

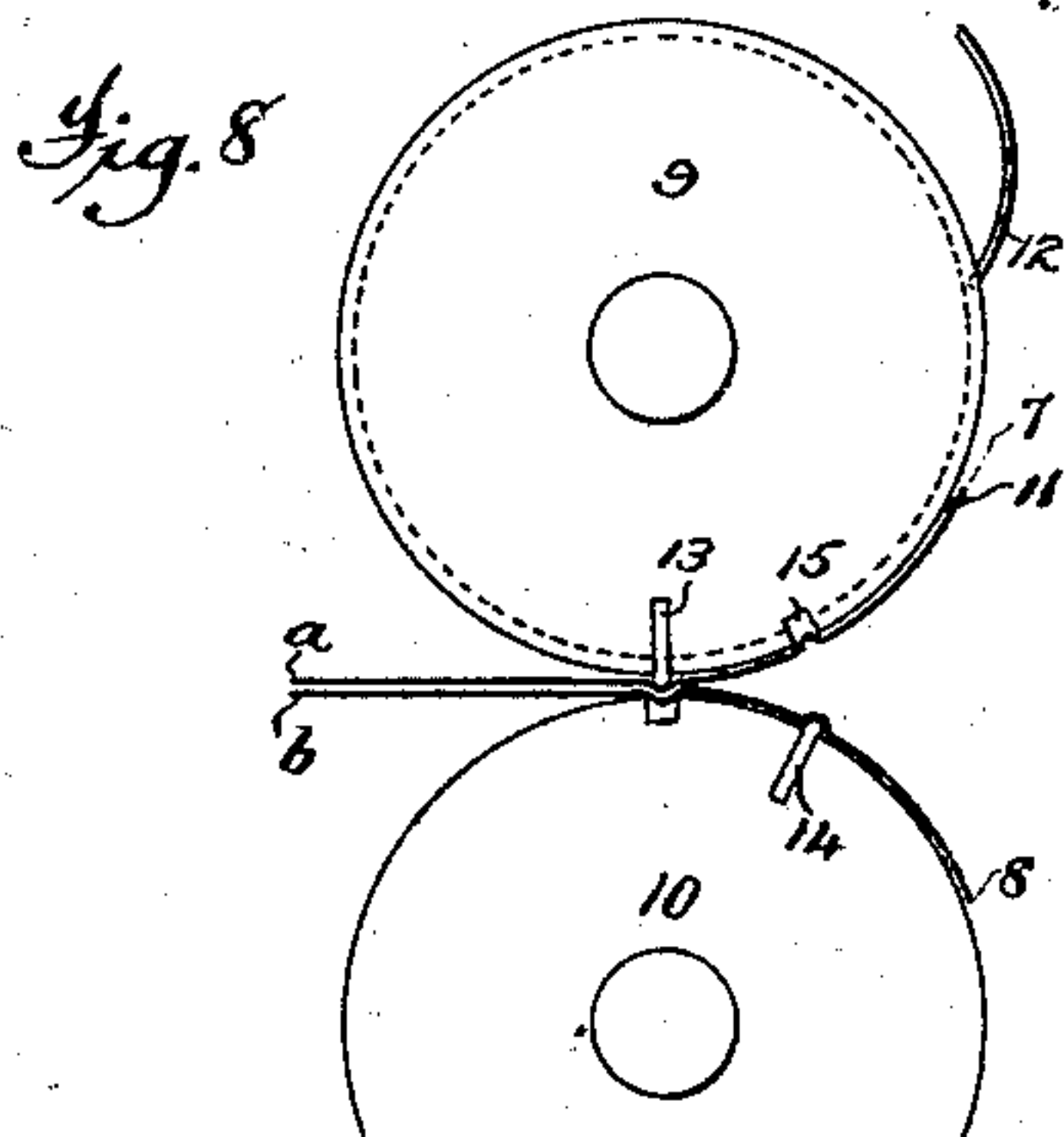
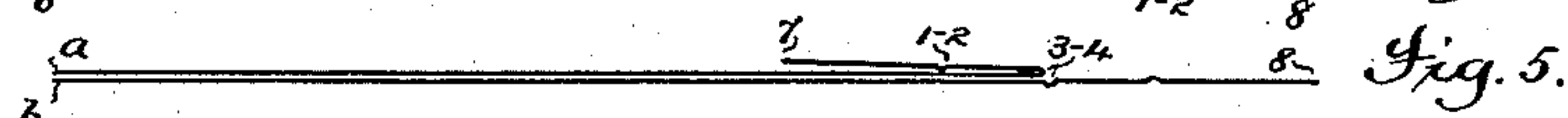
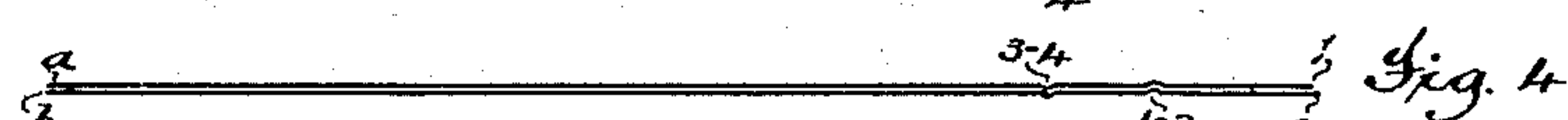
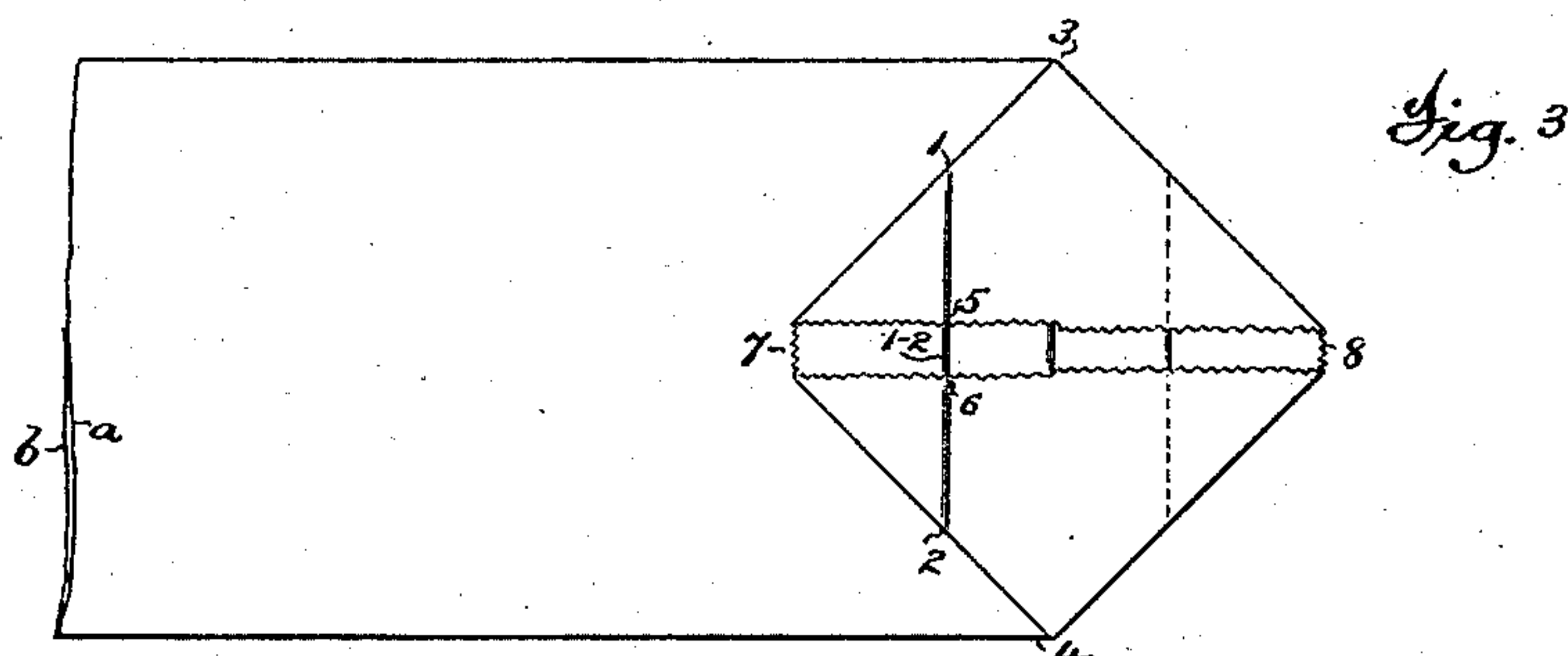
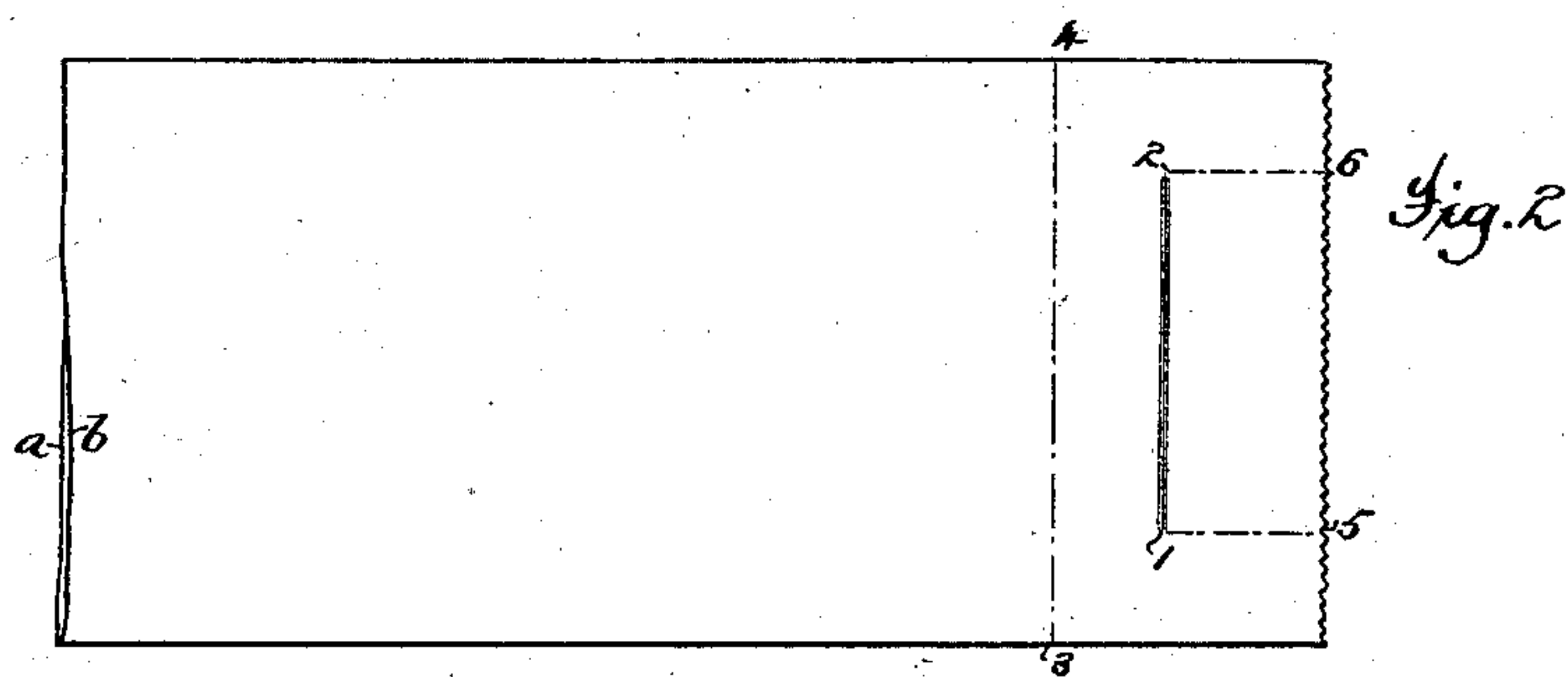
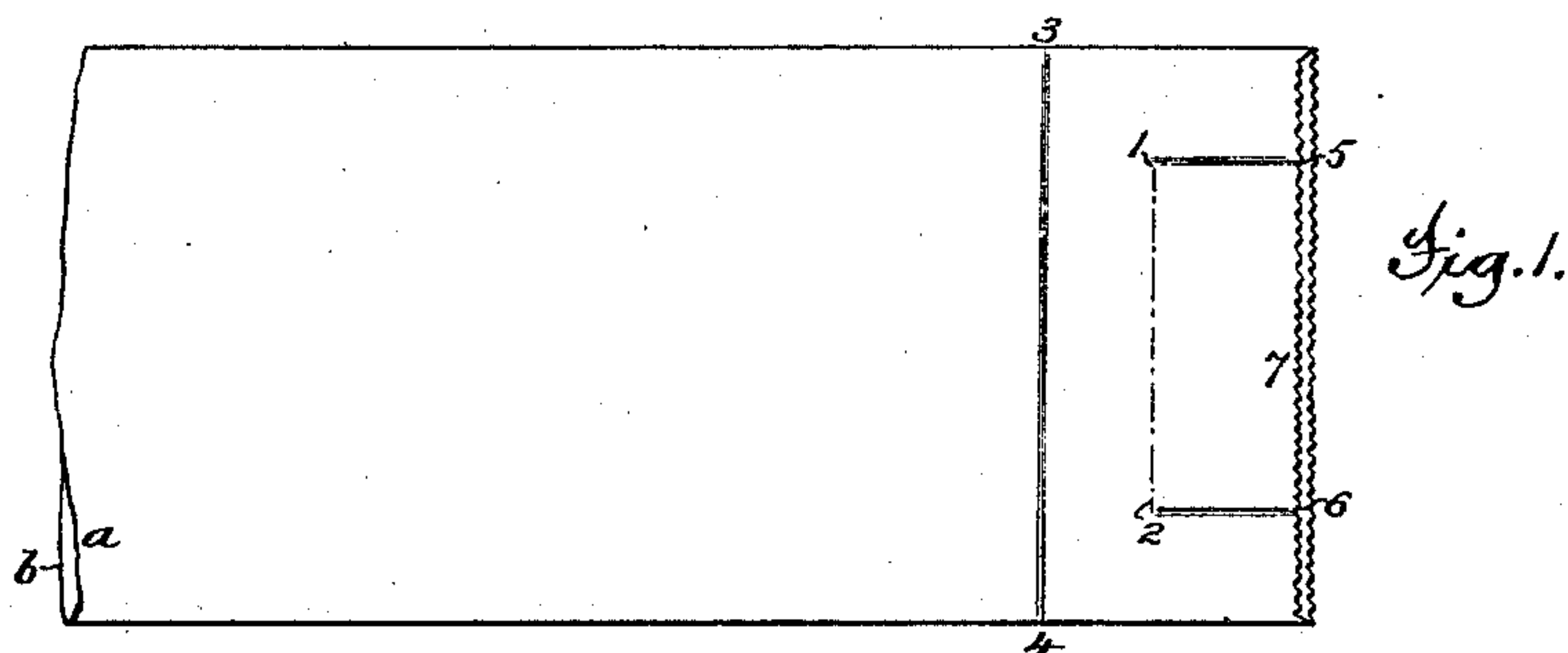
(No Model.)

J. McCULLOUGH.

METHOD OF AND MACHINERY FOR MAKING SATCHEL BOTTOM PAPER BAGS.

No. 264,180.

Patented Sept. 12, 1882.



Attest;  
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Att'ys.

# UNITED STATES PATENT OFFICE.

JOSEPH McCULLOUGH, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO  
THE UNION PAPER BAG MACHINE COMPANY, OF SAME PLACE.

METHOD OF AND MACHINERY FOR MAKING SACHEL-BOTTOM PAPER BAGS.

SPECIFICATION forming part of Letters Patent No. 264,180, dated September 12, 1882.

Application filed May 17, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH McCULLOUGH, a citizen of the United States, residing in the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Method of Making Satchel-Bottom Paper Bags, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The present invention relates to the manufacture of that class of paper bags known as "satchel-bottom," and to that particular part of said class which are made by those methods involving the step known as the formation of the "diamond fold."

In the manufacture of satchel-bottom bags by some of these methods it is highly advantageous, if not absolutely necessary, to crease the points of the diamond upon the lines of final fold preparatory to folding over said points to close and complete the bottom of the bag. This has usually been done, as shown in United States Patents Nos. 165,381 and 255,204, and many others, after the formation of the diamond fold and as the blank advanced through the machine, by causing creasing blades or edges to bear upon the fold-lines and bend or break the paper, so as to cause the points of the diamond to stand up and yield readily when acted upon by the folding devices. This method of creasing the points of the diamond upon the lines of final folding is objectionable for several reasons, the principal one being that in creasing the rear point of the diamond a crease is necessarily made in the body of the bag at the same time, which crease is not only entirely useless, but injures the appearance of the finished bag and to some extent weakens the paper, so as to make the bag liable to burst at that point.

It is the object of the present invention to avoid this difficulty, and at the same time simplify the devices by which the creasing of the points of the diamond is effected.

To that end the invention consists in a method of creasing the blank, as will be hereinafter fully explained and pointed out.

In said drawings, Figure 1 is a plan view of the bottom-forming end of a blank creased ac-

cording to the present method. Fig. 2 is a like view of the same from the opposite side. Fig. 3 is a like view of the same after it has been opened to the diamond form. Figs. 4 and 5 are longitudinal sections of the blank as shown in Figs. 1 and 3, respectively. Fig. 6 is a like view, showing the rear point of the diamond folded forward. Fig. 7 is a like view of the completed bag; and Fig. 8, an end elevation of a pair of diamond-fold opening rolls of the kind shown in United States Patent No. 255,204, provided with devices for creasing the blank according to the present method.

In carrying the present method into practice the bottom-forming end of a tubular blank is creased from the side *b* upon the line 1 2, and from the side *a* upon the lines 3 4, 1 5, and 2 6. The diamond fold is then formed in the end of the blank in any of the well-known ways by turning the part 7 back and laying it flat upon the side *a* of the body of the blank. In doing this it will readily be seen that the creased lines 1 5 and 2 6 are brought directly over creased line 1 2, so that the line of final fold upon the rear point, 7, of the diamond is so creased as to enable the devices for turning it forward to act readily upon it without blemishing or in any way affecting the body of the bag, as clearly shown in Figs. 3 and 5.

The crease upon the line 3 4 may be omitted, as it is well known that this crease is not absolutely essential in forming the diamond fold.

The creases 1 5 and 2 6 may also in some cases be omitted, as it is found in practice that with many kinds of paper the single crease 1 2 is all that is necessary.

The crease 1 2 may extend entirely across the blank; but it is preferable to have it only of the length shown.

After the diamond fold is formed the point 7 may be laid forward, as in Fig. 6, by any of the well-known instrumentalities for that purpose, those shown in United States Patent No. 255,204 being, it is believed, among the best for the purpose. The front point, 8, of the diamond may then be recreated and folded back to complete the bag in the manner shown in the patent referred to, or by any of the other well-known devices for that purpose.

In Fig. 8 there is shown a diamond-fold-form-



ing apparatus of the character shown in Patent No. 255,204, before referred to, said apparatus being provided with devices for creasing the blank according to the present method.

5 This apparatus consists of the opening-rolls 9 10, provided with pins 11, stripper 12, and creasing-blade 13, all as shown in said patent, and operating as therein set forth to form the diamond fold. In addition to these devices, the  
10 roll 10 is in the present case provided with a creasing-blade, 14, which coacts with a groove, 15, in roll 9, so as to form the crease 1 2 at the proper distance in advance of the crease 3 4 and from the opposite side of the blank.

15 The roll 9 may, when desired, be provided with short creasing-blades situated in the proper position to make the longitudinal creases 1 5 and 2 6.

What I claim is—

20 1. The method of creasing the cross-fold line of that point of the diamond which lies next to

the body-forming portion of the blank, which consists in making a transverse crease, as 1 2, in the blank from its opposite side before the diamond fold is formed, substantially as described. 25

2. The method of creasing the cross-fold line of that point of the diamond which lies next to the body-forming portion of the blank, which consists in making a crease, as 1 2, from one  
30 side of the blank and intersecting creases, as 1 5 and 2 6, from the opposite side before the diamond fold is formed, substantially as described.

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

JOSEPH McCULLOUGH.

Witnesses:

CHAS. E. HOWLETT,

FRANK LEACH.