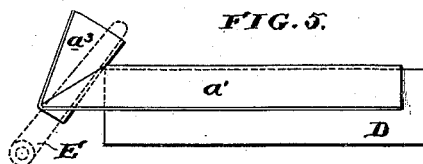
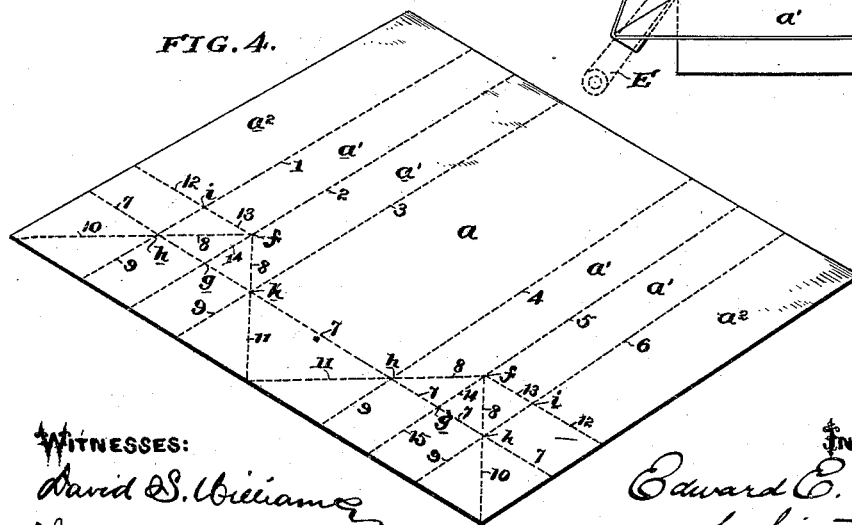
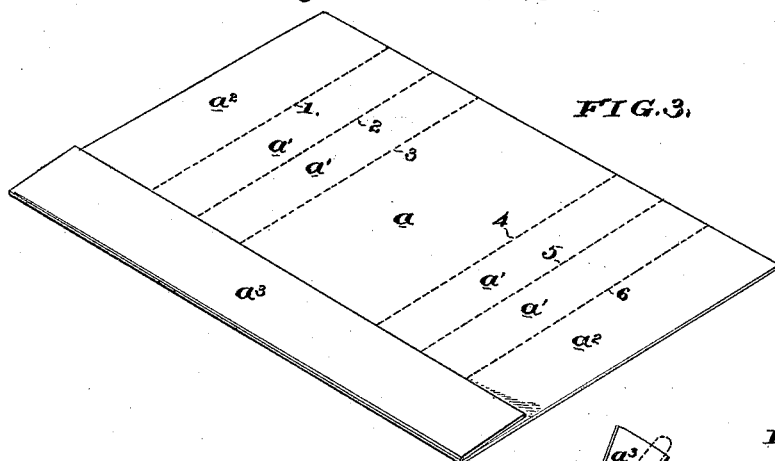
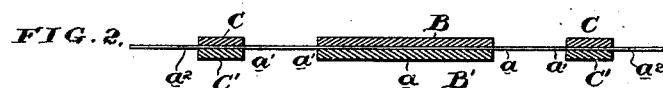
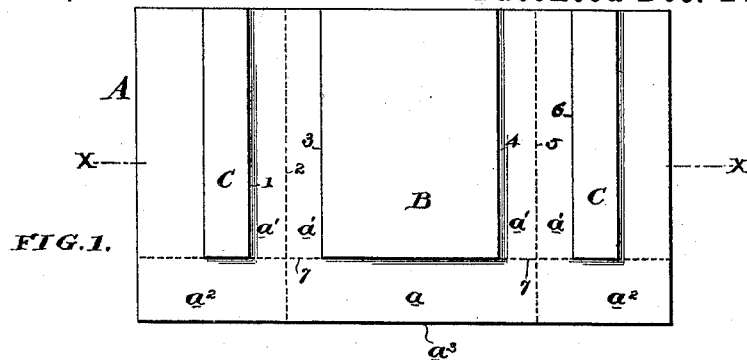


E. E. CLAUSSEN.
METHOD OF MAKING PAPER BAGS.

No. 417,906.

Patented Dec. 24, 1889.



WITNESSES:

David S. Williams
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INVENTOR:

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by his attorney
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(No Model.)

2 Sheets—Sheet 2.

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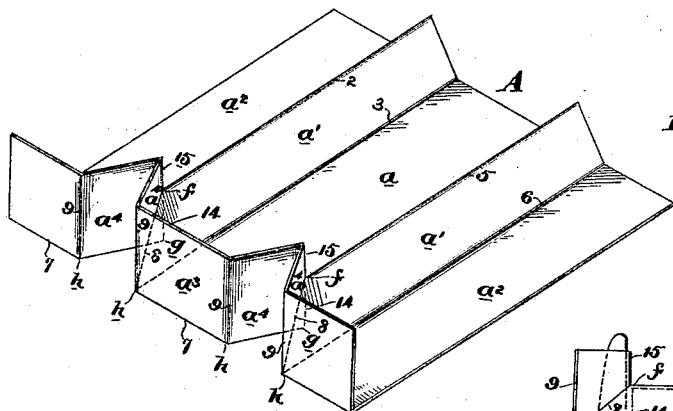


FIG. 7.

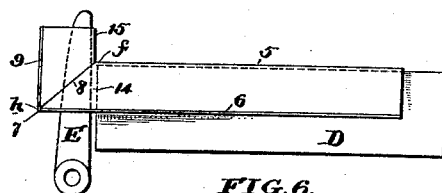


FIG. 6.

FIG. 8.

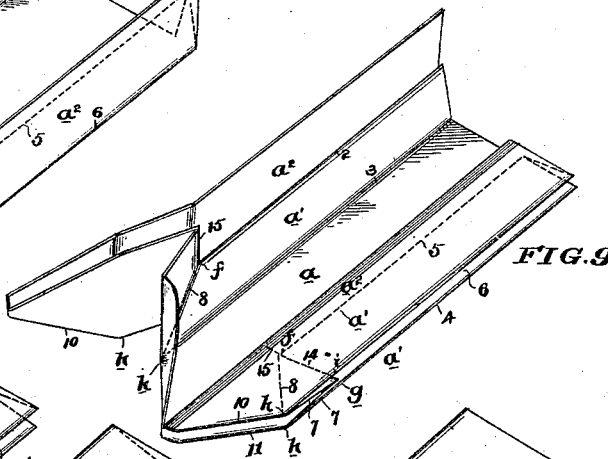
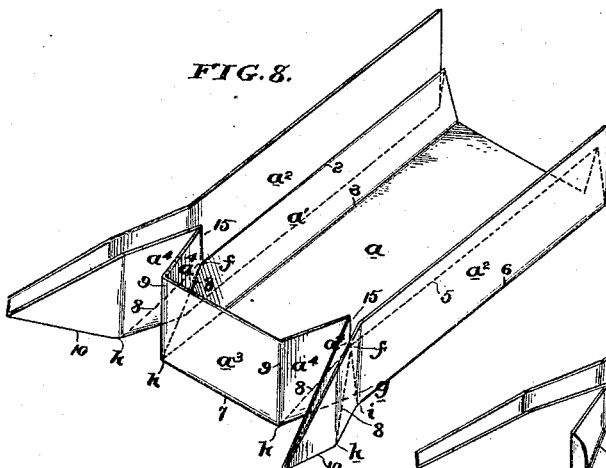


FIG. 9.

FIG. 10.

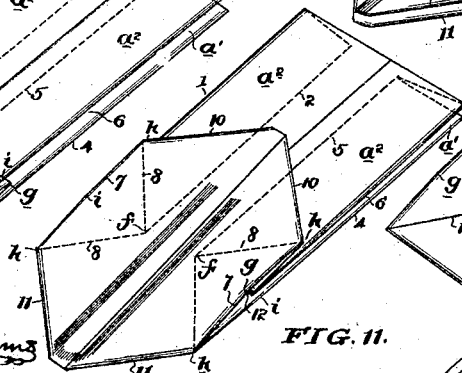
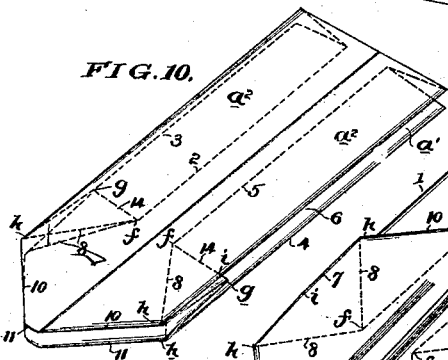


FIG. 11.

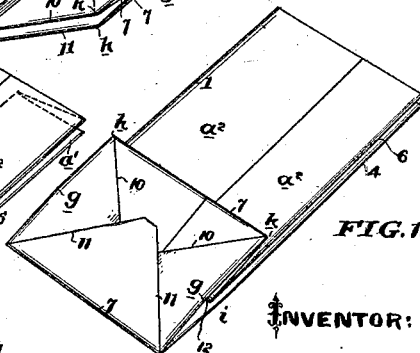


FIG. 12.

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UNITED STATES PATENT OFFICE.

EDWARD E. CLAUSSEN, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE UNION PAPER BAG MACHINE COMPANY, OF PHILADELPHIA, PENNSYLVANIA.

METHOD OF MAKING PAPER BAGS.

SPECIFICATION forming part of Letters Patent No. 417,906, dated December 24, 1889.

Application filed October 12, 1889. Serial No. 326,833. (No model.)

To all whom it may concern:

Be it known that I, EDWARD E. CLAUSSEN, of the city and county of Hartford, State of Connecticut, have invented a certain new and useful Method of Making Paper Bags, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to a new method of making paper bags of the kind known as the "bellows-folded satchel-bottomed" bag, such as is shown in the Reissued Patent No. 10,083, granted to the Union Paper Bag Machine Company as assignees of Mark L. Deering. By my new method I construct the bottom and body or tube of the bag simultaneously instead, as in the many known methods, of first forming the bellows-folded tube and then folding the bottom thereon.

My invention will best be described in connection with the drawings, by which it is illustrated, and in which—

Figure 1 represents a flat blank of paper held by former-plates, which can be conveniently used in carrying out my process. Fig. 2 is a section on the line xx of Fig. 1. Fig. 3 represents the first folding of my process. Fig. 4 represents the flat blank, with the different line of folding marked thereon. Fig. 5 represents the second folding operation in my method, showing appliances which can be conveniently used to assist in giving the paper the desired folds. Fig. 6 is similar to Fig. 5, but shows the operation of making the second folds as complete. Fig. 7 is a perspective view showing the folds given to the blank in the second folding operation. Figs. 8, 9, and 10 show progressive stages of the third folding operation, by which the tube is completed and the diamond fold formed. Fig. 11 shows the fourth folding operation, by which the diamond is spread out; and Fig. 12 shows the final folds, which complete the bag.

A designates the bag-blank, the portion a between the lines 3 and 4 forming the back of the tube, the portions a' a' between the lines 1 3 and 4 6 forming the bellows-folded sides of the tube, and the portions a^2 lying outside the lines 1 and 6 forming the front of the tube. The portion a^3 , lying in

front of line 7, is, in the first place, folded back on the blank, as shown in Fig. 3. The bellows folds are then formed by creasing the paper back of line 7 on the lines 1, 2, 3, 4, 5, and 6, and simultaneously the folded edge a^3 is pushed into the folds thus formed, so that at the end of this operation the paper is creased and folded, as is shown in Figs. 6 and 7. A convenient way of making these folds is indicated in the drawings. The part a of the blank is held between plates B B', and other plates C C' are made to seize the blank on the outside of lines 1 and 6, as is shown in Figs. 1 and 2. The plates C C' are then moved toward the plates B B', and simultaneously thin plates D, Figs. 5 and 6, move up, engaging the blank on the lines 2 and 5, and defining the folds on these lines, while the plates C B C define the folds 1, 3, 4, and 6. While these operations are going on fingers—such as E, Figs. 5 and 6—move against the turned-up end a^3 on the lines 15, forcing it in, as shown in Figs. 5 and 6, and the result of these concurrent operations is as shown in Fig. 7. This second folding operation defines the bellows folds on the lines 1, 2, 3, 4, 5, and 6, and also the folds 8 8, extending from a point f on the lines 2 and 5 to points h at the junction of lines 1, 3, 4, and 6 with line 7, the said folds, bounded by the points $f h h$, being the characteristic inward triangular folds of the bellows-folded satchel-bottomed bag. The second folding operation also results in giving to the blank the creases or folds 14, running from point f to a point g at the intersection of lines 2 and 5 with line 7, and the creases 15, extending across fold a^3 from point g . These folds are useful in the making of the bag, but are obliterated in its completion. Folds 9 are also formed in this operation; but, serving no particular purpose, they need never form actual creases in the paper.

The third folding operation is shown in Figs. 8, 9, and 10. It consists in turning the ends $a^2 a^2$ of the blank up against the bellows-folded sides $a' a'$ and down with them upon the back of the blank. This operation forms the creases 10 10 and 11 11 in the lap a^2 , said creases being those which define the ends of the diamond fold. One edge a^2

of the blank is made broader than the other, and the shorter one folded down first. A line of paste is then applied to the longer edge, so that when it laps over the shorter one and is
5 pressed down upon it the paste will secure the edges together and form the pasted tube of the bag.

The next folding operation consists in opening and spreading out the diamond, as shown
10 in Fig. 11. This obliterates folds 15 and 14 and forms the new and permanent folds 13, running from *ff* to points *i* in lines 1 and 6 and 14, running from *i i* across folds *a³ a²*.

The final folds are made by turning down
15 and lapping the ends of the diamond, as is shown in Fig. 12, a line of paste being first applied, as shown in Fig. 11, to secure the flaps together.

The mechanical appliances mentioned
20 form, of course, no part of my invention, and are shown and mentioned merely to aid in

the description of my process, which may be carried out by hand or by any convenient appliances.

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

The described method of making a bellows-folded satchel-bottomed bag, consisting in folding up one end of a flat bag-blank, then
30 forming the bellows folds at right angles to the folded-up end and simultaneously forming the inward triangular fold, then folding the sides of the blank down to complete the tube and define the folds of the diamond fold,
35 then opening the diamond fold, and finally completing the bag by folding over the ends of the diamond.

EDWARD E. CLAUSSEN.

Witnesses:

WM. J. McCONVILLE,

H. S. BARBOUR.