

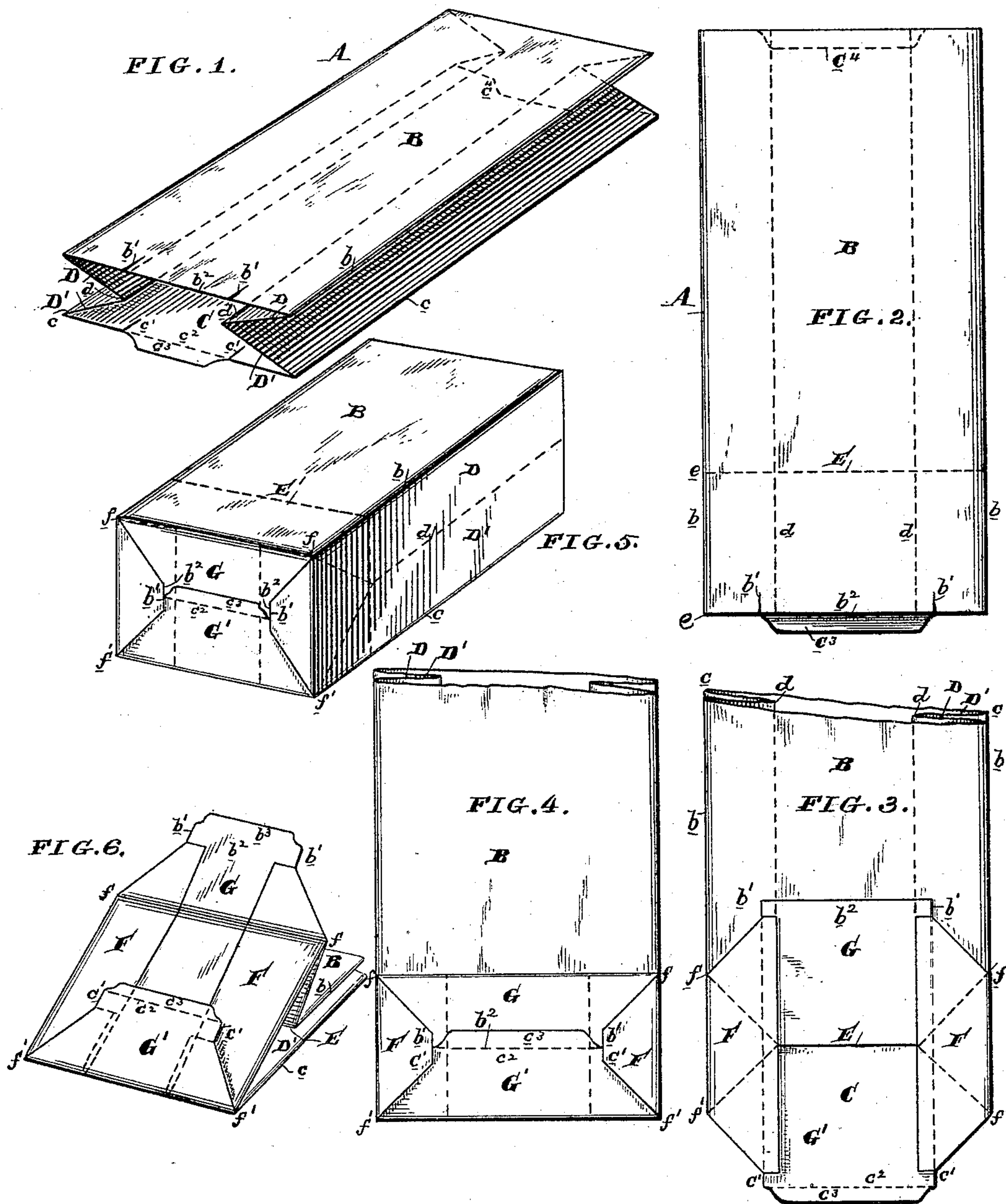
(No Model.)

C. B. STILWELL.

PAPER BAG.

No. 405,616.

Patented June 18, 1889.



WITNESSES:

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INVENTOR

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UNITED STATES PATENT OFFICE.

CHARLES B. STILWELL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
THE UNION PAPER BAG MACHINE COMPANY, OF SAME PLACE.

PAPER BAG.

SPECIFICATION forming part of Letters Patent No. 405,616, dated June 18, 1889.

Application filed January 21, 1889. Serial No. 297,033. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. STILWELL, of the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improved Paper Bag, 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 that class of paper bags which may be called "bellows-sided satchel-bottomed bags," such in general character as the bag shown and described in Re-issued Letters Patent No. 10,083, granted to the Union Paper Bag Machine Company April 11, 1882, as the assignee of one Deering; and my object is to so construct such bags that they may have the greatest possible capacity with the least possible consumption of paper, while at the same time the strength and correct proportions of the bag are in no wise impaired.

The method or process of making a paper bag, apart from the instrumentalities employed, is of course the mere making of folds or folds and cuts in the paper, by which folds and cuts the finished bag resulting from the treatment is best described. As with all bags of the kind referred to, the first step is to form a strip of paper into a tube with inwardly-tucked or bellows-folded sides. This is usually done by well-known mechanism acting on long rolls of paper, which, after being folded and pasted into a tube of the proper cross-section, is cut up into bag-blanks. In or before cutting off the blanks any desired slits or lips can of course be formed on its ends, and I make a peculiar novel cut, which, however, can best be described hereinafter. The blanks being formed, the next step is to open up that portion of the tube which is to be formed into the bottom, forming what in satchel-bottomed bags made from untucked tubes is called the "diamond," which name I will hereinafter use to describe this part. This diamond is formed in the usual way, except that in my method I take care that the portion of the blank folded into the diamond shall be (not considering a lip on one edge of the bottom of the blank, and which will be hereinafter described) substantially equal in length to the

breadth of the inwardly-folded or tucked-in sides. As a result of this, the two trapezoidal side folds of the diamond will each have a maximum breadth about equal to one-half of the breadth of the folded-in sides, and from end to end their length will be substantially twice the breadth of said sides. It will be at once understood that the consequence of this construction will be that each of the two final folds by which the bottom is closed and the bag completed will be equal in depth to one-half of the breadth of the folded-in sides of the blank, and as the bottom has of course the same breadth as the folded-in sides these final folds will just about meet without lapping in the center of the bottom. Now if these folds, instead of approximating, exactly corresponded with the dimensions referred to the result would be that the bottom would be just barely closed up, without, however, leaving any room for the necessary paste-seams to hold it together. In order to overcome this difficulty, so far as the securing of the final folds to the edge of the side folds of the diamond is concerned, I make in the bottom of the blank slits, both in the front and back thereof, equidistant from the center line and distant from each other the distance between the two side folds of the diamond plus a distance equal to twice the necessary depth of a pasted seam—say about an inch—as a seam should have a half-inch of paper to receive and hold the paste. The depth of these slits will be the distance from the edge of the paper to the lines of folding of the edges of the diamond. These slits will leave parallel-sided flaps on each end of the diamond, which, when the final folds are made, will lap over the side folds for their entire length and to an extent sufficient to enable a strong pasted seam to be made between them. In order to secure the necessary overlapping of the final folds at the center of the bag, I in cutting the blanks from the tube form on one edge of the portion to be formed into the bottom a projecting flap of a depth sufficient for a pasted seam—say about half an inch—and a breadth which should be about the same as the distance between the slits already referred to, although the exact breadth or form of this

flap is not of the essence of this invention so long as it serves its purpose, as hereinafter described. In cutting blanks from long tubes this flap is cut out from the top of the adjoining blank, leaving a thumb-hole, which is in no wise objectionable. Of course the provision of this flap overcomes the last difficulty in forming the bag, enabling the two final folds to lap and be pasted together in the most approved and secure manner. The bag made by this process, which will form the subject-matter of another application, will, I believe, require less paper for any standard size of bag than any other bag of a similar construction, and said bag is also a thoroughly good and merchantable one.

Reference being now had to the accompanying drawings, which illustrate my invention, Figure 1 is a perspective view of the bag-blank ready for folding into my improved bag. Fig. 2 is a top view of the same blank. Fig. 3 represents the blank as it appears when the diamond has been opened out. Fig. 4 represents the completed bag. Fig. 5 shows in perspective the bag opened up, and Fig. 6 is a perspective view of a slightly-modified form of my bag.

A designates the blank.

B represents the front, and C the back, of the bag-blank.

D D' are the folded-in sides of the blank.

b b are the front corners, and c c the back corners, of the blank.

b' b' indicate the two slits made in the front B of the blank, and c' c' the two slits made in the back C of the blank, b² c² being the flaps which these slits form.

c³ is the extended or prolonged flap, which I make on the front or back of the blank. As shown, it is on the back and forms a prolongation of the flap c².

c⁴ indicates a portion at the top of the back C of the blank, which is cut away to form the flap c³ on another blank when the blanks are cut out of a long tube of paper.

d is the central fold of the tucked-in sides, by which they are divided evenly into laps D and D', as shown.

The first step in making the bag is to select the line on which the diamond shall be opened.

E, Fig. 2, indicates such a line which must be at a distance from the bottom end of the blank equal to the breadth of the tucked-in side—that is, the distance e e, Fig. 2, must be substantially equal to the distance f f', Fig. 5, which is of course the breadth of the sides of the bag.

The next step in making the bag is to open up the diamond on the line E, which results as shown in Fig. 3, where F F represent the side folds of the diamond, the slits b' and c'

having been made so that the flaps b² and c² shall be as much broader than the distance between the two side flaps F as may be necessary to enable them, when folded down, to overlap such flaps sufficiently to form a pasted seam therewith. The final folds of the bag are made by folding the two ends of the diamond, which I have marked G and G', on the line f f and f' f', respectively. The result of these final folds is seen in Fig. 4, which shows that while the flaps b² and c² just meet at the center of the bottom, the prolonged flap c³ overlaps the flap b², enabling the flap G and the flap G' to be properly secured together, while each of such flaps is secured to the side folds F by the overlapping edges of the flaps b² and c² and any desired lines of pasting on the parts behind such flaps.

Fig. 6 represents the prolongation b³ on the flap b² similar to the prolongation c³ on the flap c². Such a construction is of course perfectly feasible, but has, I believe, no good quality which makes it preferable to the plan shown in the other figures of the drawings.

While of course the flap G' could be folded down first and the flap G folded on top of it, I believe that it will be found more convenient to secure the lap c³ on the flap b² rather than to secure the flap b² on top of the flap c³.

To avoid confusion in the lines, I have omitted to represent in the drawings the usual lines of paste by which the flaps G and G' are secured to each other and to the side folds F in forming the bottom. To all skilled in the art it will be obvious how and where such paste-lines should be applied, and it is therefore unnecessary to further refer to them.

In the drawings I have, for the sake of clearness, represented the flap c³ as narrower than the flap c², of which it is a prolongation. In practice, however, these flaps should be of the same breadth, or, at least, the base of c³ should be as broad as c². Its corners may be curved, if desired.

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

As a new article of manufacture, a bellows-sided satchel-bottomed paper bag having its bottom formed with side folds substantially equal in breadth to one-half the breadth of its tucked-in sides, its final folds formed with parallel-sided flaps of such a breadth that they will overlap the said folds sufficiently to form a strong pasted seam therewith, and a prolongation of one of the flaps sufficient in length to overlap and form a pasted seam with the other flap.

CHAS. B. STILWELL.

Witnesses:

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FRANCIS T. CHAMBERS.