No. 662,969. Patented Dec. 4, 1900.

H. G. ROTH.

CARTON OR BOX.

(Application filed Jan. 22, 1900.)

(No Model.) 3 Sheets--Sheet 1.

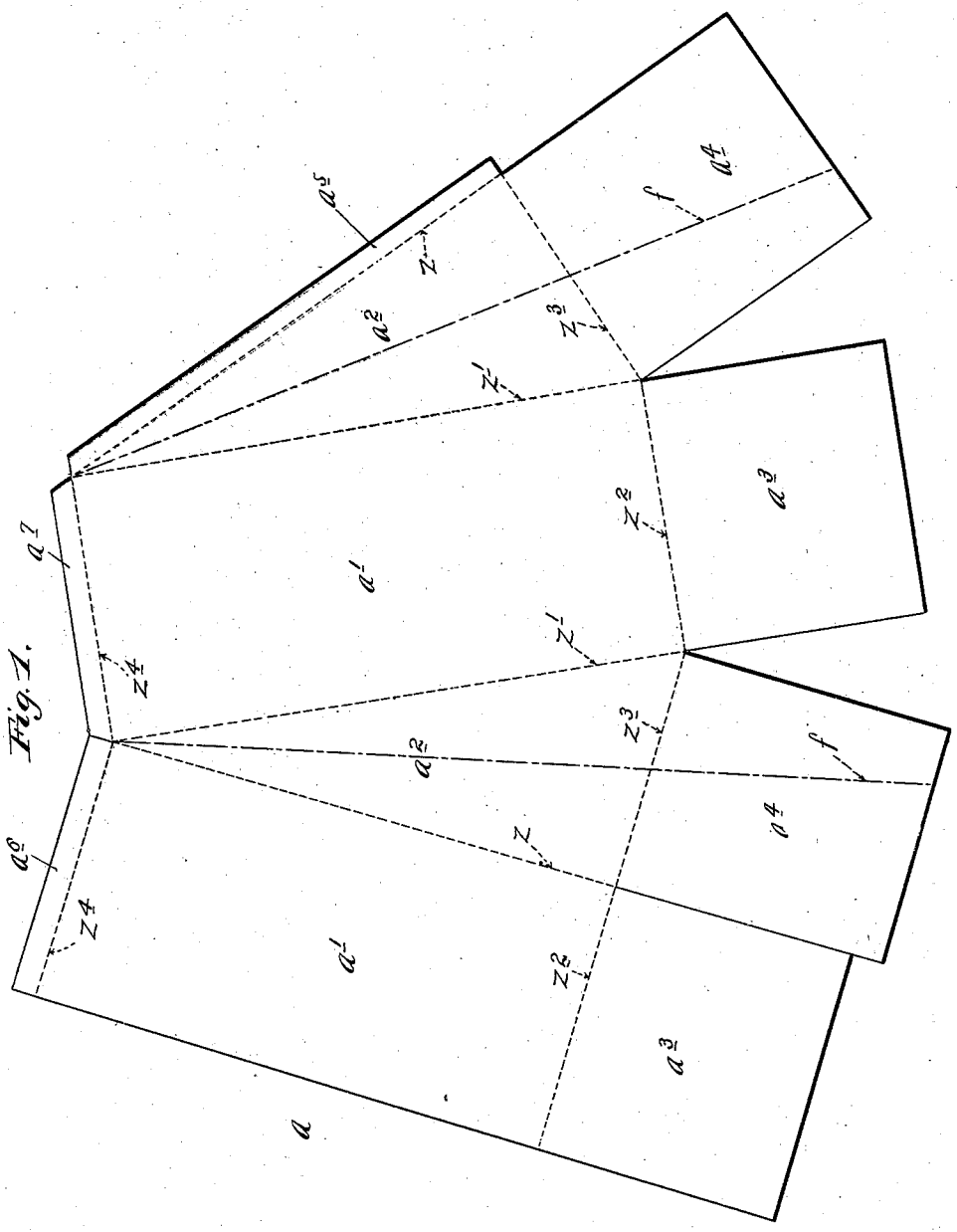

Fig. 1.

Witnesses.
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L. C. Burlingame

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Fig 10.

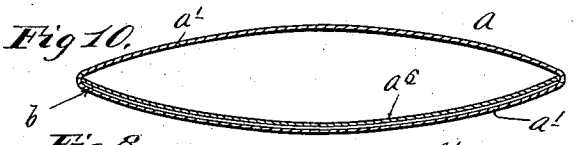

Fig. 7.

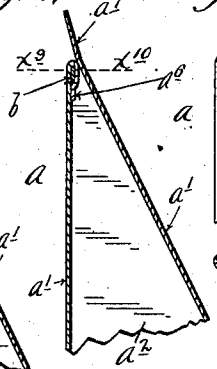

Fig. 8.

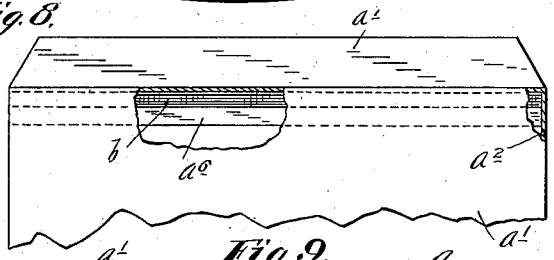

Fig. 6.

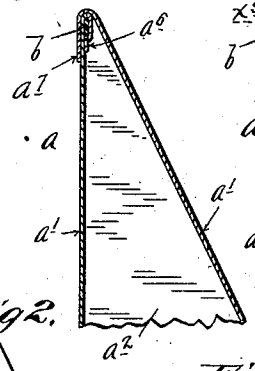

Fig. 9.

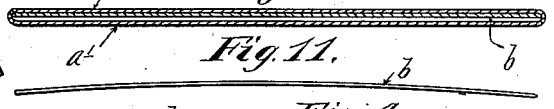

Fig. 11.

Fig 2.

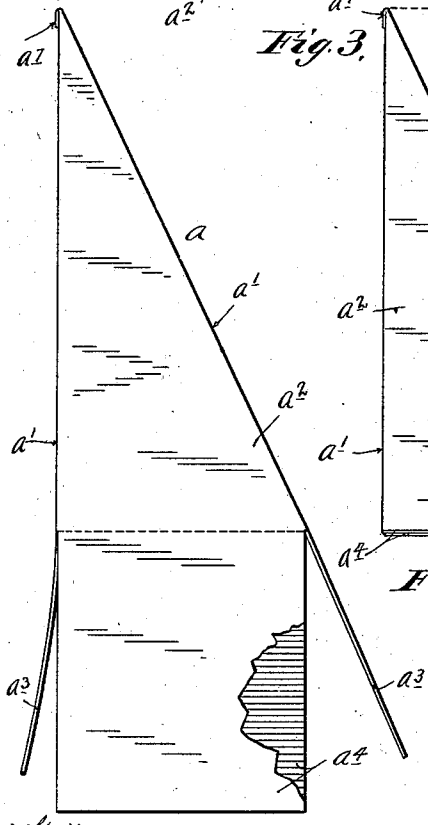

Fig. 3.

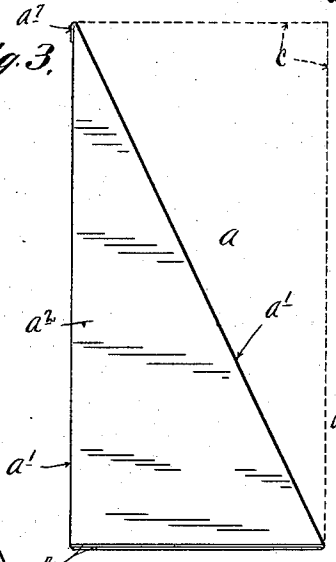

Fig. 4.

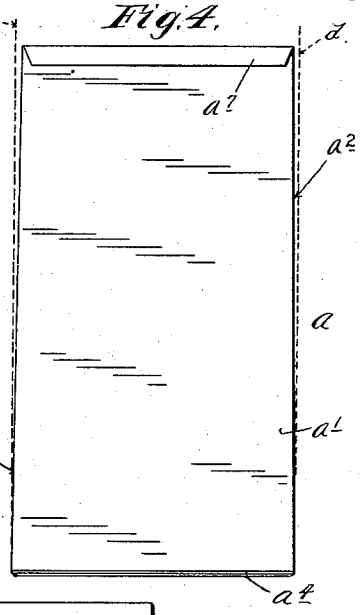

Fig. 5.

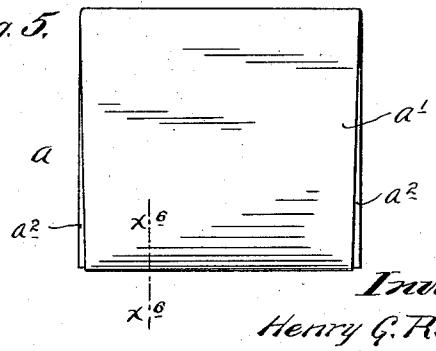

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Fig. 13.

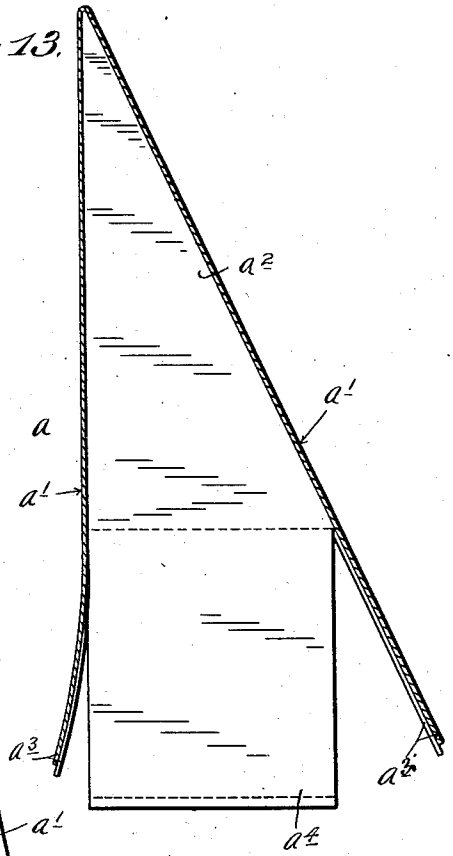
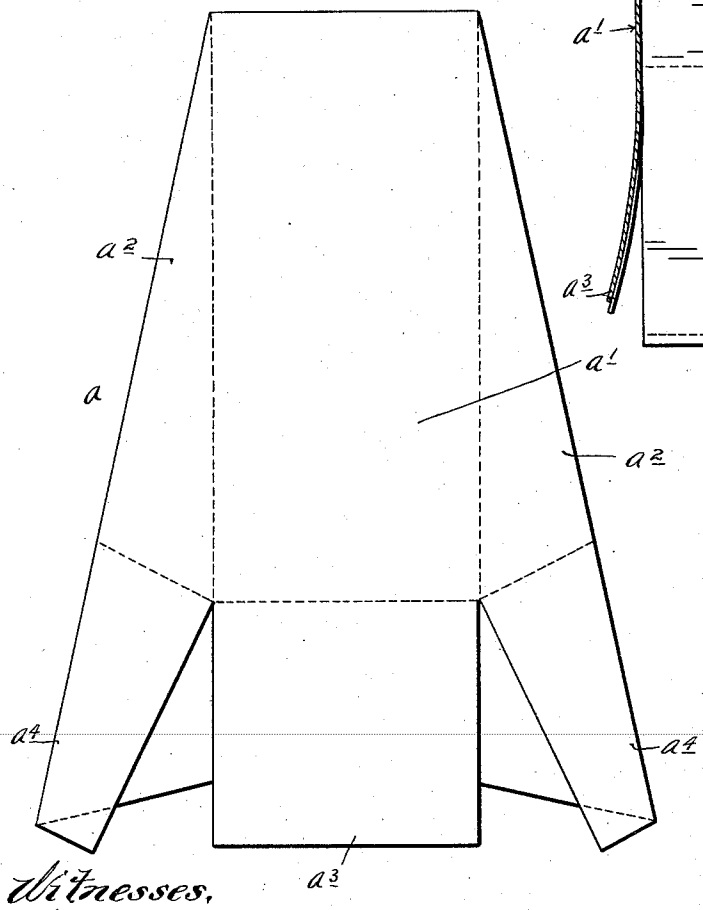


Fig. 12.



Witnesses,
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UNITED STATES PATENT OFFICE.

HENRY G. ROTH, OF MINNEAPOLIS, MINNESOTA.

CARTON OR BOX.

SPECIFICATION forming part of Letters Patent No. 662,969, dated December 4, 1900.

Application filed January 22, 1900. Serial No. 2,308. (No model.)

To all whom it may concern:

Be it known that I, HENRY G. ROTH, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Cartons or Boxes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to that class of boxes generally designated in the trade as "cartons;" and it has for its object to improve the same in the several particulars hereinafter noted.

The invention consists of the novel devices and combinations of devices hereinafter described, and defined in the claim.

More specifically stated, my invention has for its object to provide an improved carton or paper box which may be readily filled and sealed and thereafter easily opened and emptied of its contents or portions thereof from time to time and which when left standing after having been opened will be practically a closed vessel or box.

A further object of this invention is to provide a box which may be packed in small compass or space when empty and which also when filled may be packed or piled with other boxes of the same character in as little space as the size of the cartons will permit.

The above objects are attained chiefly by the construction of the carton or box in the peculiar form hereinafter set forth.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Figure 1 is a plan view showing the completed blank from which the carton is made up. Fig. 2 is a view in side elevation with some parts broken away, showing the carton made up, but with its overlapping base-forming flaps or ends opened up. Fig. 3 is a view in side elevation, showing the completed carton. Fig. 4 is a view in rear elevation, showing the completed carton. Fig. 5 is a plan view of the completed carton. Fig. 6 is an enlarged view of the upper end of the carton, taken on the section-line x^6 x^6 of Fig. 5, some parts being broken away. Fig. 7 is a view corresponding to Fig. 6, but with the apex or delivery end of the wedge-shaped box shown as unsealed. Fig. 8 is a rear elevation of the parts shown in Fig. 7, some parts being broken away. Figs. 9 and 10 are sections taken on the line x^9 x^{10} of Fig. 7, showing the mouth or discharge end of the box or carton respectively in closed and opened positions. Fig. 11 is a plan view of a light spring which is secured in the mouth or delivery end of the carton or box. Fig. 12 is a plan view showing one of the cartons or boxes which has been completed, but not sealed, as shown in Fig. 2, crushed flat for shipment or storage; and Fig. 13 is a view partly in side elevation and partly in vertical section, showing one of the unseen cartons or boxes telescoped into the other.

Referring first to Fig. 1, which shows the blank from which the carton or box is made up, attention is called to the fact that the dotted lines z, z', z^2, z^3, and z^4 indicate creases upon which the box-blank is to be folded to form the body of the carton or box, the blank being indicated as an entirety by the letter a. The box or carton formed from this blank will be wedge-shaped, and the sections a' of the blank will form the converging sides of the wedge, while the sections a^2 will form the triangular sides of the wedge. The sections a' and a^2 are provided, respectively, at the base or larger end of the wedge with projecting flaps or sections a^3 and a^4, which are adapted to be overlapped to seal the carton and to form the base of the same. The projecting lengths of the flaps a^3 should be equal to the length of the dotted lines z^3, and the projecting lengths of the flaps a^4 should be equal to the lengths of the dotted lines marked z^2. This is done for an obvious reason, and it will of course be understood that if the base of the box or carton were to be a true square the flaps a^3 and a^4 would be of the same width and of the same length in order to make each flap completely cover the base of the carton or box. The triangular section a^2, which is at one edge of the blank, is provided with a narrow longitudinal flap a^5, which is adapted to be glued or otherwise secured to the outer edge of the outer section a' after the blank has been bent on the lines z and z' to form the wedge-shaped box or carton. In this preferred construction one of the sections a' is provided at its upper end with a transverse flap or fold a^6, and the other is provided with a similar flap or fold a^7. The

flap a^6 is folded inward over a light leaf-spring b, which is held thereby and extended transversely across the box immediately at the mouth or apex thereof. This spring b is normally bent, as shown in Fig. 11, and is secured at the mouth of the box with its convex side turned in the direction of the opposite and adjacent inclined side of the box. This spring when thus applied to the mouth of the box has the effect of normally closing the delivery end or mouth of the box even when it is unsealed, and this is of course of importance, as it will prevent flies and other insects from getting into the box or carton after it has been unsealed at its apex or sharp edge. Nevertheless this spring is a minor feature of my invention and may and will be in many cases entirely dispensed with. It is probable that this spring will be used only in quite large packages, as the construction of the box is such that the mouth of the same will tend to close without the spring. The spring simply makes the action positive.

To prepare the box or carton for the trade or to adapt the same to be filled, the flap a^7 is turned over the upper end of the adjacent side a' and is secured thereto, preferably by glue or paste, in such manner that the said flap may be loosened by means of a knife to open the sealed package. It may, however, be otherwise sealed at its delivery end, and the box may be opened by running a knife-blade along its sharp edge. The dotted folding-lines z and z^3 or creases of the sides a^2 form right angles. Hence when the box is formed and sealed, as shown in Figs. 3, 4, and 5, its base will extend at a right angle to one of the sides a' of the diverging planes of the wedge. This feature is important, as it gives a box or carton which can be piled with other like-formed boxes in the most economical and compact manner.

In Fig. 3 the dotted lines marked c indicate the position of a second box or carton which has been inverted and placed with its inclined face against the inclined face of the first box which has been set upon its base. Hence it will be seen that two boxes thus placed together will form a right angle parallelepiped or approximately a prism of such form.

In order to adapt the unsealed but otherwise completed cartons or boxes to be telescoped one into the other for shipment or storage, the triangular sides of the box are made slightly converging toward the apex of the box. This divergency of the triangular side a^2 from right angles to the base of the box is illustrated in Fig. 4, wherein the dotted lines d are parallel and extend at right angles to the said base.

To adapt the unsealed box or carton to be collapsed or crushed flat for the purpose of storage or shipment, the triangular sides a^2 and their flaps a^3 are creased, as indicated by the broken lines marked f on Fig. 1. These creases or folding-lines f intersect the folding-lines z^3 at their centers and run to the apexes of the said triangular sides. With this arrangement the unsealed boxes or cartons may be folded flat, as shown in Fig. 12, and under this folding action the box will be bent or folded only on the lines f.

When the flaps a^3 and a^4 are folded to form the base or bottom of the box, the creased sides a^2 are stiffened, so that they cannot fold or buckle.

A carton or box of the above character may be very cheaply made, as the single blank may be very economically stamped or cut with but little waste of material, and the box may be very readily and quickly put into commercial form.

A box of the above character when made of the proper size is adapted for almost all commercial uses, but is particularly adapted for use as a carton for containing teas, coffees, candies, cereals, and like materials.

When the carton or box is inverted or turned with its open base end upward, it may be very readily filled and is very conveniently held, much after the manner of a cornucopia. After the carton has been filled the flaps a^3 a^4 are folded and overlapped and stuck together by mucilage or adhesive material, with which they are preferably coated in dry form. Of course the overlapped flaps, as well as the sealing-flap a^7 at the apex of the wedge, might be otherwise secured than by the use of adhesive material.

The sealed box or carton may be opened at its apex or sharp edge, as already stated, and after it has been opened the coffee, tea, or other material contained therein may be very conveniently poured from the open mouth of the same, the flow being regulated very largely by the amount of opening between the bulged sides of the box. The opened delivery end of the box may be held open, as shown in Fig. 10, by pressing together the upper ends of the triangular sides of the box.

A great point in favor of this carton or box is the fact that it is or may be supplied to the trade sealed at one end, leaving only one end to be sealed after it is filled.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

A blank for forming a wedge-shaped carton or box, comprising the sections a' and a^2 having, respectively, the flap extensions a^3 and a^4, the sides a^2 being in the form of right-angled triangles inscribed by the creases z, z' and z^3, whereby a carton or box having a base extended at a right angle to one of its diverging sides may be formed, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY G. ROTH.

Witnesses:
L. C. BURLINGAME,
F. D. MERCHANT.