

(No Model.)

D. APPEL.

ART OR METHOD OF MANUFACTURING PAPER BAGS.

No. 258,272.

Patented May 23, 1882.

Fig. 5.

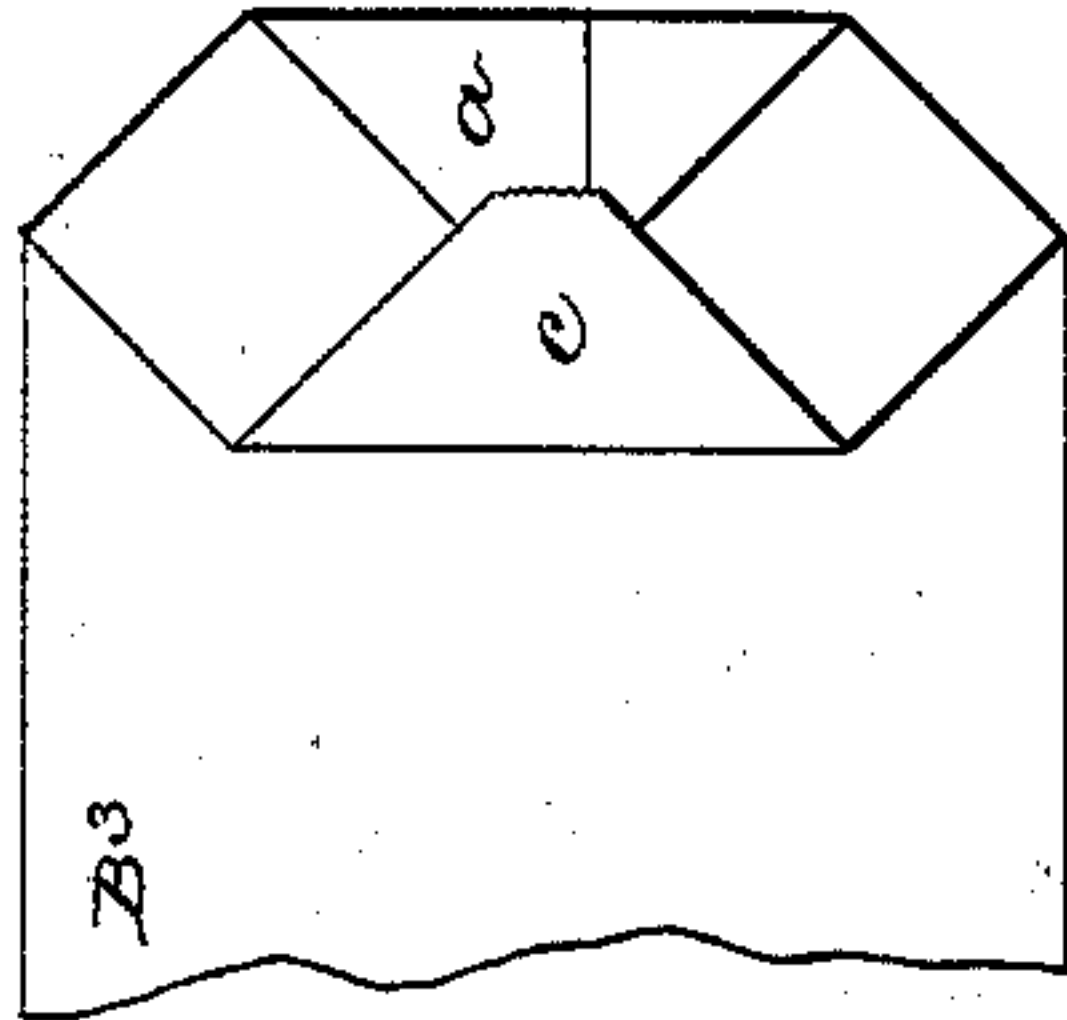


Fig. 4.

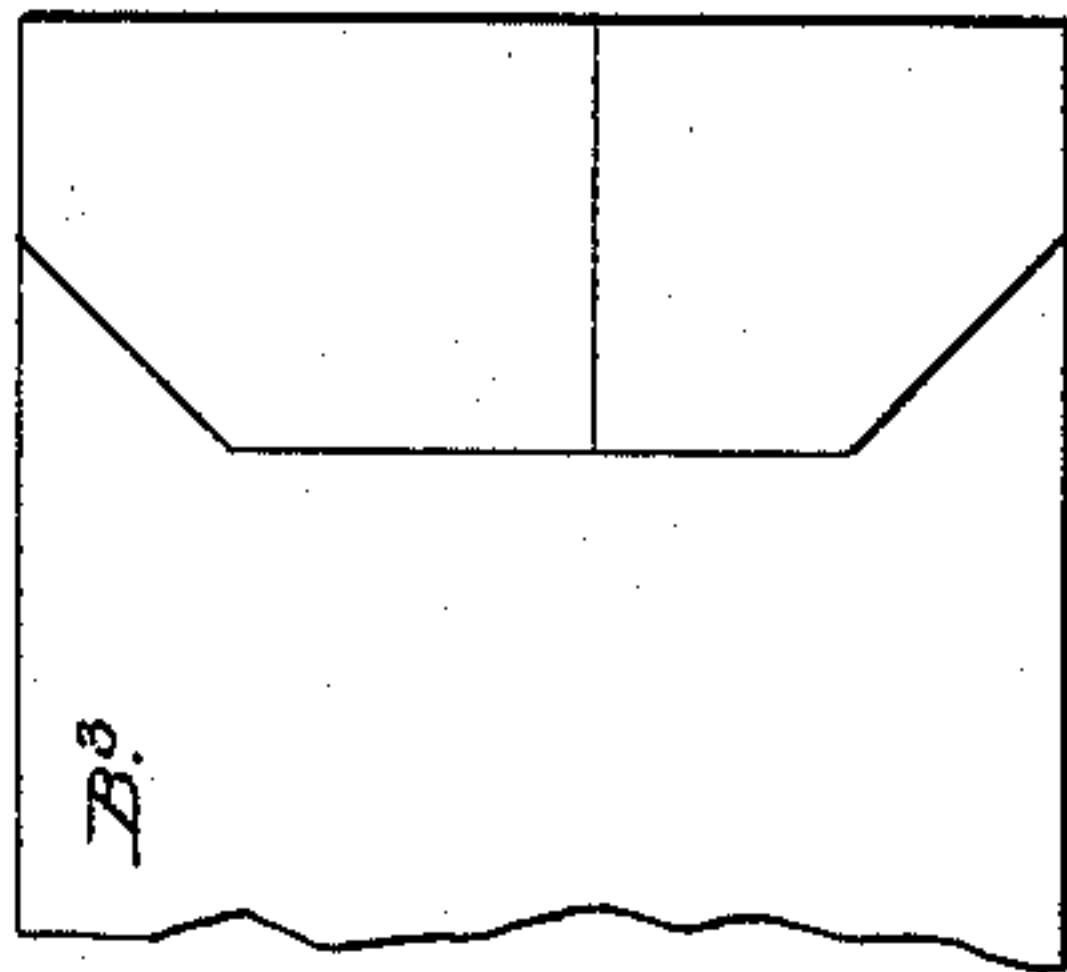


Fig. 3.

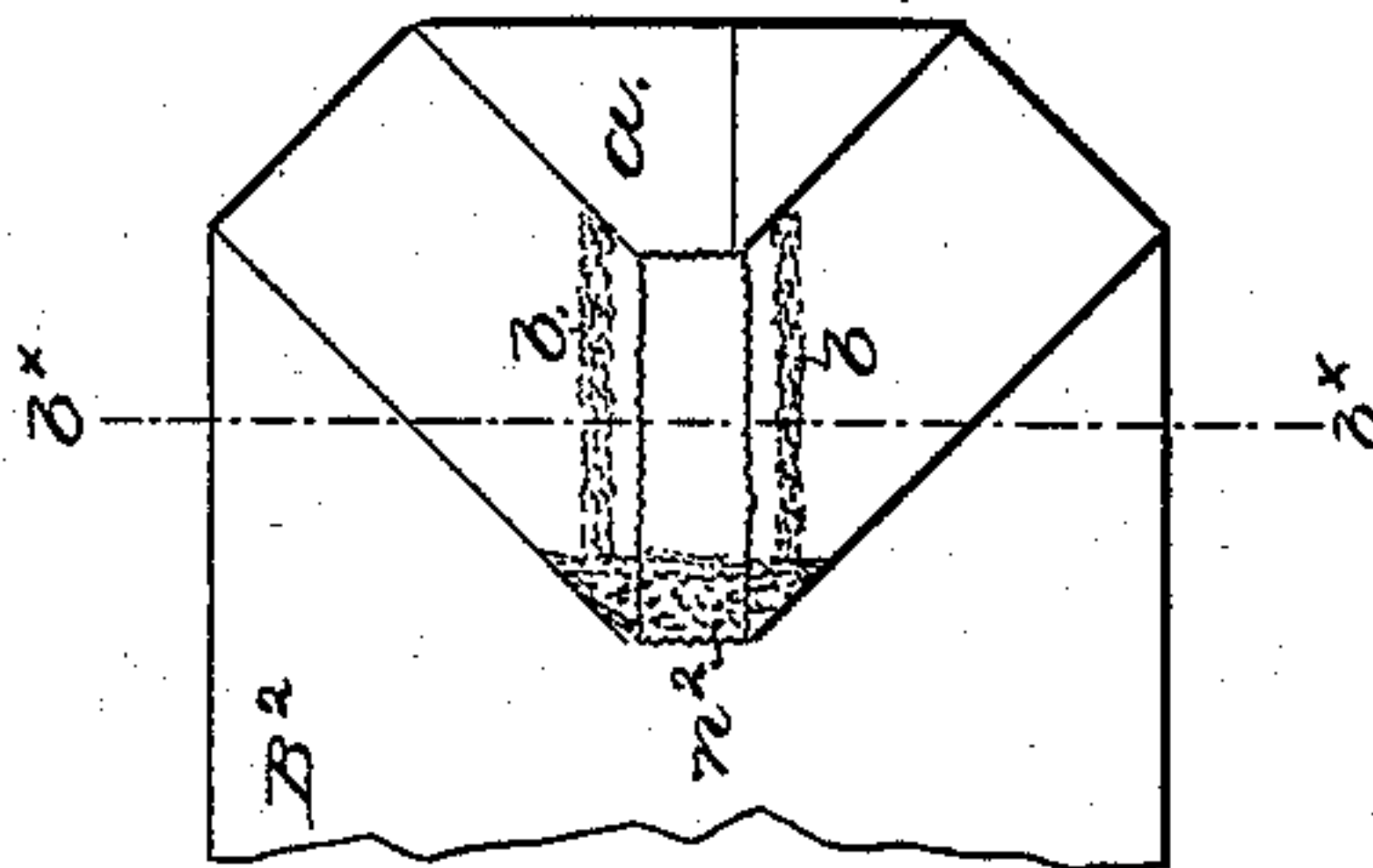


Fig. 2.

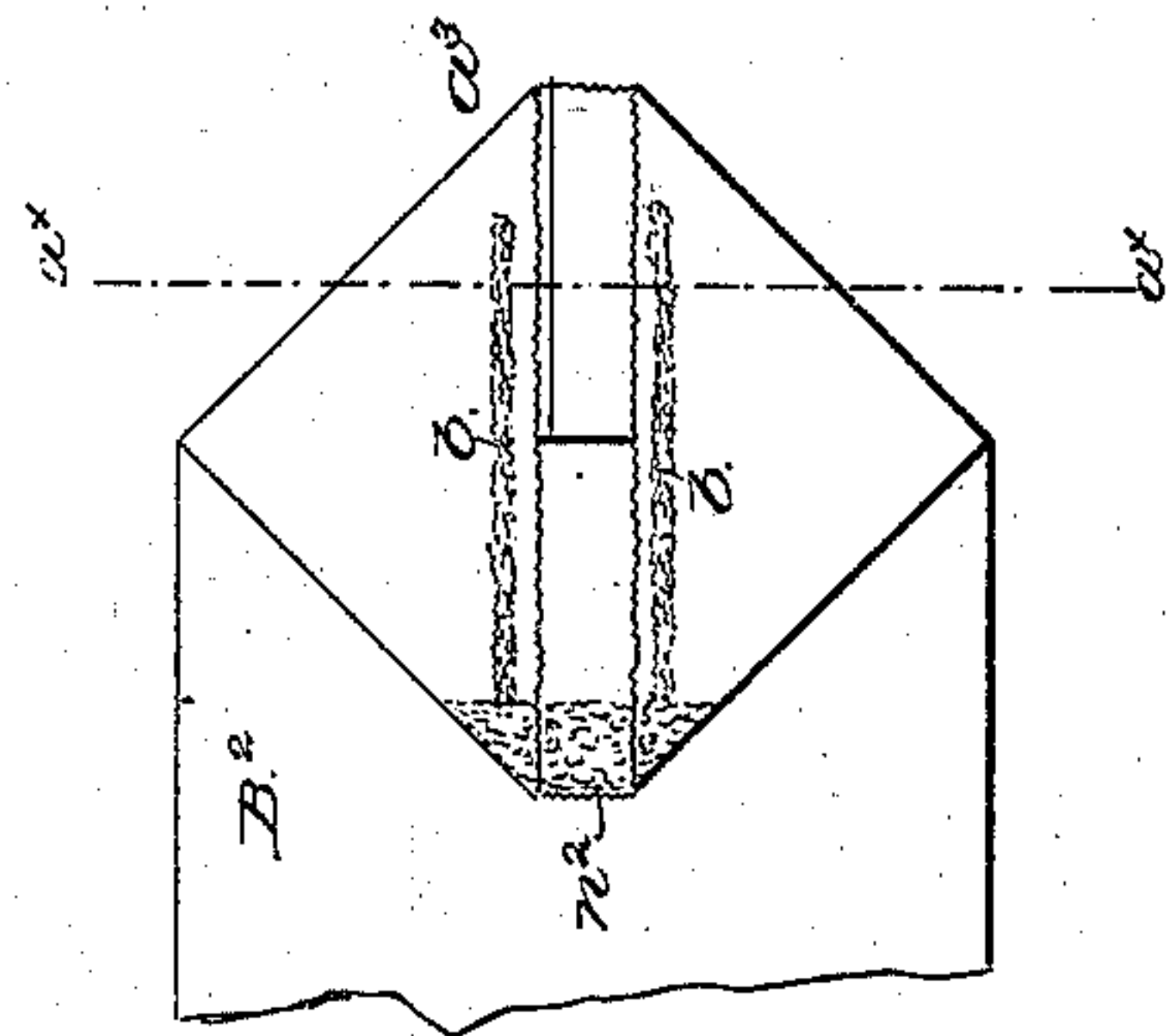
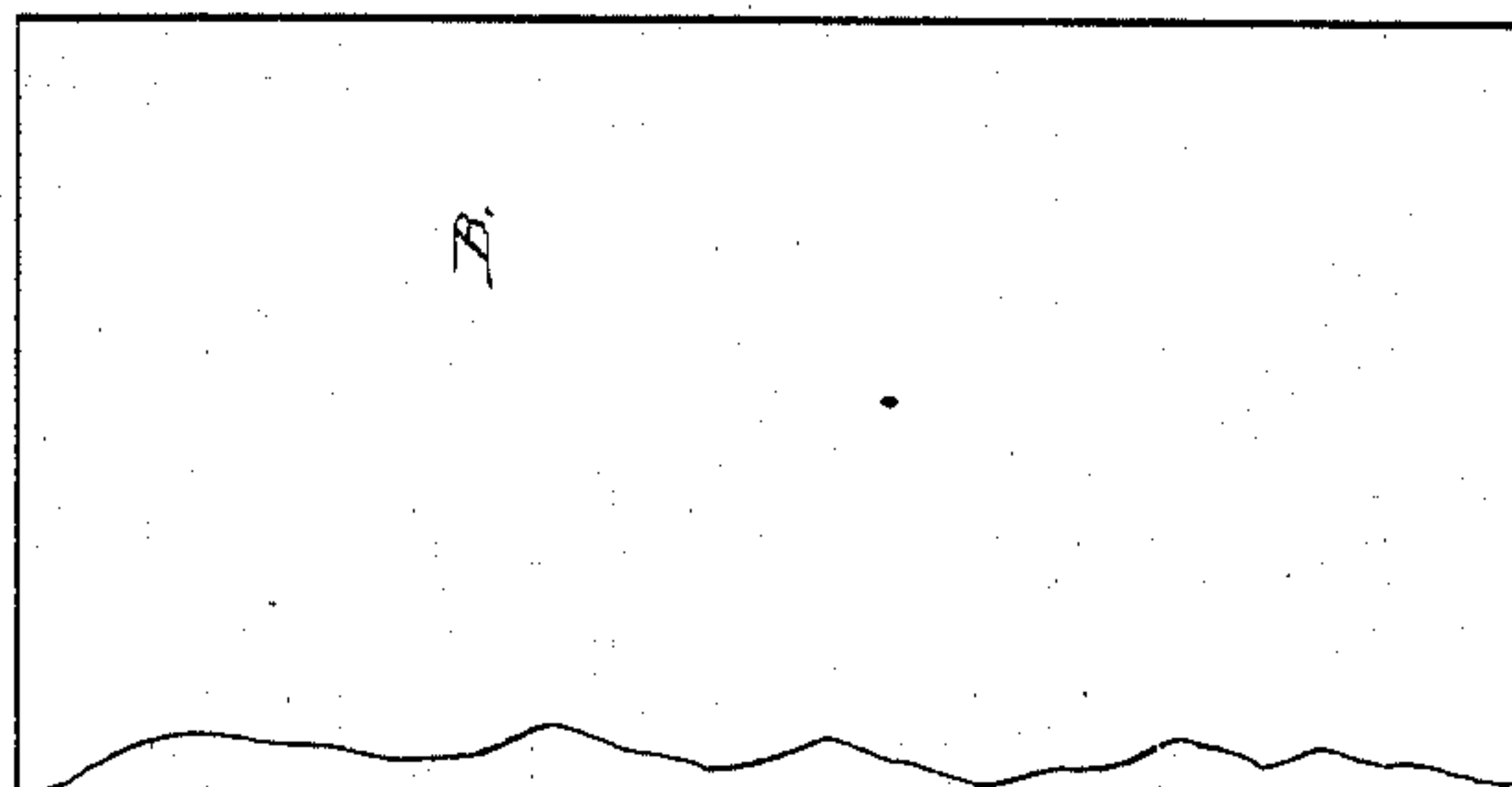


Fig. 1.



Witnesses  
John F. C. Brinkert  
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by  
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# UNITED STATES PATENT OFFICE.

DANIEL APPEL, OF CLEVELAND, OHIO, ASSIGNOR TO THE EASTERN PAPER BAG COMPANY, OF HARTFORD, CONNECTICUT.

## ART OR METHOD OF MANUFACTURING PAPER BAGS.

SPECIFICATION forming part of Letters Patent No. 258,272, dated May 23, 1882.

Application filed September 29, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL APPEL, of Cleveland, county of Cuyahoga, State of Ohio, have invented a new and useful Improvement in the Art or Method of Manufacturing Paper Bags, of which the following description, in connection with the accompanying drawings, is a specification.

This invention has for its object the production, in a novel manner, of a satchel-bottom paper bag made from a strip of paper folded to form a tube; and it consists in first forming the diamond fold, then cross-folding the leading corner of the diamond fold, and subsequently cross-folding the rearmost corner of the diamond fold to form the last cross-fold of the bag-bottom, and together with it the main body of the bag-blank, on the line of the second cross-fold.

Figure 1 represents a portion of a strip of paper from which the tube to form the bag is made. Figs. 2, 3, 4, and 5 represent different stages of the manufacture of the paper bag, to be herein described.

The tube having been produced in any usual way, its leading end is manipulated to form the diamond fold, as in Fig. 2, any suitable devices being used for that purpose—such, for instance, as are shown in the Knight patent, No. 116,842, July 11, 1871, or as in my Patent No. 231,642, dated August 31, 1880. Paste having been applied to the diamond fold, in the usual manner, along the lines  $b$  and  $n^2$ , the leading corner of the diamond fold is then cross-folded on the line  $a^x a^x$ , Fig. 2, the corner  $a$ , Fig. 3, being turned over upon the diamond fold by means of a suitable folding-blade and rolls co-operating therewith, such as shown in my patent referred to, or by other known devices. After this the bag is completed by making a second cross-fold at the rear end of the diamond fold, and parallel with the first cross-fold, by means of similar devices to those used in making the first cross-fold, which act upon the bag-blank on the line  $b^x$ , Fig. 3, and, while making the second cross-

fold, also fold transversely the main body of the blank on the line of the second cross-fold, as in Fig. 4. The fold so formed in the main body of the tube or bag in the act of making the second cross-fold is called the "blind fold." The bag left in the condition Fig. 4 is a finished satchel-bottom paper bag, and the blind fold left in the body of the bag in the operation of making the second cross-fold disappears when the bag is filled in use, or may be easily smoothed out by suitable devices—such, for instance, as are shown in my said patent.

My patent referred to represents a machine capable of producing the bag herein described; but in that patent I did not lay claim to the art or method of making the bag.

By my method herein described it is possible to make with great rapidity and certainty, and by simple devices, the cross-folds of the bottom of a satchel-bottom paper bag while the diamond-folded bag-blank is being carried forward through the machine at a uniform rate of speed, and all necessity for stopping the bag or changing its speed of movement or reversing the diamond fold is obviated.

I claim—

The herein-described improvement in the art or method of manufacturing satchel-bottom paper bags from a tube, which consists in first forming the diamond fold, then cross-folding the leading corner of the diamond fold, and subsequently completing the satchel-bottom by cross-folding the rearmost corner of the diamond fold, and together with it the main body of the bag-blank, on the line of this second cross-fold, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DANIEL APPEL.

Witnesses:

O. E. STOCKWELL,  
H. F. KINGSLEY.