

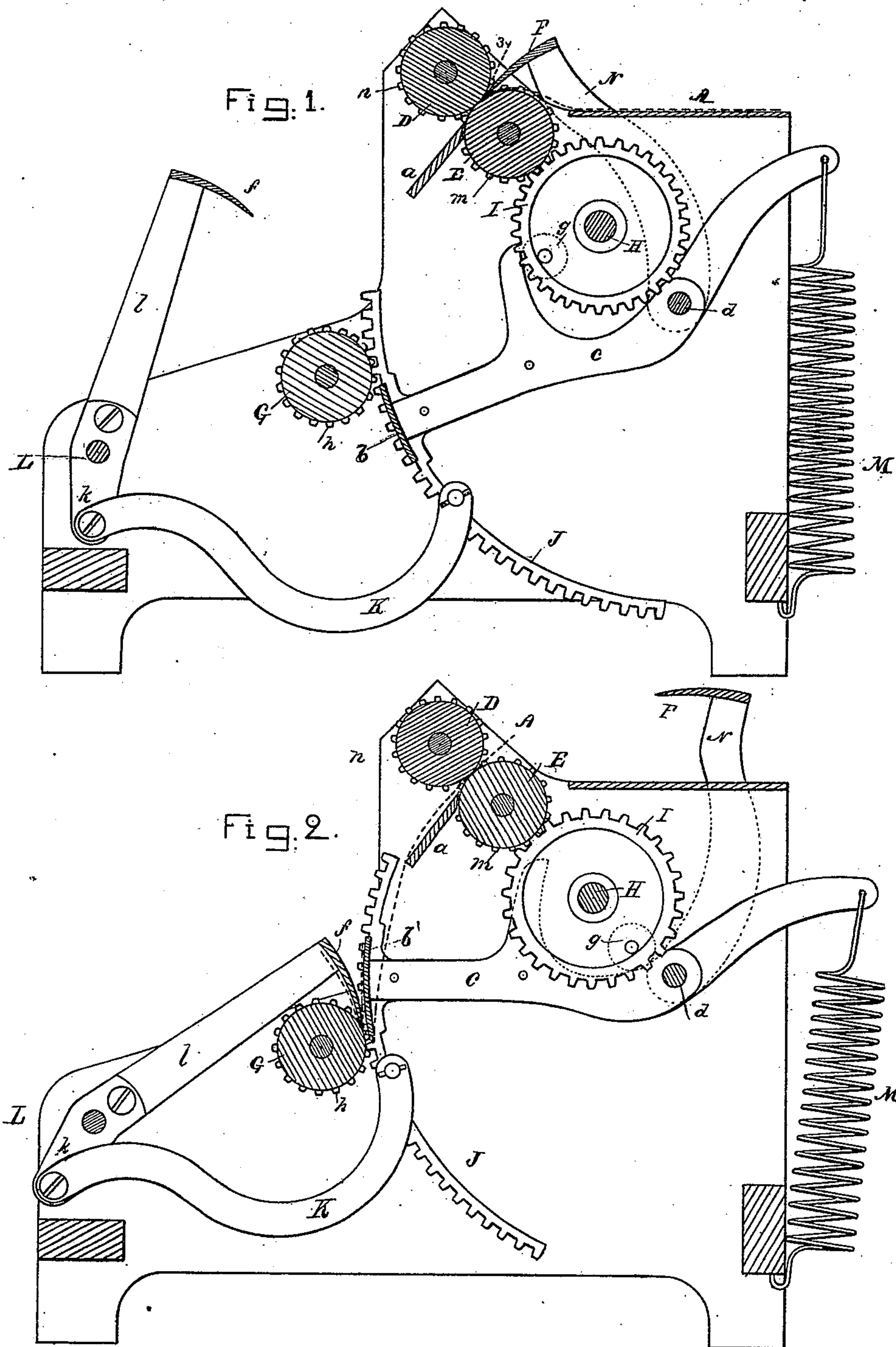
(No Model.)

2 Sheets—Sheet 1.

C. A. CHANDLER.  
Paper-Bag Machine.

No. 228,312.

Patented June 1, 1880.



Witnesses.

L. F. Connor

V. D. Pearson.

Inventor

Clarence A. Chandler.

by Crosby Gregory Atty.

(No Model.)

2 Sheets—Sheet 2.

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Paper-Bag Machine.

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Fig: 3.

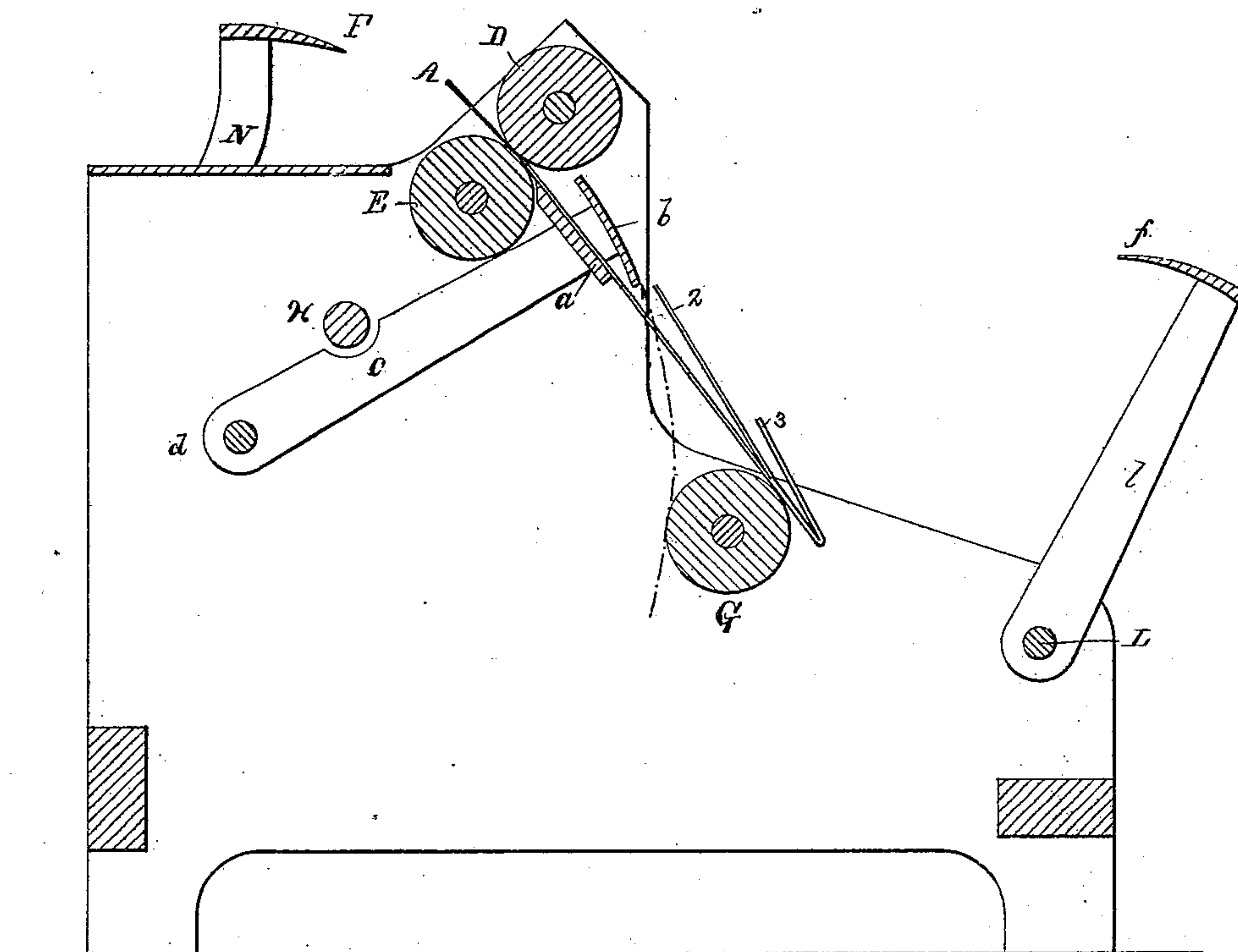


Fig: 4.

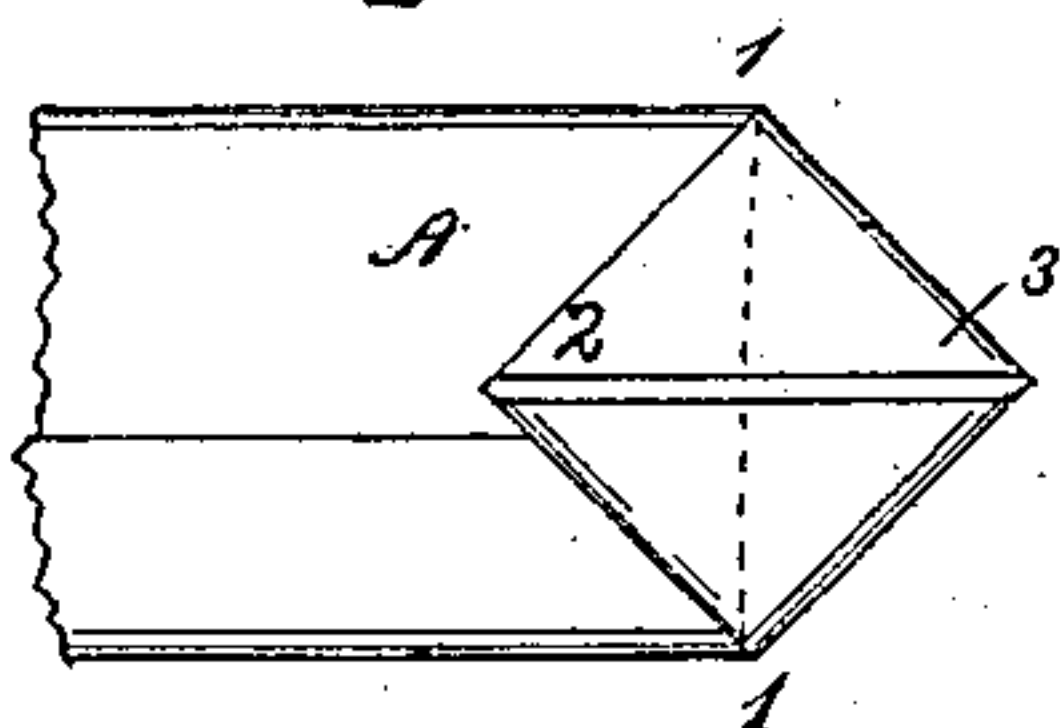


Fig: 5.

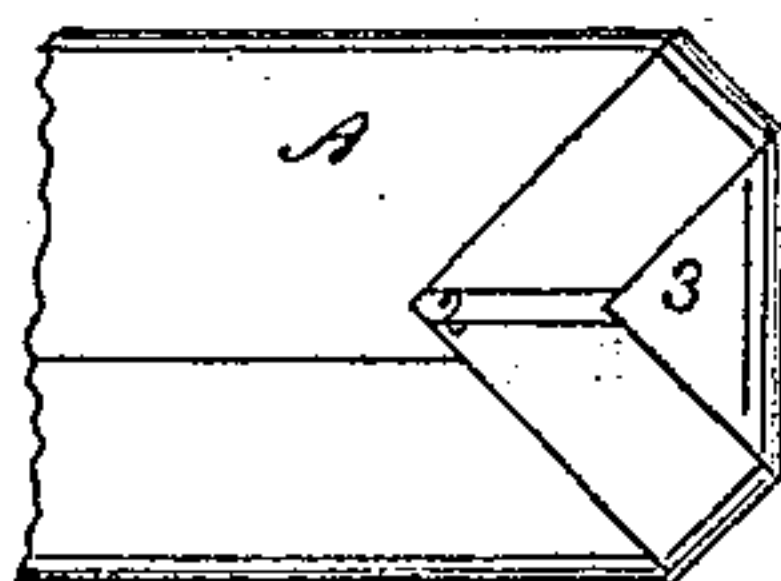


Fig: 6.

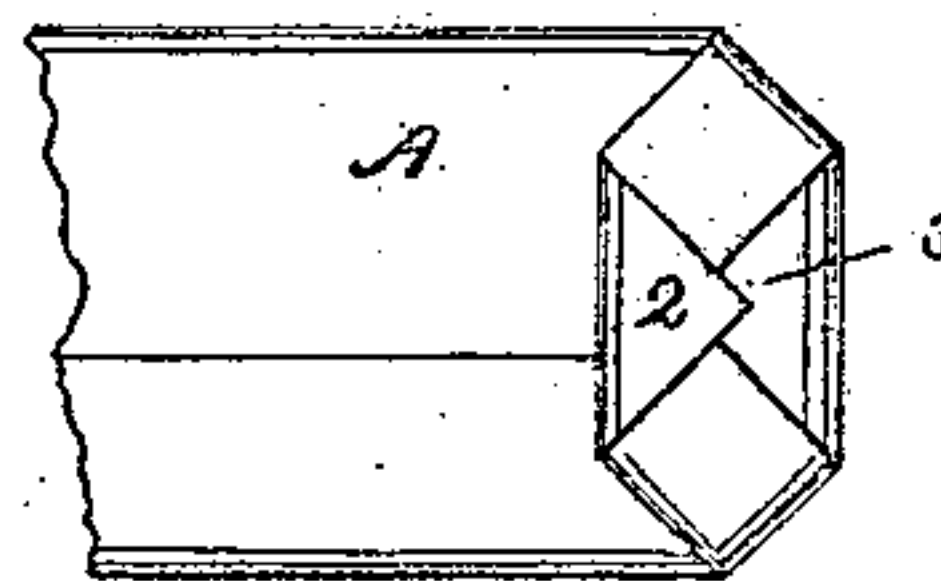
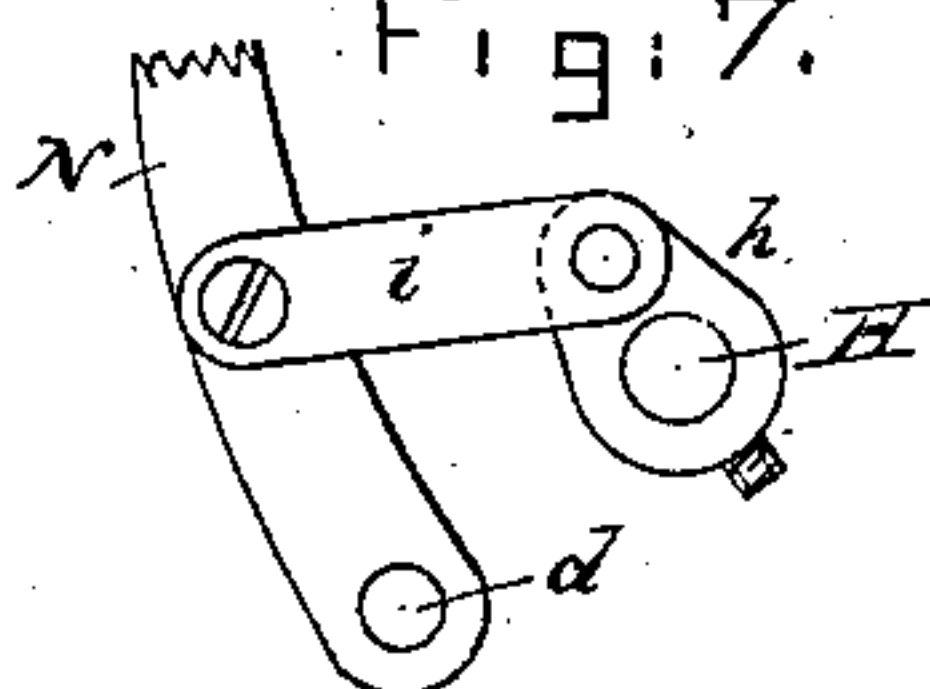


Fig: 7.



Witnesses:

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Inventor.

Clarence A. Chandler,

by Crosby & Gregory, Atty.



# UNITED STATES PATENT OFFICE.

CLARENCE A. CHANDLER, OF EAST BRIDGEWATER, MASS., ASSIGNOR TO  
THE EASTERN PAPER BAG COMPANY, OF HARTFORD, CONN.

## PAPER-BAG MACHINE.

SPECIFICATION forming part of Letters Patent No. 228,312, dated June 1, 1880.

Application filed March 26, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, CLARENCE A. CHANDLER, of East Bridgewater, Plymouth county, State of Massachusetts, have invented an Improvement in Machinery for the Manufacture of Paper Bags, of which the following description, in connection with the accompanying drawings, is a specification.

This invention in paper-bag machines relates especially to mechanism for forming the two cross or final folds needed to complete a satchel-bottomed bag.

This machine will follow any usual machine having devices capable of forming at the end of a tube the well-known diamond fold—such, for instance, as described in United States Patents Nos. 116,842 and 220,925, to which reference may be had.

The diamond fold having been made, the tubular piece of paper to be formed into a bag is acted upon by the first cross-folding blade, which, striking it transversely to the length of the bag and across the leading corner of the diamond fold, forces the paper between the pair of feeding-rollers, which, as the paper passes between them, completes the said fold. The diamond fold having passed beyond the said feeding-rollers, a movable plate is interposed between the tube and the under side of the rear end of the diamond fold, and as the leading end of the diamond fold, cross-folded as just described, passes beyond a roller-support, the second cross folder or blade descends upon the paper, bearing upon it at the rear corner of the diamond fold, then partially supported by the movable plate, and is by the second folding-blade forced between the plate and roller-support, the second blade creasing and cross-folding the rear corner of the diamond fold, completing the bag without making other creases in the tube except those which act to give shape to the bag-bottom.

Figure 1 represents, in vertical longitudinal section, a sufficient portion of a paper-bag machine to illustrate my invention, the parts being in the position they will occupy just as the cross-fold at the leading end of the diamond fold is being started. Fig. 2 shows a like section, with the parts in the position they

will occupy when the second cross-fold is being started. Fig. 3 is a similar section, showing the once cross-folded tubular paper with the rest-plate carried back of the rear end of the diamond fold preparatory to being moved in between the said rear end and the body of the tube, so as to partially support the rear corner of the said diamond fold just before the second or final cross-fold is to be and is being made, the once cross-folded end of the diamond fold being shown as fed beyond the roller-support. Figs. 4, 5, and 6 represent the paper tube as it will appear during the formation of the bag-bottom; and Fig. 7 is a detail to be referred to.

The paper tube A, suitably folded and having the diamond fold made therein, as shown in diagram Fig. 4, has the leading corner of the diamond fold extended across the space between the feeding-rollers D E far enough to permit the first folding-blade, F, to strike the leading end of the diamond fold on the line 1 and enter the paper between the said rollers, the parts being as in Fig. 1. Just as the paper emerges from between the said feeding-rollers, and before the paper passes beyond the shelf *a*, the rest-plate *b*, herein shown as connected with the vibrating arm *c*, pivoted at *d*, is raised into the position shown in Fig. 3, and the tube, with its leading cross-fold finished, is moved sufficiently forward to pass over or beyond the center of the supporting-roller G until it arrives at substantially the position shown in the said figure. In this condition the rest-plate is quickly thrown downward or forward into the position shown in Fig. 2, it entering the space between the end of the tubular piece of paper and the rear corner, 2, of the diamond fold, when the second cross-folder, *f*, is immediately brought down upon the rear part, 2, of the diamond fold at the proper distance from the usual central crease or fold, the said second folder-blade, *f*, creasing and inserting the body of the tube and the rear corner of the diamond fold in between the rest-plate *b* and the roller or moving surface G, the passage of the tube or paper so folded between the said surfaces *b* and G completing the final cross-fold and finishing the bag-bot-



tom. The diamond fold, before or during the time it is being so cross-folded, may be pasted in any usual way.

5 The front edge of the rest-plate *b* may be more or less thick or rounded, so as to avoid making a transverse crease in the tube or bag between its open end and the central fold, (designated by line 1.)

10 I do not broadly claim a blade and pair of rollers to form the first cross-fold in a bag-bottom, nor do I broadly claim two blades and two sets of rollers to operate in succession and form the first and second cross or final folds.

15 Fig. 5 represents the tube as it will appear after passing between the rollers D E, and Fig. 6 after being operated upon by the second folder-blade, *f*.

20 I do not desire to limit my invention to the particular devices shown to operate the folder-blades.

As herein shown, I have employed a shaft, H, upon which is a toothed gear, I, provided with a roller-stud, *g*, (shown in dotted lines,) that strikes one of the arms *c*, which carries 25 the rest-plate, the said arms being held loosely upon the roller-shaft *d*. One of these arms *c* has attached to it a segmental rack, J, that engages a pinion, *h*, and oscillates the supporting-roll G. A link, K, joins the rack J 30 with the arm *k* of the rocker-shaft L, having arms *l*, which carry the second cross-folding blade, *f*. The arm *c* is kept up by the spring M when not thrown down by the roller *g*. Instead of this roller on the toothed gear I and 35 the said spring, I may employ a cam-disk having a groove of the proper shape to move

the rest-plate *b* and blade *f* positively in both directions.

The rotating shaft H, driven in any way, has at the end of it a crank and link, *h i*. 40 (See Fig. 7.) One end of this link *i* is connected with one of the arms N, which carry the first folding-blade, F, they being secured to the rocker-shaft *d*. The feed-rollers are operated by the gear I, it engaging one of the pair of 45 toothed gearing *m n* on the said rollers.

I claim—

1. The first folding-blade and feeding-rollers and vibrating rest-plate, adapted to be inter- 50 pressed between the rear corner of its diamond fold and tube, combined with the supporting-surface G and second folding-blade, to operate substantially as described.

2. The movable supporting-surface G, to support the leading end of the tube, provided with 55 the diamond fold and one cross-fold, and the vibratory rest-plate, combined with the folding-blade *f*, to crease the rear corner, 2, of the diamond fold and form the second cross or final fold, substantially as described. 60

3. The feeding-rollers and the shelf *a*, to hold up and direct the tube as it is fed from the rollers, combined with the rest-plate, the movable supporting-surface, and the second 65 cross or final folder, substantially as described.

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

CLARENCE A. CHANDLER.

Witnesses:

G. W. GREGORY,  
L. F. CONNOR.