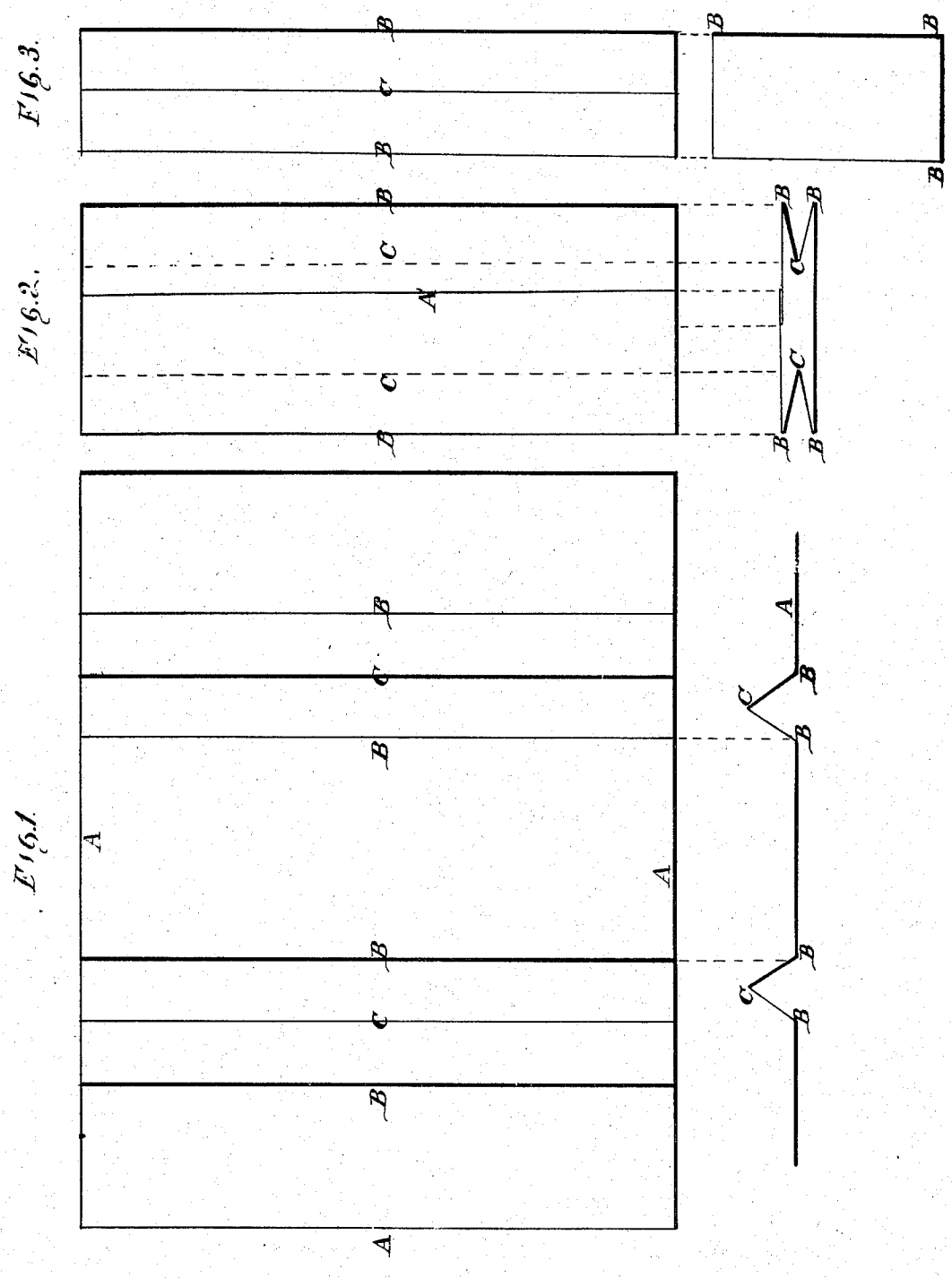
2 Sheets—Sheet 1

M. L. DEERING.

Manufacture of Paper Bags.

No. 227,350. **Patented May 11, 1880.**



Witnesses.
Wm. C. Field
A. L. Champion.

Inventor.
M. L. Deering
per Burridge & Co
Attys

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Fig. 8.

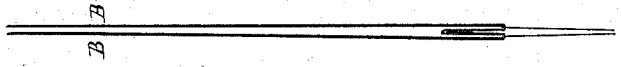


Fig. 7.

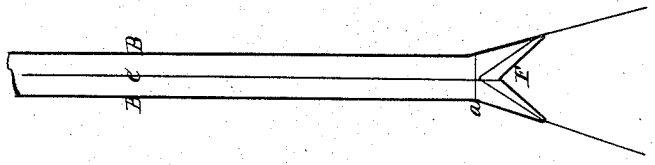


Fig. 6.

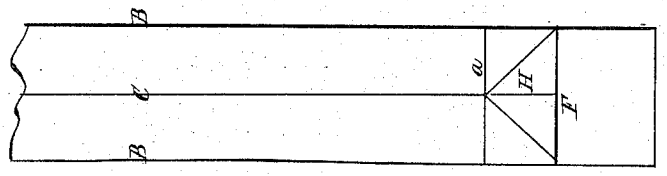


Fig. 5.

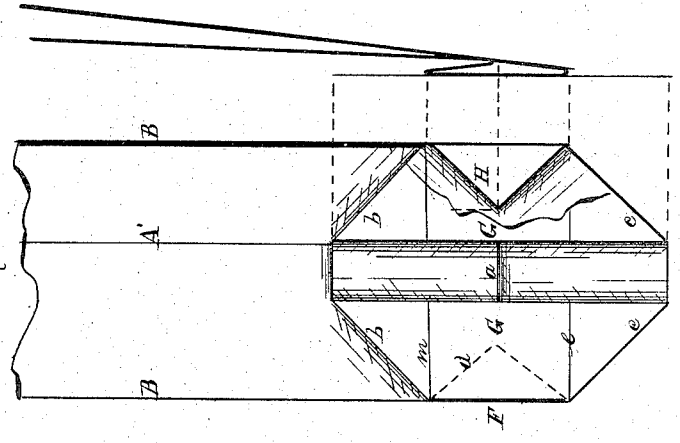


Fig. 4.

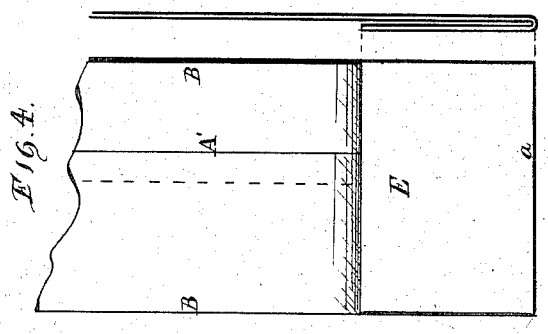


Fig. 12.

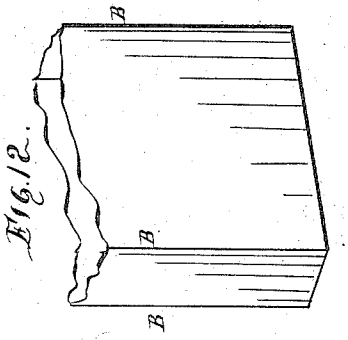


Fig. 11.

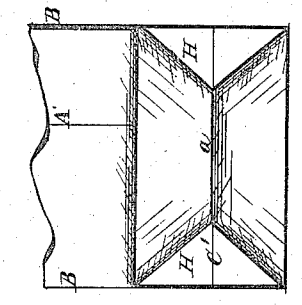


Fig. 10.

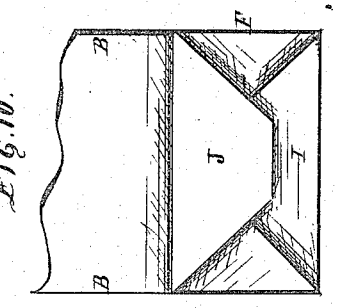
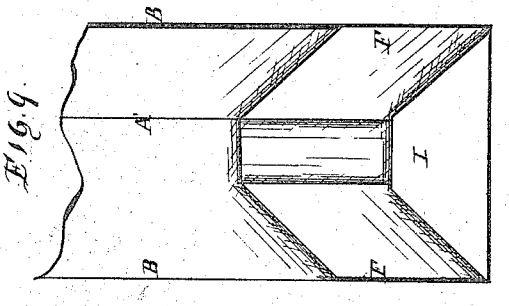


Fig. 9.



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Per Burridge & Co
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UNITED STATES PATENT OFFICE.

MARK L. DEERING, OF CLEVELAND, OHIO.

MANUFACTURE OF PAPER BAGS.

SPECIFICATION forming part of Letters Patent No. 227,350, dated May 11, 1880.

Application filed May 10, 1879.

To all whom it may concern:

Be it known that I, MARK L. DEERING, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in the Manufacture of Paper Bags, of which the following is a description.

The nature of this invention relates to forming the bottoms of paper bags so that said bags when distended shall have flat bottoms of a rectangular form on which to stand erect and unsupported when filled. A full and complete description of the manner of forming the said bottom of the bag is as follows, reference being had to the accompanying drawings for illustrating the various foldings of the paper of which the bag is made.

The outlines of Figure 1 represent a sheet of paper or blank of which to make a bag. The several lines drawn across the blank indicate the first foldings of the paper in the process of making a bag. Fig. 2 is a side view of the blank folded up, forming a bottomless cylinder or tube, and shown as compressed together, or nearly so. Fig. 3 is an edge view of the tube or body of the bag when distended. Fig. 4 is a view of the tube or body of the bag in the second folding of the process of forming the bottom. Fig. 5 shows the third folding in the process, and which represents the sides of the tube or bag as compressed together. Fig. 6 shows an edge view of the tube or bag Fig. 5 when distended. Fig. 7 shows an edge view of the bag Fig. 6 when partially compressed together. Fig. 8 shows an edge view of the tube, Fig. 6, when wholly compressed—that is to say, flattened down. Fig. 9 shows the fourth folding of the tube or bag in the process of forming the bottom. Fig. 10 shows the fifth folding, which completes the bag. Fig. 11 is an inside view of the folding shown in Fig. 5. Fig. 12 is a perspective view of a bag, the upper portion of which is represented as torn off for convenience, and so of the other figures on Plate 2.

Like letters of reference refer to like parts in the several views.

In order to make the above-said bag a sheet of paper, termed a "blank," (which is represented by the outlines A in Fig. 1,) is folded by any suitable means in direction of the lines B and C. The lines B form the corners D, Fig. 12, of the bag. This folding is the first in the process of making the bag. The two sides A′ A′ of the blank are then brought together and lapped upon each other, as seen at A′, Fig. 2, and secured by pasting or otherwise.

The dotted lines C in Fig. 2 correspond to the lines C in Figs. 1 and 3. The body of the bag thus formed by the folds B C and lapping of the sides A′ is a rectangular tube when distended, as shown in Fig. 3, and when the sides are compressed together, as shown in Fig. 2, the lines C in Fig. 1 form the folds C in said Fig. 2. This completes the first foldings in the process of making the bag.

The bottom is now to be made. To this end a certain portion of one end of the tube, on being compressed together, is creased and doubled back onto the bag, making a lap, E, Fig. 4, and the crease *a* in Fig. 6. This makes the second folding in the process.

The third fold is made by turning the lap E up at about right angle to the body of the bag and distending it, as shown in Fig. 5, then forming across the ends of the upturned lap a crease, F, Fig. 6, by pushing inward the material above the crease, and folding it down upon the bag, making the laps G G, Fig. 5, both of which are alike. One end of the laps lies upon the bag above the crease *a* of the lap E, as seen at *b*. The other end of said laps extends below said crease, as shown at *c* in said Fig. 5. This manipulation of the bag not only forms the two laps G G, but also the triangular folds H, Figs. 6 and 11, (shown also in Fig. 5.) A portion of the lap G is represented as torn away, that the triangular fold may be seen.

The fourth fold in the process is made by folding the lower parts of the laps G along the line *e*, Fig. 5, and doubling it down upon the bag, forming the lap I, Fig. 9, which is secured in place by the application of paste along the edge of the lap.

The fifth fold is made in like manner by folding over onto the lap I the upper part of the laps G G, which is folded along the crease *m*, Fig. 5, forming the lap J, Fig. 10, which in like manner is secured with paste applied to the edges of the lap. It is not essential that the lap I be first made. The lap J may be

made first, and the lap I doubled onto it. This last folding completes the bottom of the bag, an external view of which is shown in said Fig. 10.

A perspective view of the bag when distended is shown in Fig. 12, the upper part of which is shown as torn off for convenience.

In making bags it is not necessary that a single sheet or blank should be used for each bag. A long strip of paper may be treated with the first foldings (and pasted, as herein described) of the blank Fig. 1, thereby forming a long tube, which may be cut into lengths for bags.

The bag herein described is represented as of an oblong square. Bags, however, of other rectangular forms can be made by the same or similar foldings and laps without changing the nature of the invention.

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

The herein-described process or method of forming the bottoms of paper bags, by making, in a sheet of paper or blank, the folds B and C, then pasting together the two ends A′ A′, forming the body or tube of the bag, then forming the fold E at one end of said body or tube, and the inwardly-projecting triangular folds H H, side folds, G G, and fold I, upon which is then folded the lap J, secured in place by pasting or otherwise, substantially as set forth.

MARK L. DEERING.

Witnesses:
CHAS. J. BOWELL,
J. H. BURRIDGE.