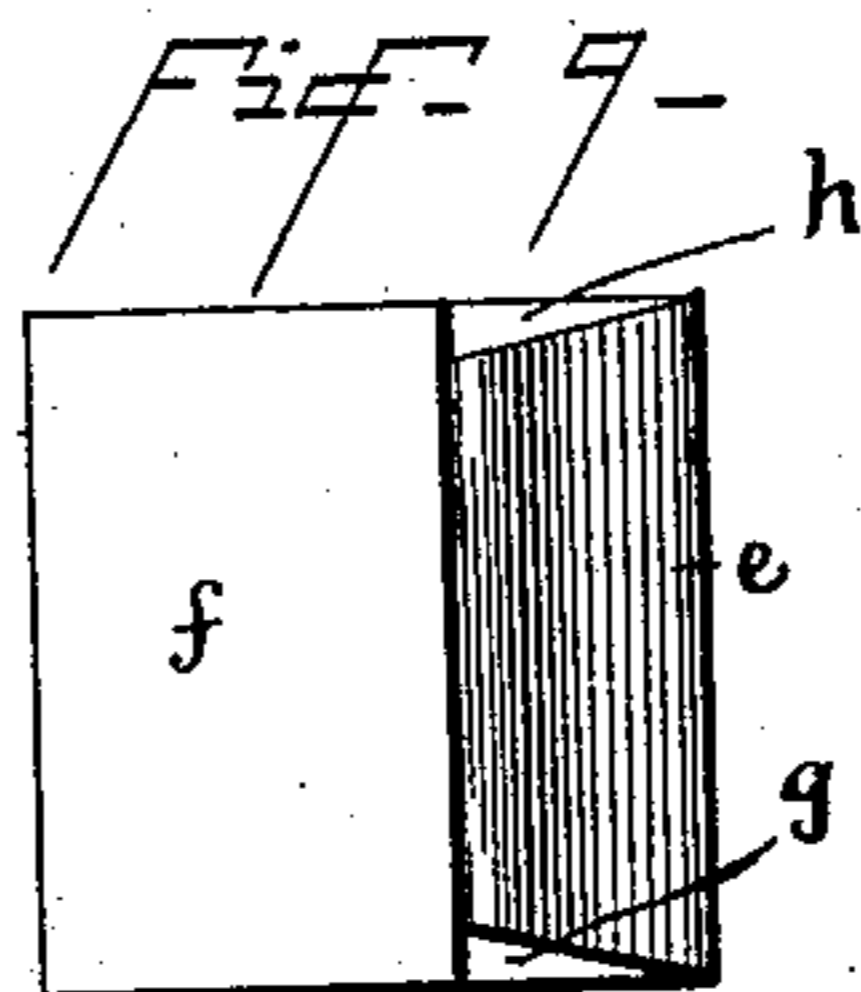
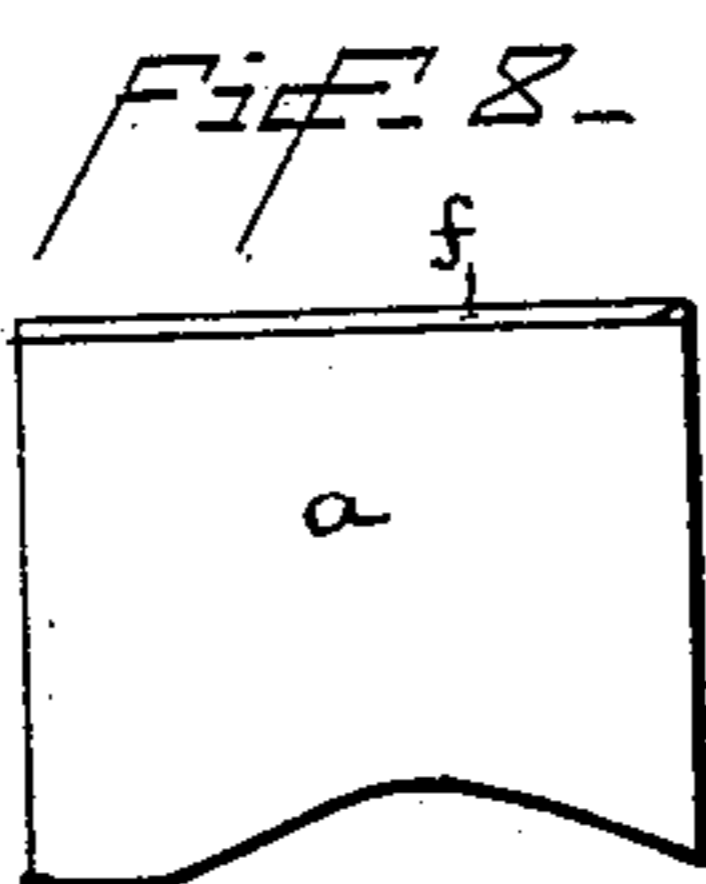
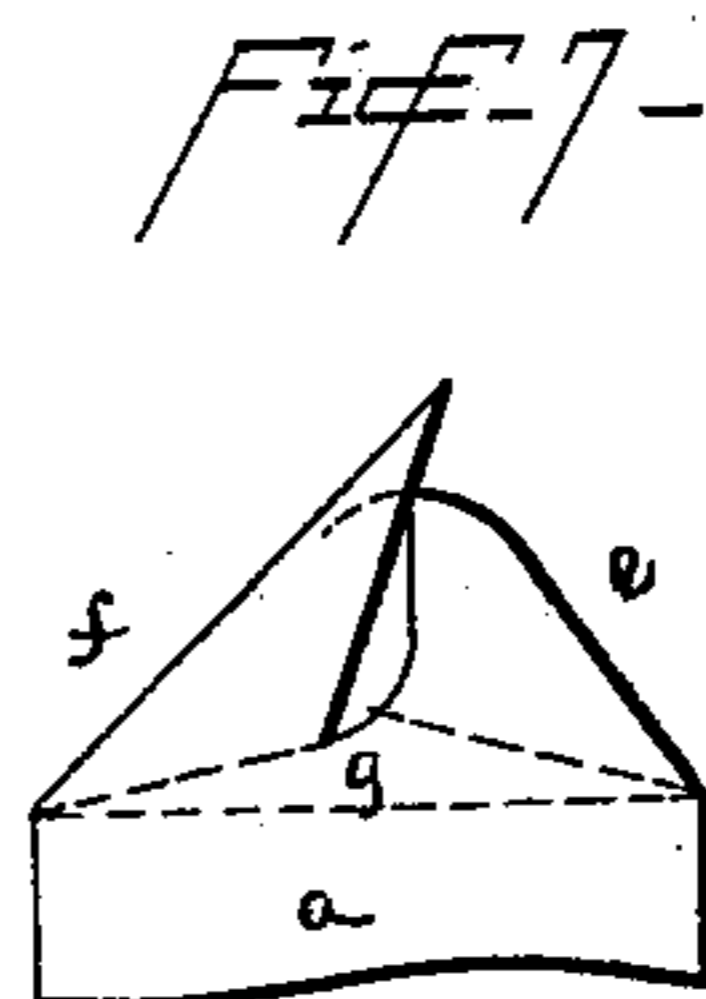
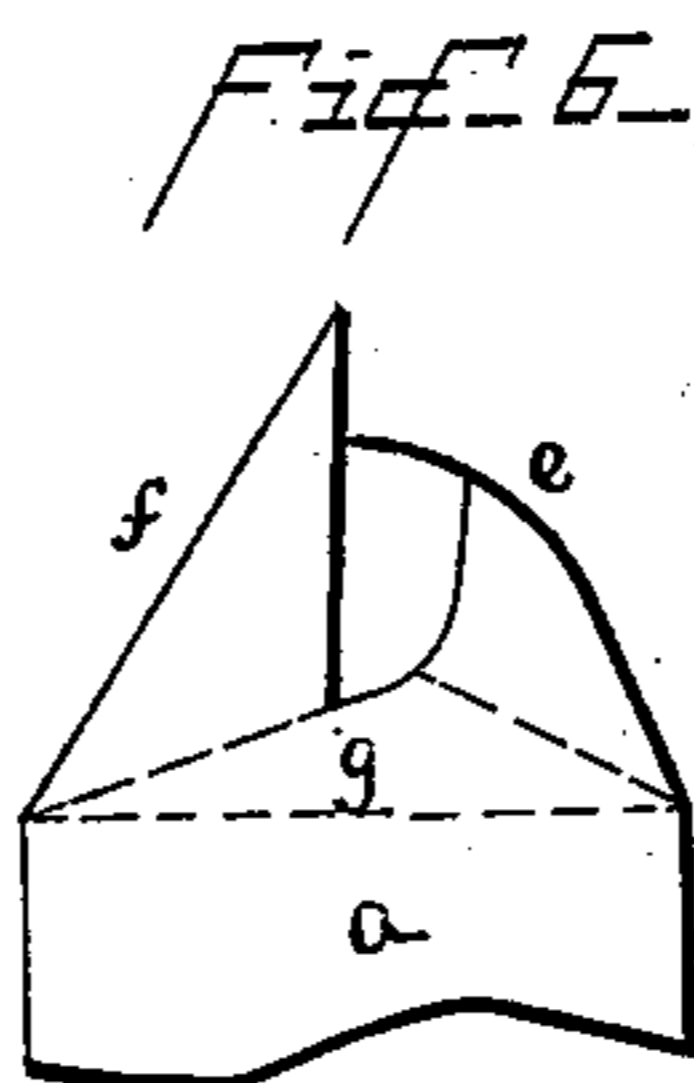
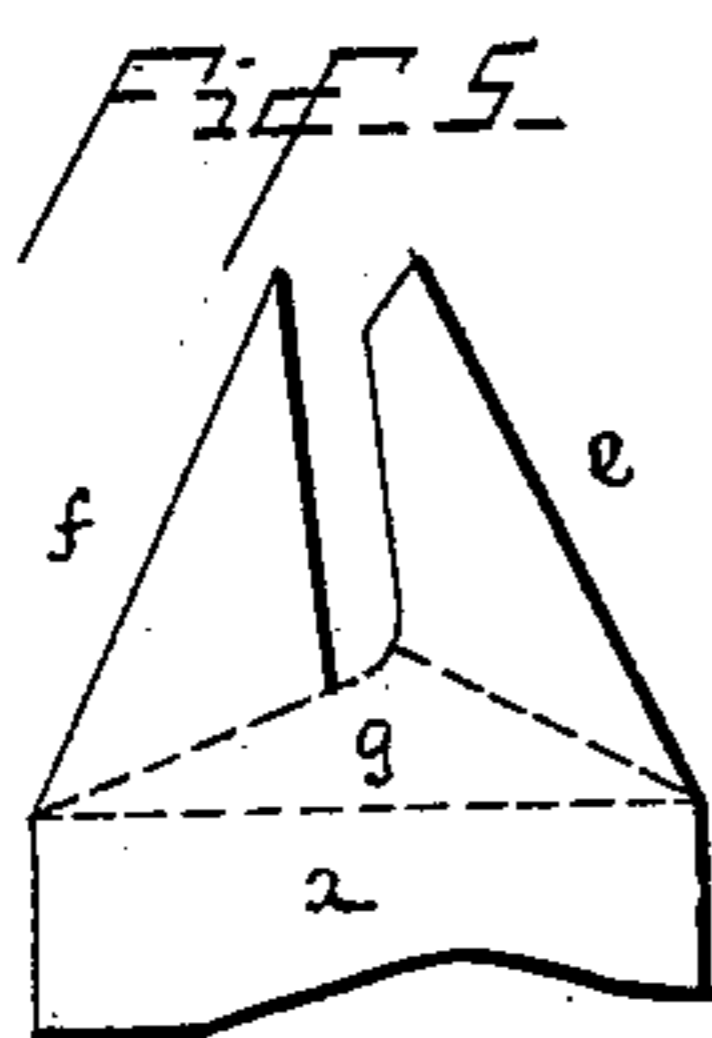
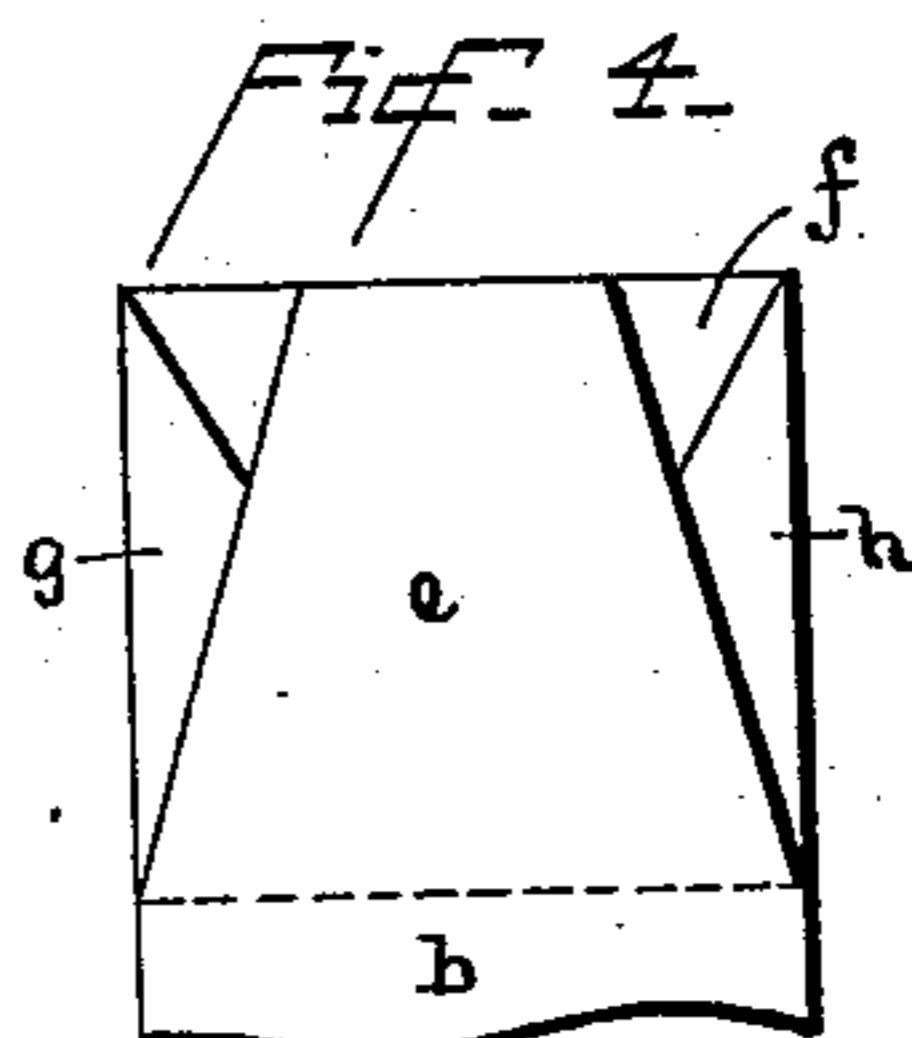
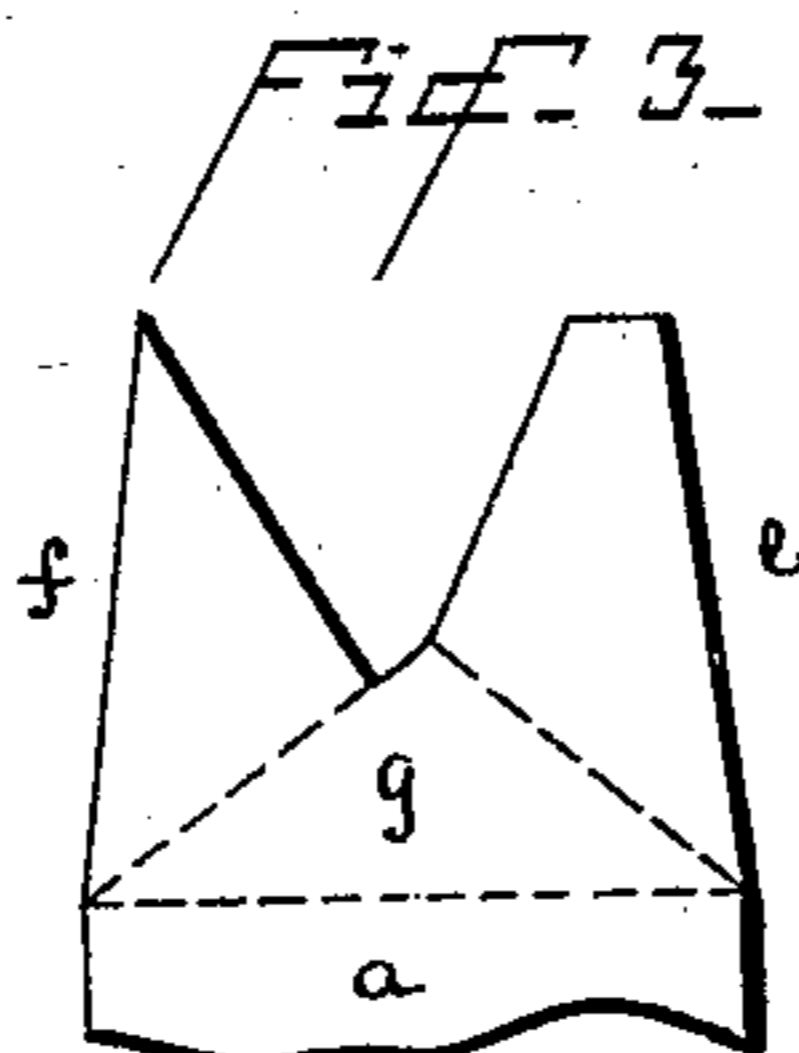
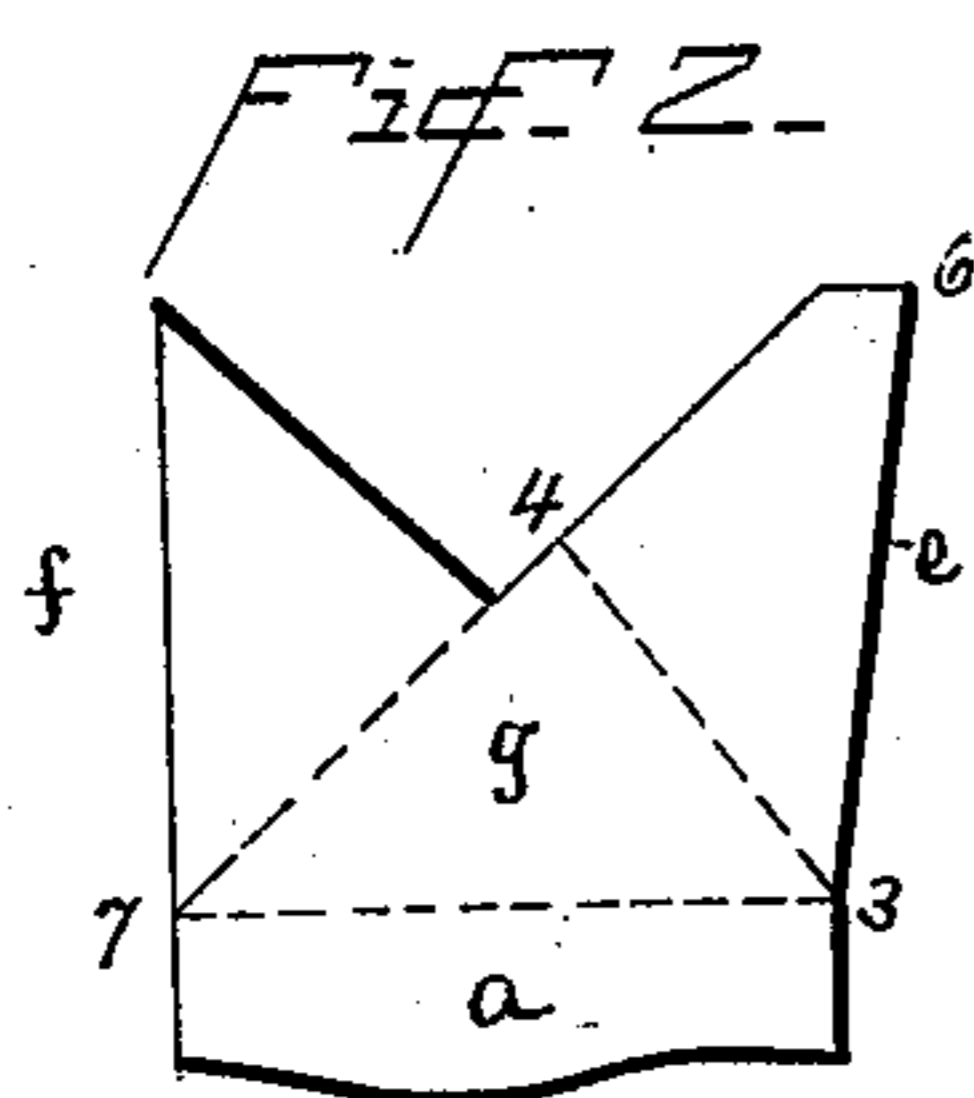
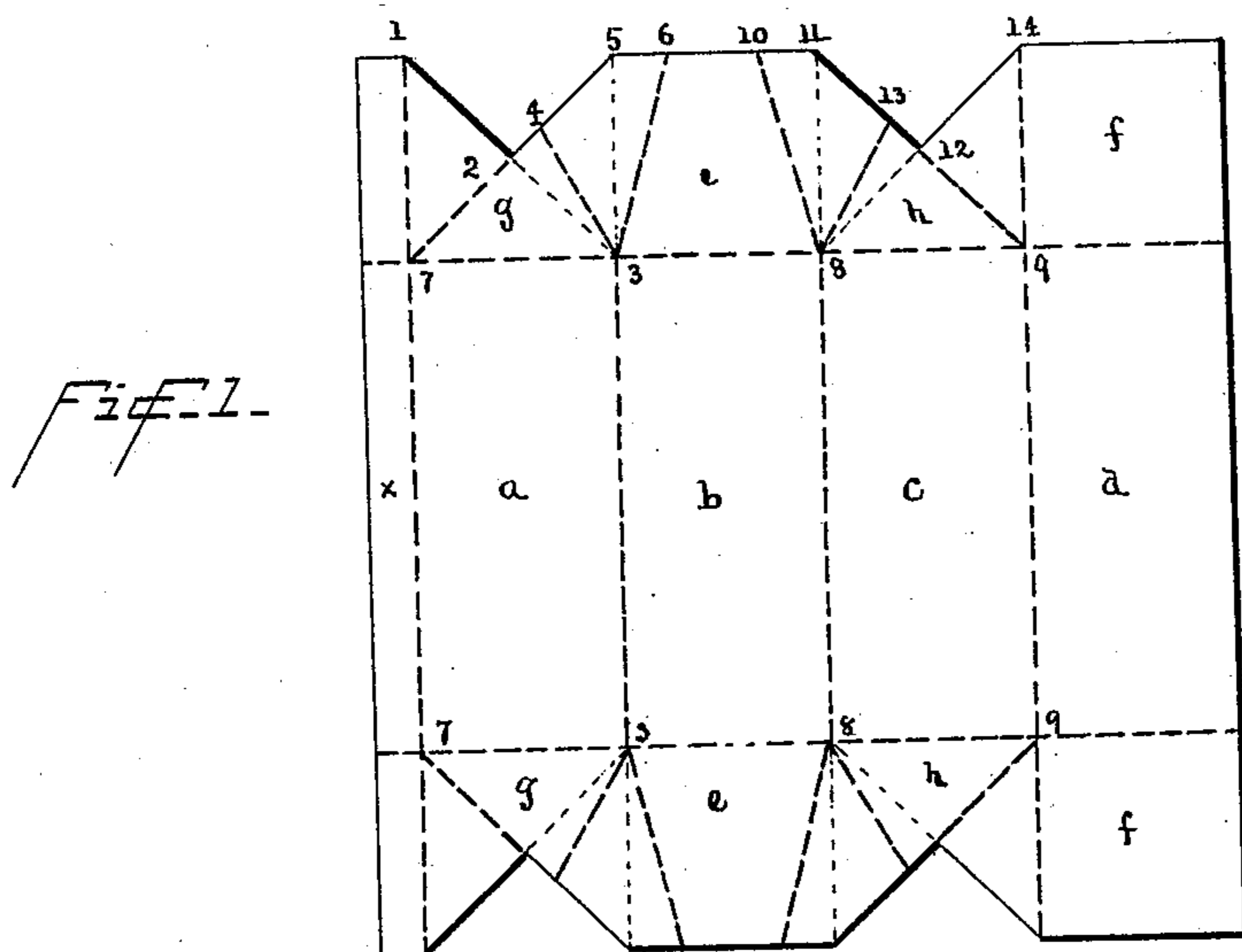


(No Model.)

D. S. CLARK.
PAPER BOX.

No. 401,009.

Patented Apr. 9, 1889.



WITNESSES-

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PAPER BOX.

SPECIFICATION forming part of Letters Patent No. 401,009, dated April 9, 1889.

Application filed December 29, 1888. Serial No. 294,943. (No model.)

To all whom it may concern:

Be it known that I, DWIGHT S. CLARK, a citizen of the United States, and a resident of Cambridge, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Angular Paper Boxes, of which the following is a specification.

My invention relates to that class of folded paper or card-board boxes which are used for packing finely divided or ground substances—such as starch, oatmeal, washing-powders, &c.—and its object is to provide such a receptacle which may be readily and securely closed. In the accompanying drawings, Figure 1 shows the blank from which the box is made. Fig. 2 is a side elevation of one end of a box before the closing of the end is begun. Fig. 3 is the first step toward closing the end, as seen from the side. Fig. 4 is the same as seen from the back or entering flap. Fig. 5 is a side elevation representing the further convergence of the flaps. Fig. 6 shows the back flap about to enter. Fig. 7 is a further advance, and Fig. 8 exhibits the end of the closed box as seen in elevation from the side. Fig. 9 is a plan view of the partially-closed box in the stage shown in side elevation in Fig. 7.

The blank shown in Fig. 1 has a generally rectangular outline, from which four triangular pieces are cut. This blank is one adapted for a box having a square cross-section. The large fields *a*, *b*, *c*, and *d* form the sides of the box, and the pasting-strip *x* is the usual contrivance for uniting the edges of *d* and *a*, to which further reference is unnecessary. The square *f* is the front flap, and when the box is folded and closed that flap is above and covers all the others, as in Fig. 8. The flap *e* is not square. Its bounding lines 3 6 and 8 10 converge, as will be seen in Figs. 1, 4, and 9. This is the back or entering flap, and its characteristic form is of essential importance. The flaps *g* and *h* are side flaps. They are folded on themselves when the box is closed, and the lines on which the flexure takes place are scored or indented on the paper or card-board before the folding of the blank is begun. All the folding lines in the figures are indicated by strong dotted lines, except when

such are on the outer edges of the box; but in Fig. 1 some faint dotted lines are also shown, which exist only as imaginary lines, and are not scored or marked in any way, their use in the drawing of the blank being only to explain the principle on which the side flaps, *g* and *h*, are subdivided and creased. It will be seen that the triangular piece taken from each of the side flaps is one-fourth of the square, and is cut along the diagonals thereof. The continuation of one of these diagonals is creased for folding, 7 2 in *g*, and 9 12 in *h*; but the other half diagonals left, 3 2 and 8 12, are not indented and flexed when the box is closed. The lines used for this purpose are those marked 3 4 and 8 13 in flaps *g* and *h*, respectively, the creasing being indicated by the strong dotted lines. The angular displacement from the diagonal given to the line 3 4 in the flap *g* makes it possible to displace the lines 3 6 to a like extent away from the imaginary prolongation of the line 3 3—namely, 3 5—so that it is the lines 3 6 and 8 10 which are indented and folded when the end is being closed. In consequence of this construction the back flap, *e*, will be found to stand off, as in Fig. 2, when the box takes its prismatic form before the end is closed. When the last-named operation is commenced, the side flaps, *g* and *h*, are made to yield inward, in doing which they bend upon the heavy dotted lines 7 2 and 3 4 in *g*, and 9 12 and 8 13 in *h*. The front and back flaps, *f* and *e*, can now be approached, and as this is done the upper edge of *e* is bent down and made to enter into the pocket formed by the square flap *f* above and those parts of the side flaps bounded by the lines 7 2 1 and 9 12 14 below. The several stages in the process of closing are shown as they appear from the side in Figs. 3, 5, 6, 7, and 8, and in Figs. 4 and 9 the great advantage of the pointed flap *e* can be seen. This advantage is recognized at the time of closing and after it is accomplished, for if the entering flap *e* had the full width of the box all the way up it could not be made to pass into the pocket above described without trouble and force and the distention of the edges of the end when the box was closed. In my invention the use of the pointed flap *e* obviates all such difficulty, for it may be entered easily

and quickly, and when entered may be urged rapidly forward, inasmuch as it only fills the pocket fully at the last moment of closing, its width then being the same as the width of the box. As already explained, the degree of inclination which is given to the side edges of the flap *e* determines the position of the indented lines 3 4 and 8 13 in the flaps *g* and *h*, respectively. In other words, the angle 2 3 4 should be equal to the angle 5 3 6 in *g*, and the angle 12 8 13 to the angle 11 8 10 in *h*. The facility with which the box is closed depends chiefly upon the size of this angle, the larger it is the more pointed the flap *e* becomes and the more easily it can be entered and pressed down; but it may obviously be reduced to any size thought desirable without departing from the principle involved in my invention, though in practice such a reduction will not be carried to an extreme, for to do so would make difficult the closing of the box.

As has been explained, the imaginary lines, indicated by faint dotted lines upon the blank shown in Fig. 1 should not be scored or indented; but this rule may be departed from in certain cases without affecting my invention injuriously, and especially the lines 3 5 and 8 11, or one of them, may be indented for folding, when it is desired to pack the boxes flat for shipment after the pasting-strip *x* has been united with the inner surface of the side *d*. If this is not done, it will be found impossible to lay the partially-closed boxes compactly on each other, and it would be better to transport such flat before joining the sides by the strip *x*. In this box (which may have an oblong as well as a square cross-section) the office of the entering flap *e*, when it fills the pocket under *f*, is to securely hold down or lock the whole end, as seen in Fig. 8.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A blank for an angular paper box, scored or indented for folding, so as to form the sides

a b c d, and the pasting-strip *x*, the back and front flaps, *e* and *f*, and the side flaps, *g* and *h*, the last two being notched, as shown, and subdivided by the lines 7 2 and 3 4 in one, and 9 12 and 8 13 in the other, substantially as shown and described.

2. A blank for a rectangular paper box, scored or indented for folding, and consisting of four fields for the sides, a pasting-strip to unite the first and last sides, and four connected flaps at each end for closing the box, each set of four having a front flap to cover the whole cross-section of the box, a back flap having converging edges, and two notched side flaps, each divided by score 1 or indented lines into two triangular and one irregular four-sided figure, substantially as shown and described.

3. An angular paper box consisting of the sides *a, b, c*, and *d*, united to form a four-sided prism, and closed by ends constructed of the side flaps, *g* and *h*, folded upon themselves, the front flap, *f*, and the back flap, *e*, inserted between the front and side flaps, substantially as described.

4. An angular paper box consisting of the sides *a, b, c*, and *d*, united to form a four-sided prism, and closed by ends consisting, first, of the triangular fields 7 4 3 and 9 13 8, then the triangular fields 7 2 1 and 9 12 14, then the four-sided figures 3 4 5 6 and 8 13 11 10, then the pointed flap *e*, and upon that the square front flap, *f*, substantially as described.

5. In the closed end of an angular paper box, the side flaps, *g* and *h*, notched by cutting through the lines 1 2 2 5 and 11 12 12 14, and subdivided each by indented lines into three fields folding on each other, in combination with the pointed entering flap *e* and the rectangular flap *f*, covering the whole end of the box, substantially as described.

DWIGHT S. CLARK.

Witnesses:

WINFIELD F. PRIME,
CHARLES S. ENSIGN.