(Model.)

G. O. BLOWERS.

PAPER BAG.

No. 286,896. Patented Oct. 16, 1883.

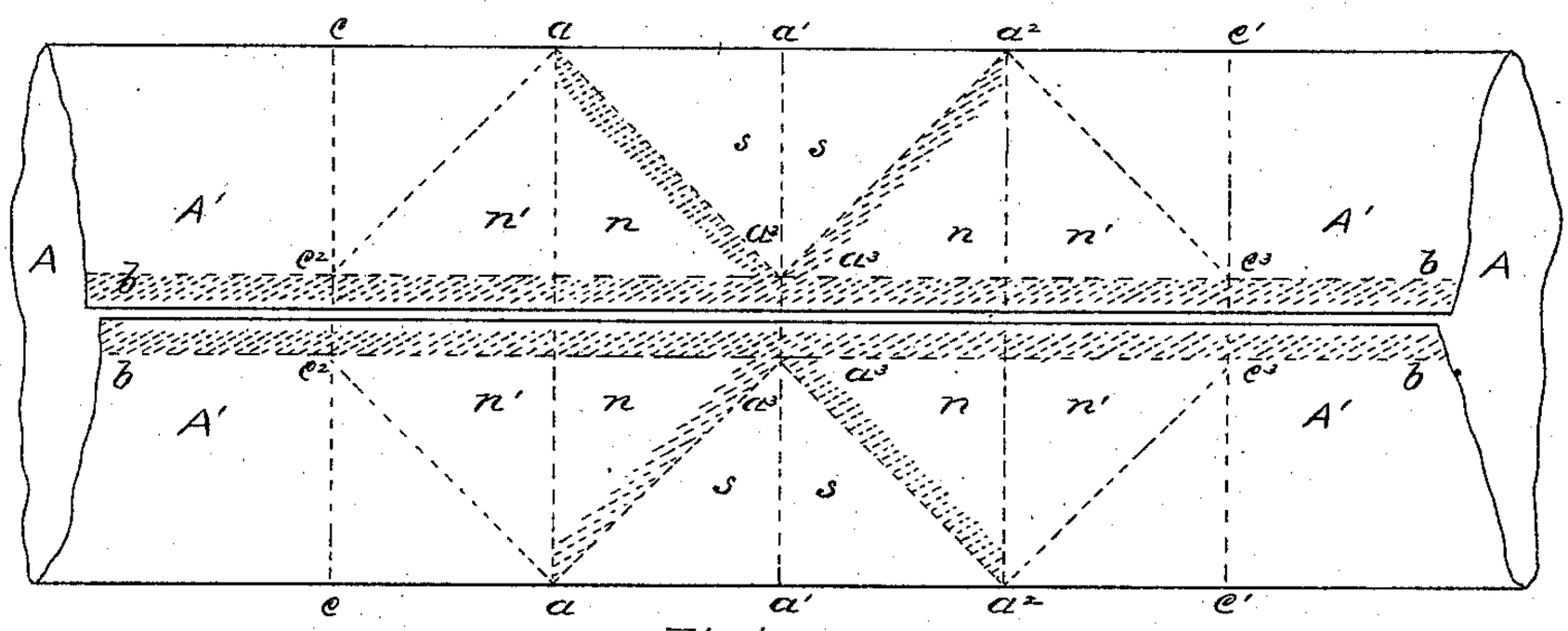

Fig. 1.

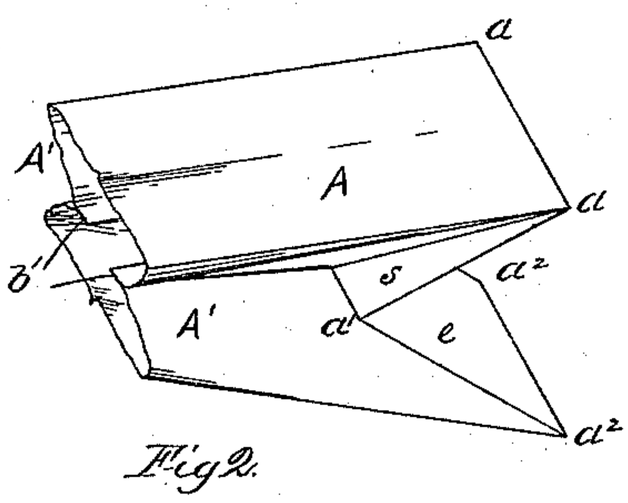

Fig. 2.

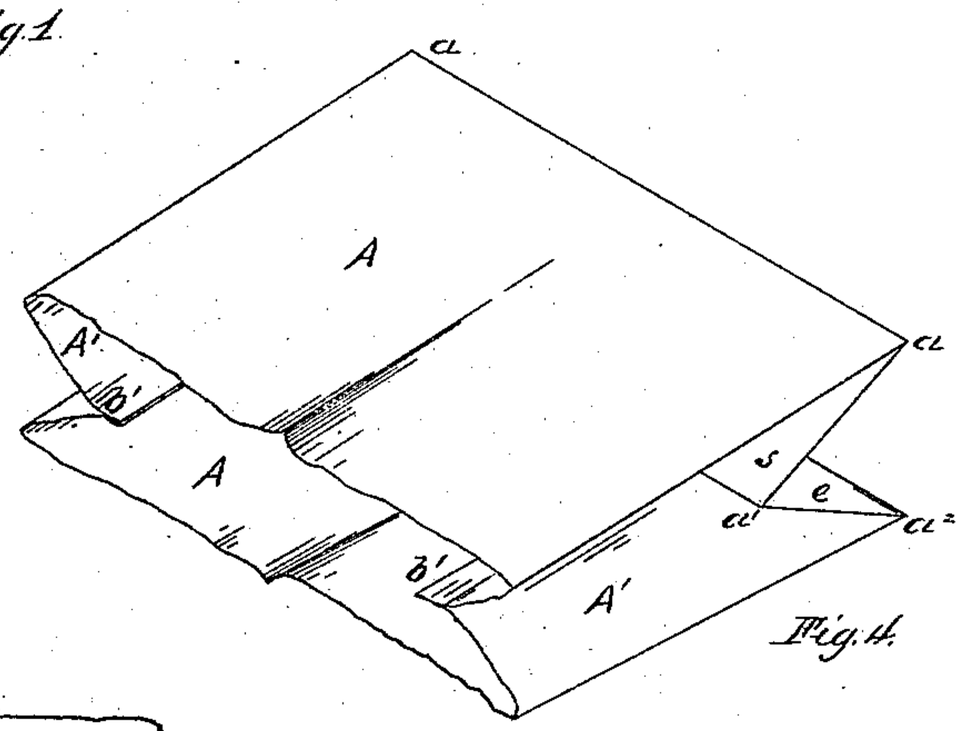

Fig. 4.

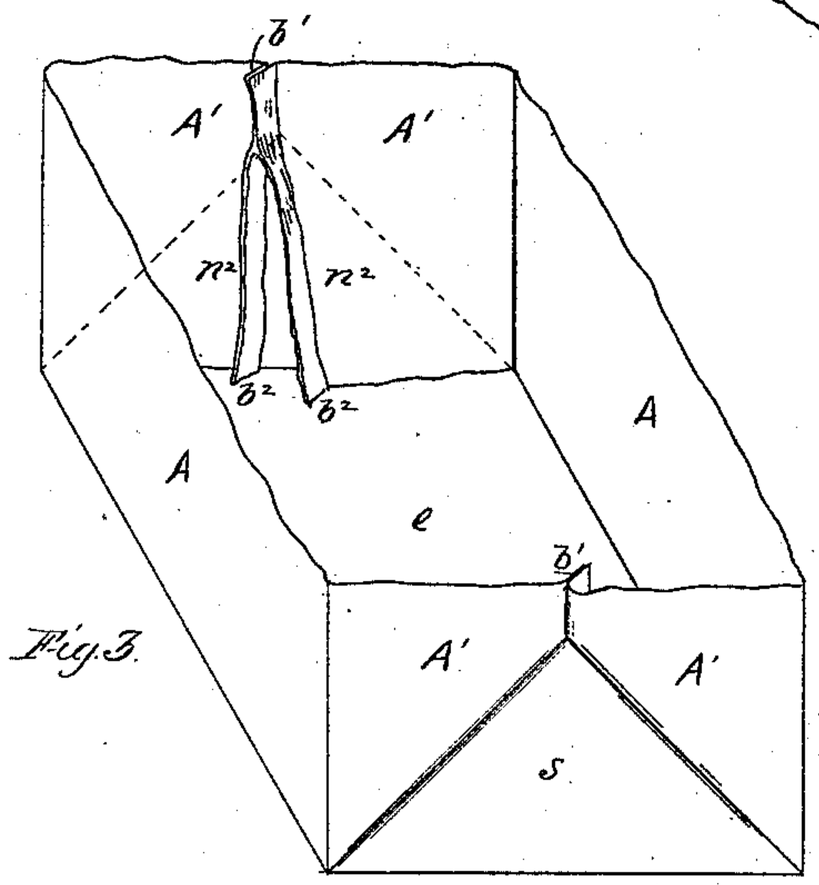

Fig. 3.

Witnesses.
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UNITED STATES PATENT OFFICE.

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PAPER BAG.

SPECIFICATION forming part of Letters Patent No. 286,896, dated October 16, 1883.

Application filed March 26, 1883. (Model.)

To all whom it may concern:

Be it known that I, GEORGE O. BLOWERS, of Canajoharie, county of Montgomery, State of New York, have invented or discovered a new and useful Improvement in Paper Bags; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—like letters indicating like parts—

Figure 1 is a plan view of the middle portion of a flattened tubular blank, illustrating a portion of my present invention. Fig. 2 shows, but to a reduced scale, the blank as folded and slightly distended. Fig. 3 shows the bottom portion or end of a distended bag; and Fig. 4 is a perspective view of the bottom end of a bag of a somewhat different form, the same being folded and slightly distended.

My present invention relates to an improved paper bag, and to a method of forming the same. It may be applied to the making of paper bags generally in which a rectangular bottom is desired; but I will first describe it as applied to the making of a bag the bottom of which is square, or nearly so. The bag may be made by hand-work entirely, or partly by hand-work and partly by machinery; but as most all the operations involved may be performed by the use of mechanical appliances, such as are well known in the art, I prefer to use such in the work to be described. The blanks are brought to a tubular flattened form either from sheets cut to length or from a continuous web, to be subsequently severed. The middle portion of such a blank is shown in Fig. 1, where A represents back half or fold of the blank, and A′ the other half or fold, the latter being formed by folding in equal widths of the edges or sides of the sheet or web. The middle part of each blank should be creased in the lines *a a*, *a′ a′*, and a^2 a^2; or, in lieu thereof, it may be so worked or manipulated that in the subsequent folding the bends shall naturally or normally be formed on these lines, or approximately so. The material of the back fold, A, within or between the lines *a a* and a^2 a^2, will constitute the bottom of the bag. Paste is applied along near the edges of the sheet, as at *b b*, and also along the lines *a* a^3 and a^2 a^3, and creases may be made along the same lines, if desired; but I do not consider them essential.

The better to describe the present invention, I have added the dotted lines *c c* and *c′ c′*, and also the diagonal dotted lines running from each of the lines *a a* to c^2, and from each end of the line a^2 a^2 to c^3. In this way I lay out in the top folds, A′, eight triangular parts, arranged in pairs, each pair being lettered *n n′*, and four triangular parts, each lettered *s*.

The bag-blank having been creased and paste applied, as above described, it is ready for folding. This is done by bending the middle or bottom portion of the blank upward on the line *a′ a′* and downward on the lines *a a* and a^2 a^2, and so bringing the extreme outer ends together face to face. In this operation the parts between the lines *a a* and *a′ a′* will come face to face on the surface between the lines *a a* and *c c*, and the parts between the lines *a′ a′* and a^2 a^2 will come face to face on the surface between the lines a^2 a^2 and *c′ c′*, so that when the paste dries permanent adhesion will ensue, and the ends of the blank outside the lines *c c* and *c′ c′*, coming together face to face, with the paste-lines *b b* coinciding, will also adhere, and the bag will be complete. The bottom end of the bag thus formed is represented at Fig. 2 in a partly opened out or distended condition, where *e* represents the bottom of the bag, folded inward in V shape on the line *a′ a′* of Fig. 1. When the bag is fully distended, the bottom will be as at *e*, Fig. 3. The meeting pasted edges *b* of Fig. 1 will form the plaits *b′* b^2, which, extending up and down the sides of the bag, but on the insides, and being double at the lower end, will fold around flatwise, as in Fig. 3. The parts *s s* of Fig. 1, in folding, fold onto the bottom *e*, as illustrated in Fig. 2, but do not adhere thereto, and when the bag is opened out they form a part of the sides or body, as at *s*, Fig. 3. The parts *n n′* of Fig. 1 fold together in pairs, and constitute simply loose flaps, as at n^2, Fig. 3, which lie back against the adjacent sides *s* of the distended bag. Thus it will be seen that the only work required in making the bag is the folding in of the edges A′ of the sheet or web, making or providing for three crease-lines, *a a*, *a′ a′*, and a^2 a^2, adding two lines of paste, *b b*, and

oblique lines of paste $a\ a^3$, $a^2\ a^3$, and folding on the lines of the creasing; but it is not essential that the parts A′ A′ be folded over so as to meet. A narrow edge may be folded over, the creasing done, and the paste be applied along near the edges of the folded parts, and the work go on as before. Such a folded bag is shown in Fig. 4. In either or any case the distance apart of the crease-lines should be exactly or approximately equal to the width of the part A′ folded in. Following these directions, no difficulty will be experienced in making bags of different sizes and styles, but with rectangular-shaped bottoms; and it is an important element of utility in the bag described that by reason of its bellows-like sides and bellows bottom, as it opens out or is distended for filling, it takes shape at once, so that it is not necessary to bend in or manipulate the corners, as is now necessary in most patterns or styles of so-called "square-bottom grocer's bag." The bag as thus formed, it will be observed, has two unbroken sides, A, two sides, A′, each having a plaited joint, b', and that the waste material is disposed of in the plaits b^2 and flaps n^2, which modes of disposing of the waste material are much better than to cut it out and throw it away.

It will be seen that by the application of the oblique lines of paste $a\ a^3$ and $a^2\ a^3$ the finished bag shown at Fig. 3 will be pasted along the triangular junction formed by the portions A, A′, and s, and thus a better article be produced.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The method of making paper bags by folding in the lateral sides of the blank or web, providing three crease or bending lines at the middle of the blank at distances apart equal or approximately equal to the width of each infolded side, applying lines of paste along at or near the edge of each infolded side, and also the oblique lines of paste $a\ a^3$, $a^2\ a^3$, folding in the bottom to a V-form, and the ends over face to face, substantially as set forth.

2. A paper bag made from a blank or web the sides of which have been folded in, and which has been creased at the lines $a\ a$ and a' a' and $a^2\ a^2$, and which has had paste applied at or near the said infolded edges, and also at the four oblique lines, as specified, the said bag having a bellows-bottom form at the middle of the blank endwise, as set forth.

3. A paper bag made from a blank or web the sides of which have been folded in, and which has been creased at the lines $a\ a$, $a'\ a'$, $a^2\ a^2$, and also from each end of $a\ a$ and $a^2\ a^2$ to the point a^3, and which has had paste applied at or near the said infolded edges, and also at the four oblique lines, as specified, the said bag having a bellows bottom formed at the middle of the blank endwise, as set forth.

4. A paper bag made from a single sheet having a rectangular bottom, e, two sides, A, free from joints, and the two sides A′, each formed by plaited joint b', and with the waste material disposed of in the plaits b^2, and flaps n^2, substantially as set forth.

In testimony whereof I have hereunto set my hand.

GEORGE O. BLOWERS.

Witnesses:
JAMES ARKELL,
A. B. FREY.