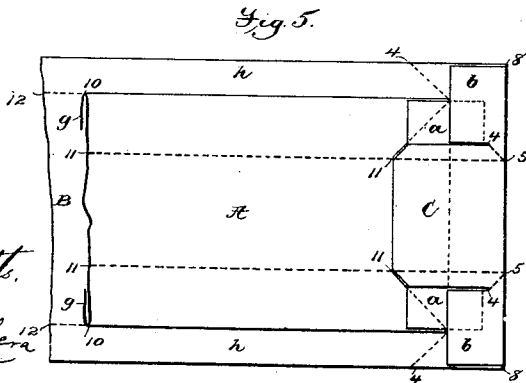
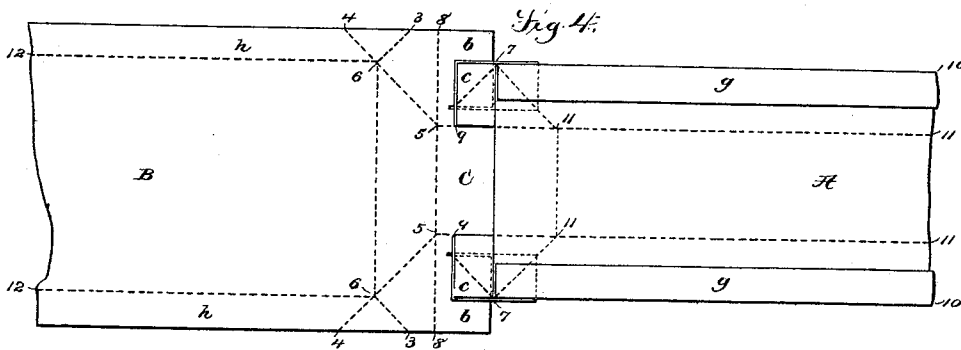
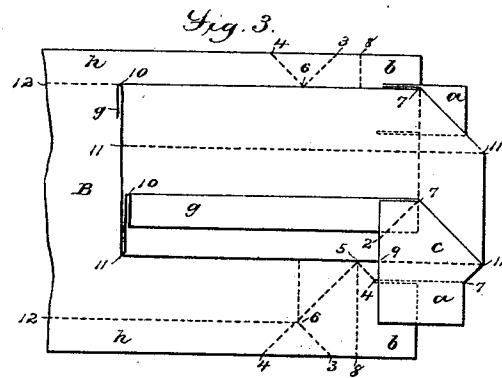
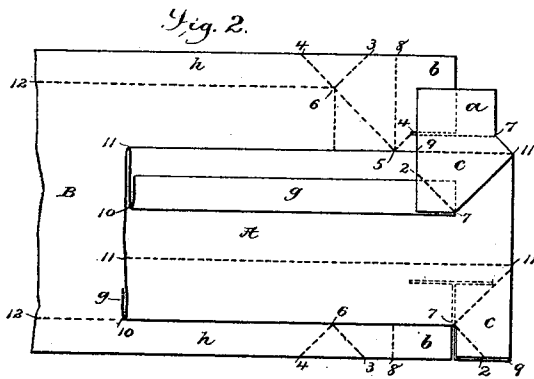
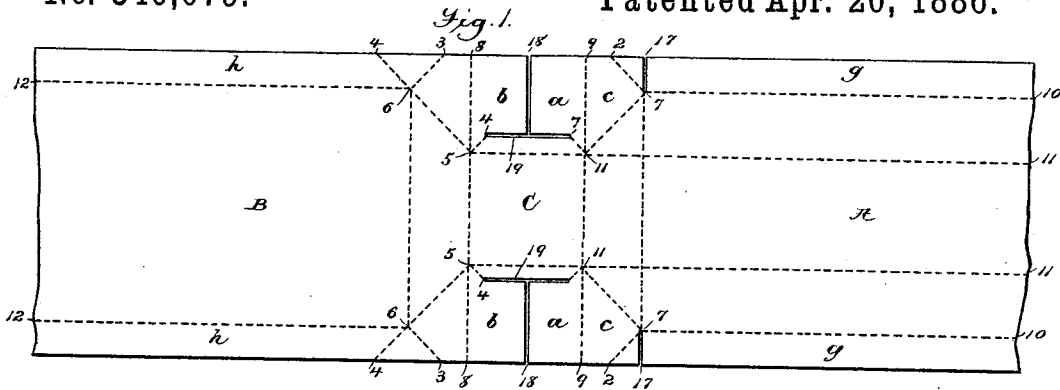


D. APPEL.
PAPER BAG.

No. 340,079.

Patented Apr. 20, 1886.



Attest:
G. H. Batts.
A. A. Jarboe

Inventor:
Daniel Appel
by
Munson & Philipp
Attys:

(No Model.)

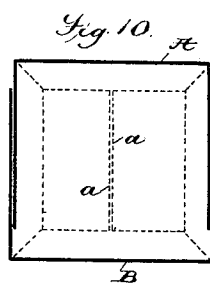
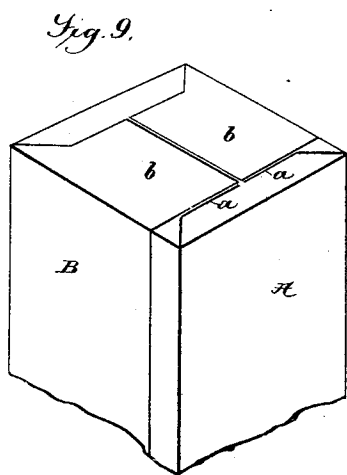
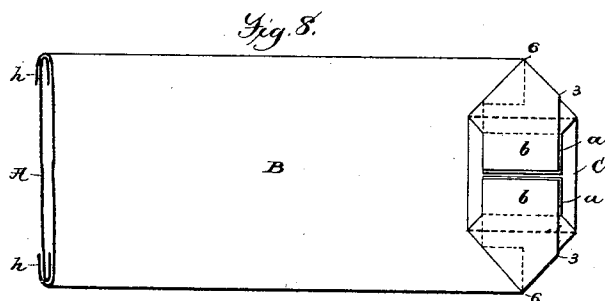
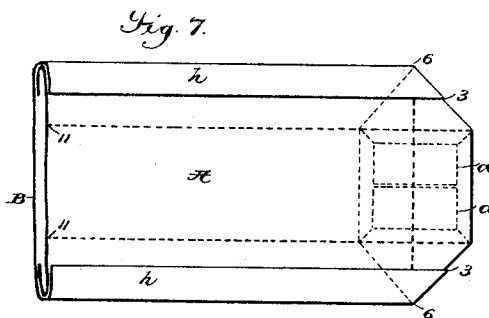
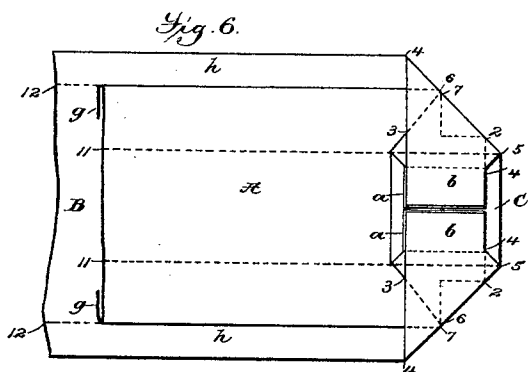
2 Sheets—Sheet 2.

D. APPEL.

PAPER BAG.

No. 340,079.

Patented Apr. 20, 1886.



Attest:
Geo. H. Botts,
A. N. Jasbera.

Inventor:
Daniel Appel
by
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Attys.

UNITED STATES PATENT OFFICE.

DANIEL APPEL, OF CLEVELAND, OHIO, ASSIGNOR TO THE UNION PAPER BAG MACHINE COMPANY, OF PHILADELPHIA, PENNSYLVANIA.

PAPER BAG.

SPECIFICATION forming part of Letters Patent No. 340,079, dated April 20, 1886.

Application filed October 19, 1885. Serial No. 180,366. (No model.)

To all whom it may concern:

Be it known that I, DANIEL APPEL, a citizen of the United States, residing at Cleveland, county of Cuyahoga, and State of Ohio, have invented certain new and useful improvements in Paper Bags, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates, generally, to that class of paper bags which are made from a single piece of paper, which is folded transversely upon itself and united at its edges, so as to form a bag having two side seams and a seamless bottom. The invention relates particularly, however, to a bag of this class which is provided with what is known in the art as a "satchel-bottom."

The bags constructed according to the present invention may be made from a continuous web or from detached sheets or blanks, the same as is the case with most of the ordinary forms of paper bags.

In carrying on the practical manufacture of bags according to the present invention it will usually, however, be found most desirable to employ detached blanks which have been previously cut to the proper form. The operation of making a bag from such a blank is therefore illustrated in the present case.

As a full understanding of the construction of the bag can be best imparted by a detailed description of the manner in which the blank is treated in forming it, such description will now be given, reference being had to the accompanying drawings, in which—

Figure 1 is a view of a portion of a blank of suitable form for making a bag according to the present invention, the dotted lines indicating the lines upon which the blank is folded in the formation of the bag. Figs. 2 to 6, inclusive, illustrate the various steps in the formation of the bag. Figs. 7 and 8 are views of the opposite sides of the completed bag. Fig. 9 is a perspective view of the bottom of the bag when distended, and Fig. 10 is an inside view of the same.

Referring to said figures, it is to be understood that the sheet or blank, a part of which is shown in Fig. 1, is of rectangular form, and of suitable dimensions to form a bag of the

desired size and proportions. Preliminary to the folding the blank is provided at or near the middle of its length and upon opposite sides with transverse cuts 18, which extend inward from the edges to a point near the edge of that portion of the blank which forms the bottom of the completed bag, and with longitudinal slits 19, which intersect the ends of the cuts 18, and are of a length about equal to the width of the bottom of the completed bag. These cuts and slits 18 19 serve to form free portions *a a* and *b b* at the opposite sides of the blank, the purpose of which will hereinafter appear. The blank is also provided at a suitable distance to one side of the cuts 18 with two short cuts, 17, which extend inward a distance equal, or about equal, to one-half of the lap of the paper in forming the side seams, and serve to form free side portions or lips, *g*, at one end of the blank.

In addition to the cuts and slits specified, the blank may and preferably will be creased upon the dotted lines indicated, to aid in making the several folds necessary in the formation of the bag.

In making a bag from a blank thus formed the free portions *g* are first folded inward on the lines 7 10, after which the blank is folded transversely on the line 9 9, so as to bring the portion A, which forms one side of the bag, over onto the portion C, which forms the bottom of the bag, and the portion B, which forms the other side of the bag, as shown in Fig. 2. This being done, one edge of the portion A is folded inward on the line 11 11, which at the same time forms diagonal folds on the lines 7 11 and brings the free portion *a* and the portion *c*, which lies between the portion *a* and the cut 17, into the position shown in Fig. 2, thereby causing the portion *a* to partly overlap the portion *b*, and causing the line 9 11 to coincide with the line 5 11. The edge of the portion A is then folded back on the line 11 11 to its original position, thus folding the portion *c* upon the line 9 11, and bringing the portion *c* on top of the portion *a*, and both the portions *a c* beneath the edge of the portion A, as shown in Fig. 3. The other edge of the portion A is then treated in like manner. It is first folded inward on the line 11 11, thus making diagonal folds on the lines 7

11 at the other side of the blank, and bringing the portions *a c* at that side of the blank to the position shown in Fig. 3, after which it is folded back to its original position, thus bringing the portions *a c* at that edge of the blank beneath the edge of the portion A. It will of course be understood that both edges of the portion A may be folded inward and then outward simultaneously, or that the second edge may be folded inward before the first is folded back to its original position. After the portions *a c* upon both sides of the blank have been folded under the edges of the portion A, as just described, the side portion, A, is raised up from the portion B, and is folded outward on the line 7 7, as shown in Fig. 4. The portion A and the bottom portion, C, are then folded back on the line 8 8, as shown in Fig. 5, thus causing the line 7 7 to coincide with the line 6 6, and at the same time bringing the free portions *b* on top of the free portions *a*, and causing the bottom portion, C, to overlap the side portion, A, for one-half its width, as shown in Fig. 5. After this is done the free portions *a* and the edges of the bottom portion, C, are folded inward on the coinciding lines 5 11 and 9 11, thereby removing the portions *a* from beneath the portions *b* and laying the former over onto the bottom portion C.

In folding the edges of the portion C over on the lines 5 11 the portions *b* will be drawn inward so as to form diagonal folds upon the lines 4 5, and also upon the lines 2 7, and permit the portions *b* to be laid down directly on top of the portions *a*, as shown in Fig. 6. After this has been done the side portions, A B, are folded over together on coinciding lines 6 6 and 7 7, thereby carrying the bottom portion, C, over so that it overlaps the side B, as shown in Fig. 8, and at the same time unfold-

ing the folds upon the lines 4 6, and forming diagonal folds on the lines 3 6, and causing the narrow marginal portions *h* of the side B to be folded over on the lines 6 12 onto the side R, as shown in Fig. 7, thus completing the formation of the bag. It will be observed that by this manipulation of the blank a bag is formed which has a seamless satchel-bottom. The overlapping plies or points formed by the free portions *a* and *b*, which correspond to the points of the diamond in an ordinary satchel-bottom bag made from a tubular blank, will of course be provided with suitable lines of paste, by which they will be secured to each other and to the bottom C and the marginal portions *h* or both the portions *h*, and the free side portions, *g*, will also be provided with suitable lines of paste, to properly unite the edges of the blank to form the side seams of the bag.

In conclusion it is to be remarked that the folding described may be varied considerably without departing from the essential features of the invention, and that the form of the blank may be varied as is shown.

The free side portions, *g*, if preferred, may be removed from the blank, and this will somewhat simplify the folding.

What I claim is—

A bag having two side seams and a seamless bottom, and having the free portions *a b*, formed by the cuts and slits 18 19, folded inward and secured to the bottom, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

DANIEL APPEL.

Witnesses:

T. H. PALMER,
GEO. H. GRAHAM.