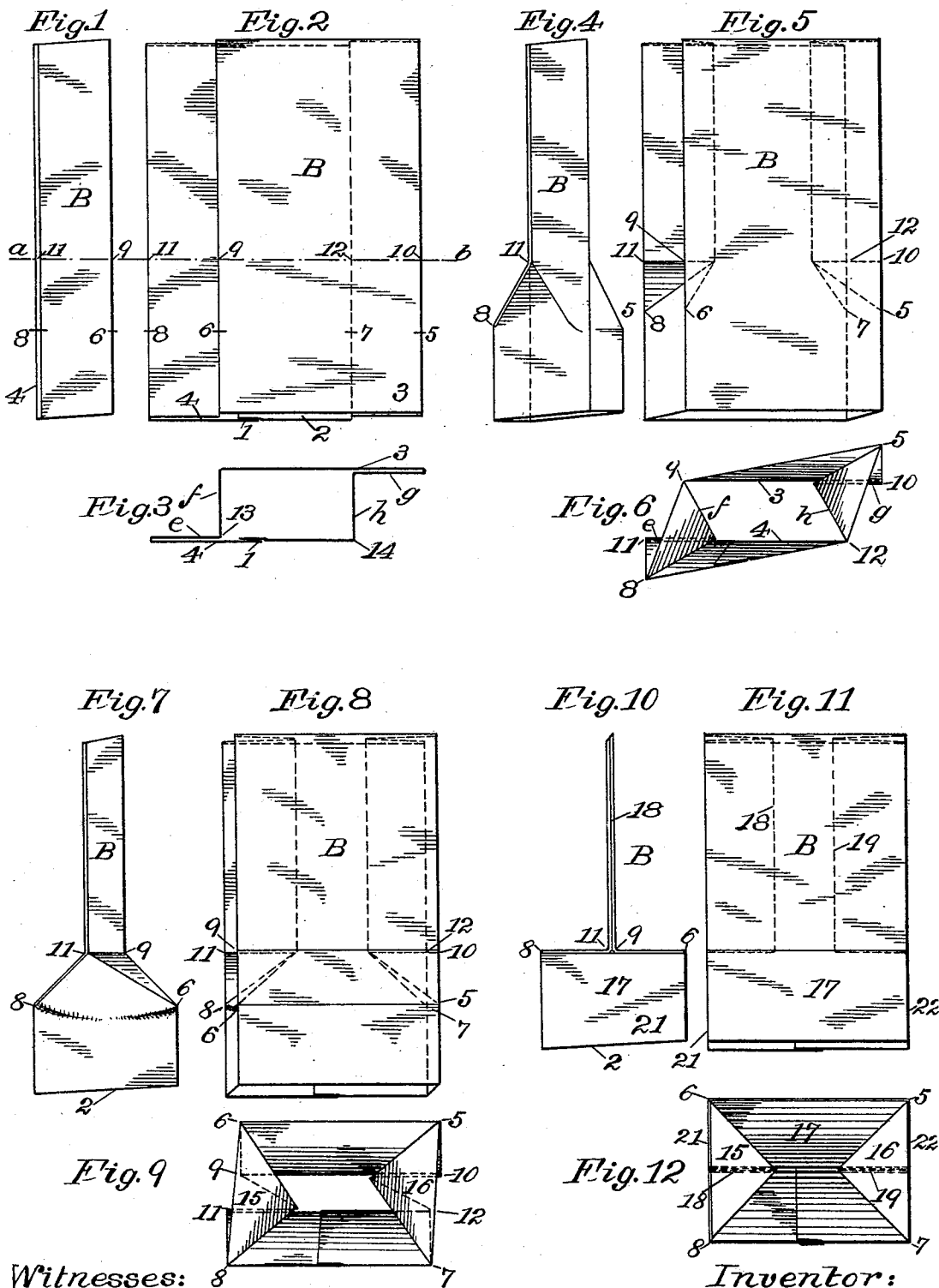


E. E. CLAUSSEN.  
PROCESS OF MAKING PAPER BAGS.

No. 520,951.

Patented June 5, 1894.



Witnesses:  
Ros W. Key  
W. H. Boniss

Inventor:  
Edward E. Claussen,

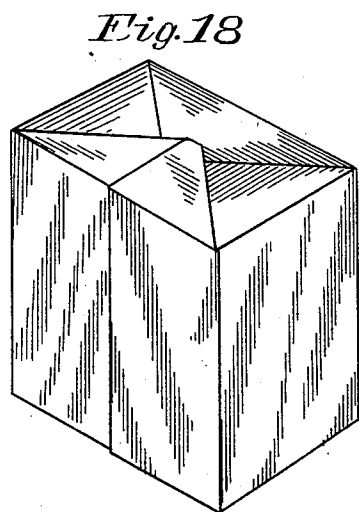
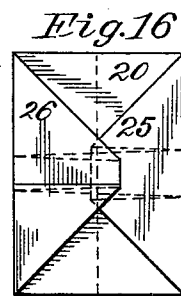
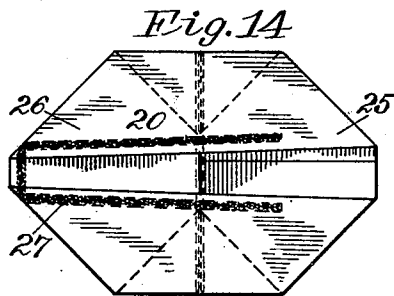
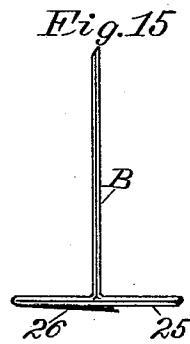
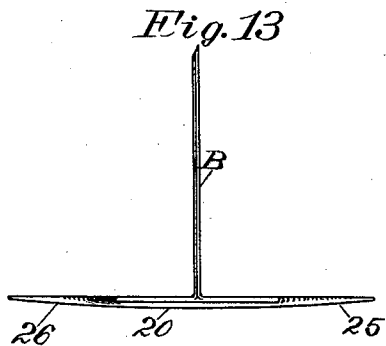
(No Model.)

2 Sheets—Sheet 2.

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# UNITED STATES PATENT OFFICE.

EDWARD E. CLAUSSEN, OF HARTFORD, CONNECTICUT, ASSIGNOR TO  
ALBERT H. WALKER, TRUSTEE, OF SAME PLACE.

## PROCESS OF MAKING PAPER BAGS.

SPECIFICATION forming part of Letters Patent No. 520,951, dated June 5, 1894.

Application filed August 18, 1892. Serial No. 443,362. (No specimens.)

*To all whom it may concern:*

Be it known that I, EDWARD E. CLAUSSEN, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Processes of Making Paper Bags, of which the following is a full, clear, and exact specification.

This invention is a new and useful process of making paper bags, similar to that shown and described in Reissued Letters Patent No. 10,083 of April 11, 1882.

Figures 1, 2 and 3 of the drawings are a side, a plan and an end view respectively of a length of tubing adapted to be employed in my process. Figs. 4, 5 and 6 are a side, a plan and an end view respectively of the blank of Figs. 1, 2 and 3, showing that blank partially folded. Figs. 7, 8 and 9 are corresponding views, showing the blank at a later stage in the folding operation; and Figs. 10, 11 and 12 are also corresponding views showing the lower part of the blank folded into a box like form, while the upper portion is folded into the form of an ordinary bellows sided tube. Figs. 13 and 14 are an edge and an end view respectively of the blank of Figs. 10, 11 and 12 after the box like form of the blank has been converted into the diamond form. Figs. 15 and 16 are views corresponding to those of Figs. 13 and 14 after the end flaps of the diamond have been folded over. Fig. 17 is an edge view of the blank of Figs. 15 and 16 showing the bottom turned down upon the body of the blank. Fig. 18 is a perspective view showing the opened bag.

The following is a description of my new process:

A sheet of paper is folded into a tubular blank B, having a longitudinal seam 1. The form of that blank is best seen in Fig. 3, wherein it is shown to consist of the upper and lower walls 3 and 4 and of the side walls *e*, *f*, *g* and *h*, the wall *g* being folded against the wall 3 while the wall *e* is folded upon the wall 4. The position and relation of these walls are such that the blank of Fig. 3 would be converted into the form of the well known tucked paper tube by carrying the wall 3 downward and toward the left, bending the paper at the intersection of the walls *e*, *f*, 3,

and *g*, *h*, 4, as upon hinges; the walls *f* and *g* would then lie upon and coincide with the walls *e* and *h* respectively, thus forming the bellows sides of the well known tucked paper tube. That blank may be formed over a rectangular block provided with plates which extend on opposite sides of that block in the form suggested by Fig. 3. A transverse line *a—b* is next established around the blank, having a sufficient length between it and the bottom end 2 of the blank to form the bottom of a bag. Upon the upper wall 3 of the blank, and at a distance from the line *a—b* equal to the width of one of the side walls *g* or *h*, are established the points 5 and 6, while similar points 7 and 8 are established at like distances on the lower wall of the blank. The line *a—b* and the points 5, 6, 7 and 8 have reference to the location of the lines on which the blank is subsequently folded.

The operation of folding the above described blank into a bag is as follows: The bottom end of the upper wall 3 is folded upward on the line *a—b* from 9 to 10, while the corresponding part of the lower wall 4 is folded downward on the line *a—b* from 11 to 12. At the same time the upper wall 3 is carried to the left and downward, as viewed in Figs. 6 and 9, the blank turning upon the junction lines of the walls *e*, *f*, and 3, and of the walls *g*, *h* and 4, as upon hinges. The effect of the bending apart of the walls 3 and 4 on the line *a—b*, is to open the bottom end of the blank below that line into a box like form, while the effect of the sidewise folding down of the upper wall and of the side walls, is to fold that portion of the blank lying above the line *a—b* into the well known form of a tucked or bellows sided tube, and at the same time serving to bring the box into rectangular form. The above described combined operation is continued until the walls *f*, *h*, *g* and 3 are folded down upon the walls *e*, 4, *h* and *f* respectively, thus flattening the top end of the tube; at which time those portions of the walls 3 and 4 which are between the line *a—b* and the points 5 and 6, and 7 and 8 respectively, are brought into a position substantially at right angles to the flattened upper portion of the blank as shown in Figs. 10,

11 and 12. Meanwhile those portions of the walls 3, 4, *e*, *f*, *g* and *h* which are between the end 2 of the blank and the points 5, 6, 7 and 8 are expanded into the form of a rectangular box 17. The well known triangular folds incident to the conversion of the end of a bellows sided tube into a rectangular box like form, are shown at 15 and 16 in Figs. 9 and 12. These triangular folds are formed during the folding operation just described, from those portions of the side walls *e*, *f*, *g* and *h* which lie between the points 5, 6, 7 and 8 and the points where the bottom of the tucks 18 and 19 intersect the line *a*—*b*. The box like form 17 of the blank of Figs. 10, 11 and 12 is next folded into the diamond shaped form 20 of Figs. 13 and 14 by turning the side walls 21 and 22 of the box down upon the triangular folds 15 and 16. Paste is then applied upon the diamond as at 27, the flap 25 is folded over upon the body of the blank, and the bag is completed by folding over the

flap 26. The folded bottom may then be turned down upon the tube portion of the blank as shown in Fig. 17 for greater convenience in packing the bags together in bundles.

I claim as my invention—

The herein described process of making a flat bottomed bellows sided bag, which consists in first forming a tubular blank having the walls 3, 4, *e*, *f*, *g*, and *h*, then in folding one end of that blank into an angular box like form while the other end is folded into the form of a bellows sided tube, then collapsing the box into the diamond form by folding down two opposite walls of that box upon the blank, and completing the bag by cross folding the flaps of the diamond, substantially as described.

EDWARD E. CLAUSSEN.

Witnesses:

W. J. BELCHER,  
W. H. HONISS.