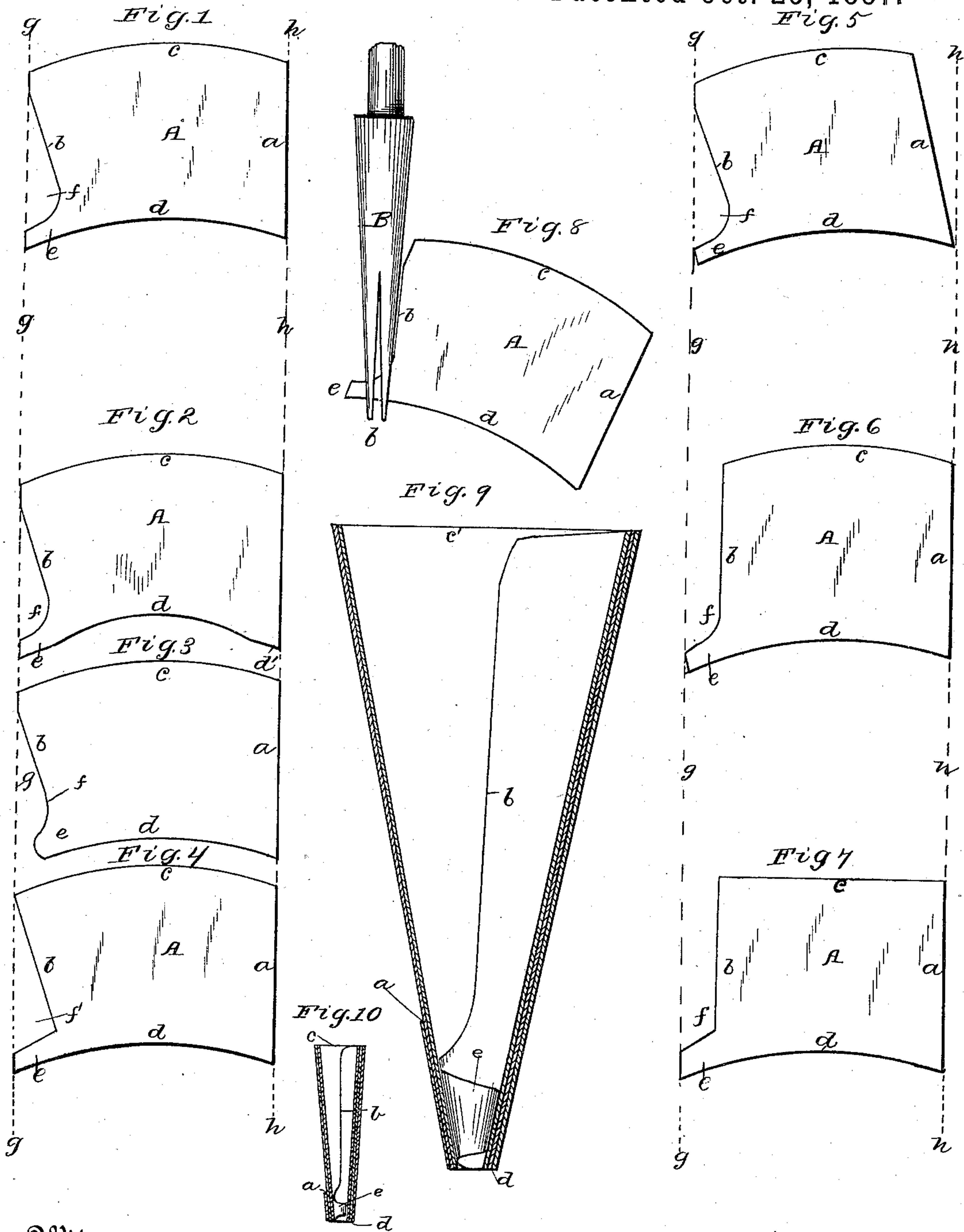


(No Model.)

M. C. STONE.
BLANK FOR PAPER TUBES.

No. 371,989.

Patented Oct. 25, 1887.



Witnesses

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UNITED STATES PATENT OFFICE.

MARVIN C. STONE, OF WASHINGTON, DISTRICT OF COLUMBIA.

BLANK FOR PAPER TUBES.

SPECIFICATION forming part of Letters Patent No. 371,989, dated October 25, 1887.

Application filed May 20, 1886. Serial No. 202,828. (No model.)

To all whom it may concern:

Be it known that I, MARVIN C. STONE, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Blanks for Paper Tubes, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of this invention is to provide a blank of paper of such nature that the manufacture of paper cones can be carried on rapidly, and so that the articles themselves shall have certain features of those that have been heretofore used.

I attain the ends of, first, forming the cones with great rapidity, second, making them smooth and uniform, and, third, making them of stiff hard paper, by providing an improved blank and inserting it into a cone-shaped "former," whereon it is revolved and from which it is subsequently removed. As a result of inserting a part of the blank into or across the interior of the former, I am enabled to get sufficient grip upon it without the necessity of fingers or grasping devices. In order to have the interior of the finished tube as open as possible throughout the greater part thereof, I form the blank with a laterally-extending tongue or projection, which can be inserted into the former for the purposes described.

In the drawings I have shown a blank formed so as to attain the ends at which I aim; but it can be more or less modified without departing from the spirit of the invention.

Figure 1 illustrates a blank containing my improvements. Figs. 2, 3, 4, 5, 6, and 7 illustrate slightly-modified forms. Fig. 8 shows the blank as inserted into a former in the position occupied when beginning to form the tube. Fig. 9 shows a paper cone or cornucopia after manufacture. Fig. 10 shows a conical tube of smaller size.

Referring to Fig. 1, A represents, generally, the blank. It may be produced by cutting it from a strip of paper, such as would be included between the dotted lines *g g* and *h h*. It has side edges, *a b*, a top edge, *c*, and bottom edge, *d*. By having the top edges, *c* and *d*, curved the ends of the tube can be made even and no cutting will be required at the ends subsequent to the wrapping. In Fig. 2 a

blank is shown substantially similar to that in Fig. 1, except that the edge *d* is a curve of somewhat shorter radius than that of the upper edge, *c*, there being in this blank at the lower edge two curves, the end parts, *d'*, conforming to the upper curve at *c* with the intermediate curve, *d*, somewhat sharper.

e represents a laterally extending tongue or projection. By means of it the blank can be readily caused to engage with the former. (See B, Fig. 8.) As shown in Fig. 1, this is produced by forming a recess or cutting out a part of the paper at *f*. When it is desired to have the upper end of the cone comparatively thick, this recess may be of the shape shown in Figs. 1, 2, and 3; but when it is preferred to have said end thinner the edge *b* may be of the shape indicated in Figs. 6 and 7. The tongue *e* may be longer or shorter, as occasion or preference dictates. In Fig. 1 it extends to the line *g g*. In Fig. 3 it is considerably shorter, the length thereof depending upon the manner of inserting it into and gripping it by the cone, and on other matters.

I prefer that the edge *b* should be curved at the lower end at the inner end of the tongue *e*, as shown in Figs. 1, 2, 3, and 6; but it may be composed of two or more straight lines, as shown in Figs. 4 and 7. In making large cones this form of blank is of advantage, as it leaves less paper in the interior chamber; but with smaller tubes, and especially with those which it is desirable to "nest" in packing them, the curved edge is preferable, as there is less liability to tear the tongue or projection when one tube is inserted into another.

With a blank of the shape of that in Fig. 5 the wall at the upper end of the tube can be made thinner, as above described, and the edge last wrapped can be thrown into a more spiral position, so that the wall of the tube will be thickened more gradually toward the smaller end, it being desirable in many articles to have the smaller end thick and strong.

In another application, No. 200,487, filed April 28, 1886, I have shown and claimed a blank having a tongue or lateral projection at one of the side edges and having the top and bottom edges formed on substantially the same curve, such a blank being more especially adapted to smaller articles, such as cigarette-holders, wherein the angle of inclination

of the sides of the cone is such that the paper can be cut with great economy in this way, and at the same time have the number of layers of paper at the smaller end of the cone in proper proportion to the number of layers at the larger end, and I do not therefore make any claim to a blank of this construction in this application; but in manufacturing some articles, especially larger cones, (where I aim also to have a uniform thickness throughout,) I have found that I can make them more advantageously by cutting the top edges and the bottom edges of the blanks on curves of different radii.

I do not herein claim any of the features relating to the mechanism or devices for cutting, shaping, wrapping, or pasting the blanks during the manufacture of the tubes, although some of them have been referred to herein, said mechanism or devices forming the subject-matter of other applications, No. 202,200, filed May 14, 1886, and No. 186,218, filed December 19, 1885; nor do I herein claim any of the

matters incident to the process of manufacture of the tubes, having made them the subject-matter of another application, No. 202,303, filed May 15, 1886.

What I claim is—

1. A blank for the manufacture of a conical paper tube, having a convex top edge, a concave lower edge, and the two side edges, one of which is formed with a tongue or projection, *e*, substantially as and for the purposes set forth.

2. A blank for the manufacture of conical paper tubes, it having top and bottom edges, side edges, of which one is recessed or indented, as at *f*, and a laterally-projecting tongue, *e*, substantially as and for the purposes set forth.

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

MARVIN C. STONE.

Witnesses:

M. A. BALLINGER,
H. H. BLISS.