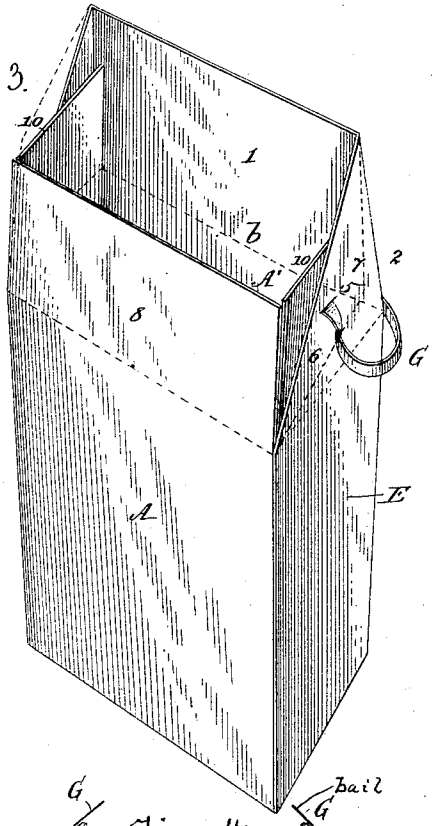



Fig: 5.

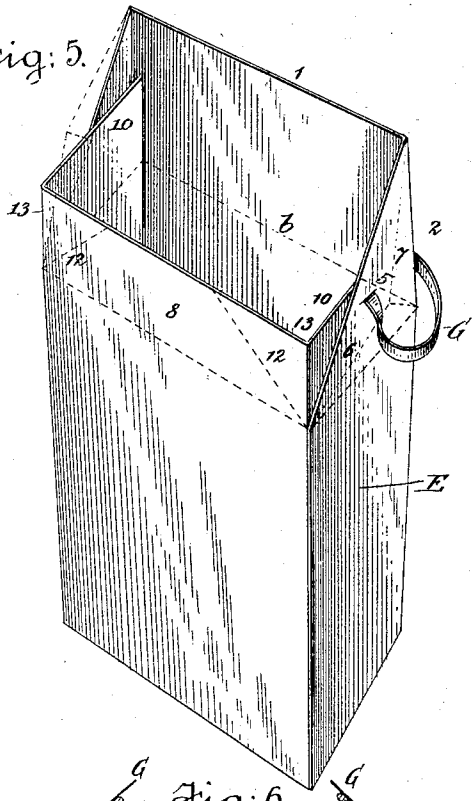



Fig: 4.

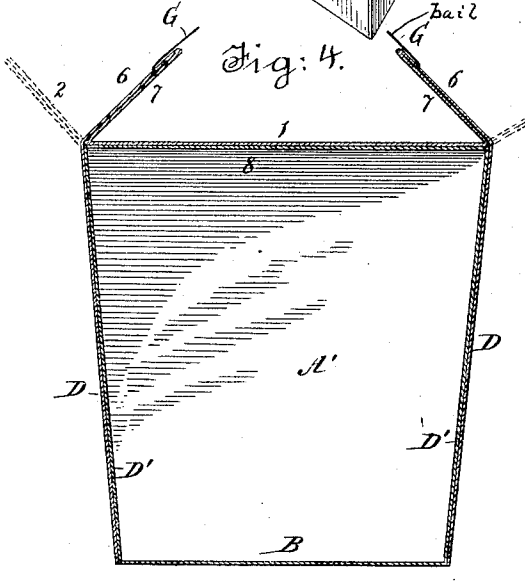
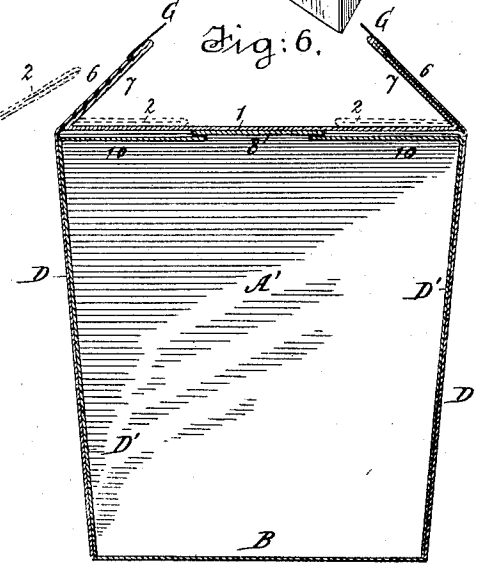



Fig: 6.




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(No Model.) 3 Sheets—Sheet 3.

# E. J. TRUM.

## PAPER BOX.

No. 371,230. Patented Oct. 11, 1887.

Fig: 7.

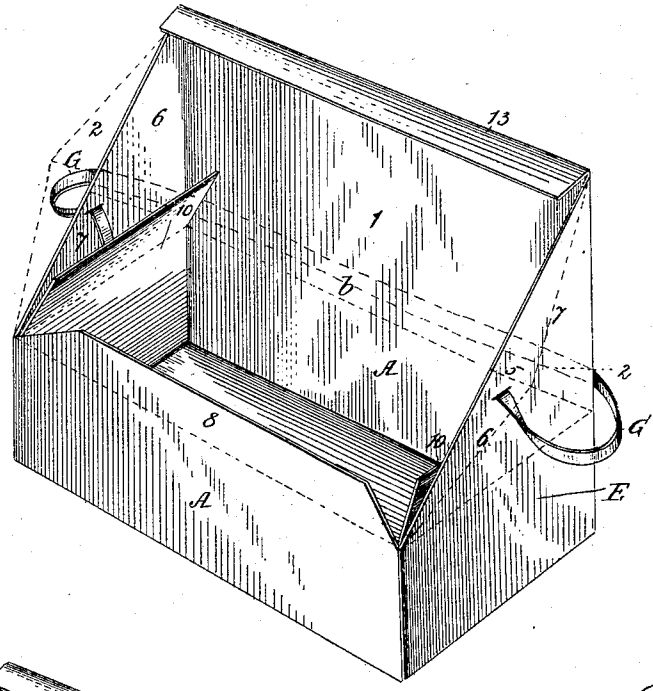



Fig: 9.

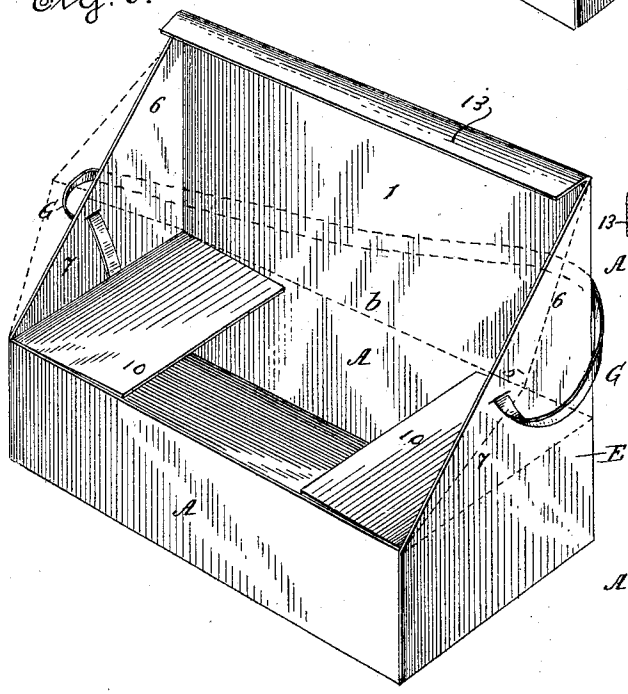



Fig: 8.

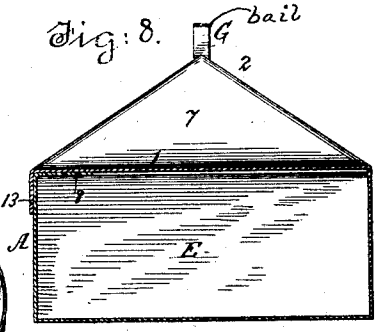
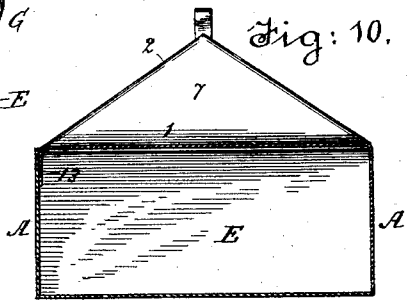



Fig: 10.




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Wiet[illegible]

N. PETERS, Photo-Lithographer, Washington, D. C.

# UNITED STATES PATENT OFFICE.

EMANUEL J. TRUM, OF BROOKLYN, NEW YORK.

## PAPER BOX.

SPECIFICATION forming part of Letters Patent No. 371,230, dated October 11, 1887.

Application filed February 2, 1887. Serial No. 226,307. (No model.)

*To all whom it may concern:*

Be it known that I, EMANUEL J. TRUM, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Packing-Box, of which the following is a specification.

This invention has reference to packing boxes, cases, and the like, which are made of flexible fabric or material—such as paper, for example—which is susceptible of being folded without breaking, and generally (but not necessarily) composed of a single sheet or piece, cut, creased, and folded into the form of a box or case of the required form. The end closing-flaps and fastenings of packing-boxes and cases of this class have been made in various ways. For example, the flaps have been provided with tongues and slots or pockets, and the fastening made by those means; but the liability of the tongue to tear off and to slip from the slot, the difficulty of making the fastening when the contents are of a moist and slippery character—ice-cream, for example—and the impossibility of avoiding contact of the fingers with the contents make this construction and mode of fastening objectionable. Other boxes and cases have the end closing-flaps formed to lie parallel to and in contact with each other, and interlock in this position; but in these considerable difficulty is met with in making the fastening, and when made it is insecure, and other methods of fastening have to be resorted to.

My invention has for its objects, first, to remedy the defects heretofore found to exist in the construction of the end closing-flaps and fastenings of this class of boxes and cases; second, to make the end closing-flap self-fastening or self-retaining; third, to utilize the weight of the contents of the box to tighten the fastening of the closing-flap; fourth, to produce a box or case which shall be closed and fastened by the act of folding the closing-flap and lifting the box for transportation; fifth, to arrange the open end of the box or case so that when the flaps are folded or closed the box or case will be approximately air-tight.

In the accompanying drawings, Figures 1 and 2 represent the blanks from which the boxes or cases are formed. Fig. 2ª represents a modification of part of the blank. Fig. 3 represents a perspective view, and Fig. 4 a longitudinal sectional view, of a box or case made from the blank represented in Fig. 1; Fig. 5, a perspective view, and Fig. 6 a longitudinal sectional view, of a box made from the same blank, but having the closing-flaps arranged to make the box air-tight. Fig. 7 is a perspective view, and Fig. 8 a longitudinal sectional view, of a box made from the blank represented in Fig. 2. Figs. 9 and 10 are similar views of a modification of the same.

Referring to the drawings, the blanks represented are for two styles of boxes—viz., a rectangular box and a tapering-side box; but it is obvious that they may be of other shapes, and the blanks must be cut to adapt them to be folded into the shape the box or case is to take. The blank in this instance is cut from a single sheet or piece of material, and the various parts of the body of the box and the end closing-flaps are all connected together, but provided at the proper points with incuts and creases or folding-lines, which permit the several parts to be folded and connected with each other in proper relation to give the desired shape to the box.

The two plates, panels, or parts A A′ respectively form the front and back walls of the box; B, the bottom; D D and D′ D′, the wings, which, when joined together, form the side walls; E E (see Figs. 3 to 9) and *a a*, the tongues, which, when the box is made, connect the bottom directly with the side walls. In boxes and cases composed of a single or homogeneous piece of paper or other material these several parts all connect together, and are therefore provided with folding-lines or creases and incuts at the proper points, in order that said parts may be folded and joined in the usual or any suitable manner to make the box or case; but it must be understood that in case the said parts, or any of them, are made separate from the others the formation of the blanks must be modified to adapt them to such changes as may be adopted.

The closing flap or cover 1 is connected with the back A′ and conforms to the shape of the box, the design being that it shall close the open end of the box. It connects with the back by a folding or crease line, *b*, which acts

as a hinge on which the flap turns in opening and closing. Between the wings D' D' and the flap 1 are triangular pieces 2 2, formed in one with said wings and flap, but divided therefrom by folding-lines or creases 3 4. The said triangular pieces are also bisected by a folding-line or crease, 5, forming thus two triangular parts, 6 7. Instead of a folding-line or crease, however, the triangular pieces may be divided by a slit, so as to form two separate parts, 6 7. The parts 6 form the ears, to which the ends of the bail or handle G are attached, and the parts 7 form the fastening or locking pieces which hold the closing-flap over the open end of the box.

The parts just referred to and described in connection with the back A' constitute the essential parts of the closing and fastening devices. They can be used alone where a mere cover for the box is required; but if an air and dust tight cover is wanted additional parts are employed, and these parts are connected with the front A, and in some cases with the wings D D, except one device, hereinafter referred to, which may be connected with the free edge of the closing-flap 1. Front A at its upper end is provided with a supplemental or front flap, 8, which is divided from the front wall by a crease or folding-line, 9, and is also connected with the wings D D, being divided therefrom by a folding-line, $9^a$. Supplemental or side flaps, 10 10, are also provided. In the blank for the oblong box, with either tapering or straight walls, the flaps 10 are preferably formed on the wings D D; but in the case of the blank for the rectangular box they are preferably formed on the tongs *a a;* but, as may be readily understood, these flaps may be formed upon either part in both cases, if desired. The front flaps are also provided with diagonal creases or folding-lines 12 12 in blank, Fig. 1; but in Fig. 2, the front flap having no connection with the side flaps, no such folding-lines are required. From the blanks above described the boxes shown on Sheets II and III are formed, the blank Fig. 1 forming the boxes Figs. 3 and 5, and blank Fig. 2 forming boxes Figs. 7 and 9.

It is not necessary to describe the mode of folding the parts together and securing them in proper position, as that will be readily understood by those skilled in the art.

By reference to Sheets II and III it will be seen that four different constructions of open ends are illustrated in connection with the boxes. These differences with the mode of closing and fastening the boxes will now be described in connection with the several figures.

Fig. 3: The front flap, 8, is separated from the side flaps, 10, by slits at the folding-line as deep as the flaps, so that said flaps can be folded separately; but I wish it to be understood that in this class of boxes the side flaps, 10, may be entirely dispensed with, if desired. To close the box the side flaps, 10 10 (when used) are first turned down over the contents of the box and then the front flap is laid down over them. The main or closing flap 1 is next turned down. In doing this the pieces 2 2 are caused to turn outward, bending on the crease-lines 5, as indicated by the dotted lines, so that when the main or closing flap lies upon or over the end of the box the two pieces 6 and 7 are folded together and project out from the top of the box in the position indicated by the dotted lines in Fig. 4. When the ends of the projections are turned toward each other, the inner or fastening pieces, 7, press on the end of the closing-flap, and thus cause the latter to bear forcibly against the top of the box, and the pieces 7 assume a dovetail form with relation to each other when viewed in longitudinal section. (See Figs. 4 and 6.) The ear projections 6 being outside of pieces 7 lie over and parallel to them, thus forming the semblance of a dovetail groove, within which the fastening-pieces are held. Now, when the box is suspended by the bail the projections assume the position indicated by the solid lines, Figs. 4 and 6, and, as may be readily seen, the closing-flap is fastened. To open it while suspended sufficient force must be applied to the main flap to overcome the weight of the box and the contents when there are any; hence the heavier the box the tighter the fastening. The fastening may be made secure when the box is not suspended by tying a knot in the bail or otherwise fastening the two parts together at a point which will prevent the projections from rising to an upright position, the only position where the closing-flap can be opened without moving the ear projections.

The same principle of securing the closing-flaps over the open end of the box runs through all the different forms shown; but some slight differences in the manner of closing the flaps exist, which will now be described.

Fig. 5: The side flaps, 10 10, and front flaps, 8, are connected together, as is the blank. The side flaps are first turned down, as before; but in this case the corner-connections 13 fold on the crease-lines 12 12. The front flap is next turned down, the corner-connections 13 joining each other between the side and front flaps by an overlapping miter-like joint, as shown in Fig. 6. The flap 1 and the projections are adjusted as before described. This box is practically air and dust tight, owing to the close joints made between the several flaps, and is thus specially useful for ice-cream and similar materials.

Fig. 7: The blank for this box has a narrow lip, 13, formed on the free edge of main flap 1, and when the box is closed, the closing-flap operating the same as heretofore described, this lip extends down over the front of the box, as shown, and covers the joint between the cover and the front wall of the box.

Fig. 9: In this case the front flap, 8, is omitted, and when the flap 1 is closed the lip is inserted between the edges of the side flaps and the front, as shown.

If preferred, the retaining projections or

pieces 7 may be separated from the ears 6 on the lines 5 without departing from the principle of my invention, and their form be changed from the triangular to any other that may result from a change in the shape of the box or which may be found suitable.

In closing the box the projections may be laid down parallel, or nearly so, to the closing-flap, as indicated by the dotted lines in Fig. 6, and secured in that position by a short bail or by an elastic band connected with the ears.

The essential parts—viz., the closing-flap, the locking-pieces, and the ears—of the closing and fastening devices may be made separately from the body of the box and connected with any form of box.

The boxes, cases, and closing-flaps, whether formed in the blank with the walls of the box or separate therefrom, may be made of a textile fabric, paper, or a combination of both, or they may be made of any other suitable material.

I claim—

1. In combination with the body of the box, a closing flap or cover provided with oppositely-placed locking-pieces on its ends, which are capable of turning out and projecting from the flap when the latter is closed, ears hinged to the walls of the box, adjacent to the ends of the flap which carry the said locking-pieces, and which lie against and over the locking-pieces, and a connection for the ears by which they are held over the closing-flap, substantially as specified.

2. In combination with the body of the box, a closing flap or cover provided with oppositely-placed hinged locking-pieces on its ends, which turn out and project from the flap when the latter is closed, and ears hinged to the walls of the box, adjacent to the ends of the flaps which carry the locking-pieces, the locking-pieces and ears being in one piece, but provided with a bisecting folding-line or crease, and a connection between the said ears by which they are drawn over the closing-flap and retained at an acute angle to the closing-flap, substantially as specified.

3. A box or case provided with a closing flap or cover, folding locking-pieces connected with the closing-flap and oppositely placed thereon, ears connected with the sides of the box, adjacent to the locking-pieces, the said flap, locking-pieces, and ears being in one piece with the back of the box, and a connection between the ears, substantially as specified.

4. The combination of the closing-flap, locking-pieces connected with the closing-flap and oppositely placed thereon, ears connected with the sides of the box, adjacent to the locking-pieces and the front flap, and a connection between the ears, substantially as specified.

5. The combination of the closing-flap, the locking-pieces, the ears, the front flap, the side flaps, and the connection between the ears, substantially as specified.

6. The combination of the closing-flap, the locking-pieces, the ears, the front flap, and the side flaps, the front and side flaps being made in one piece and the former provided with diagonal folding-lines, and the connection between the ears, substantially as specified.

7. The combination of the closing-flap provided with the lip 13, the locking-pieces 7, ears 6, connection G, and the side flaps, 10 10, substantially as specified.

In testimony that I claim the foregoing as my invention I have subscribed my name hereto this 27th day of January, 1887.

EMANUEL J. TRUM.

In presence of—
GEO. B. GOUGH,
MILTON C. DONN.