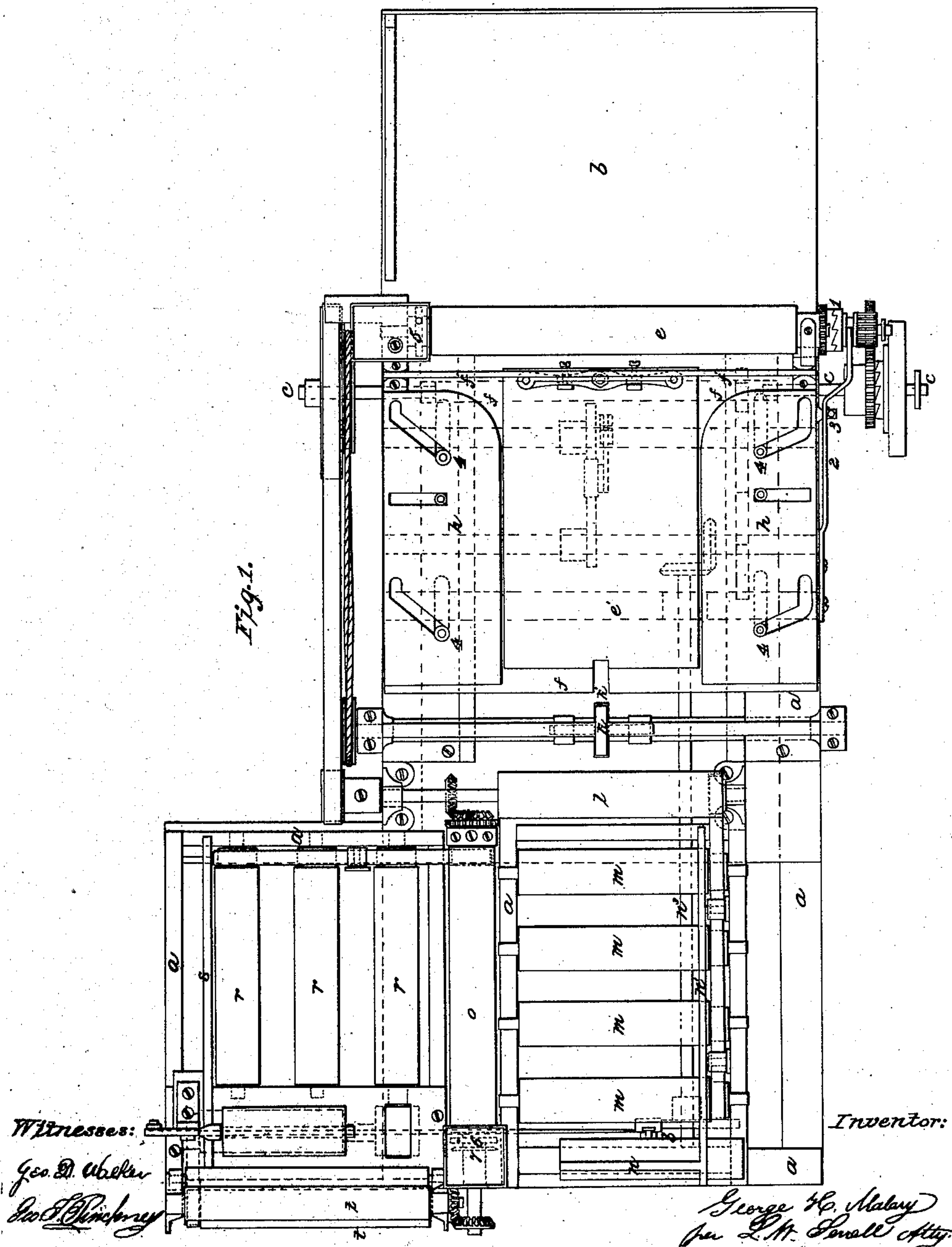


G. H. MALLARY.  
Paper Bag Machine.

No. 83,648.

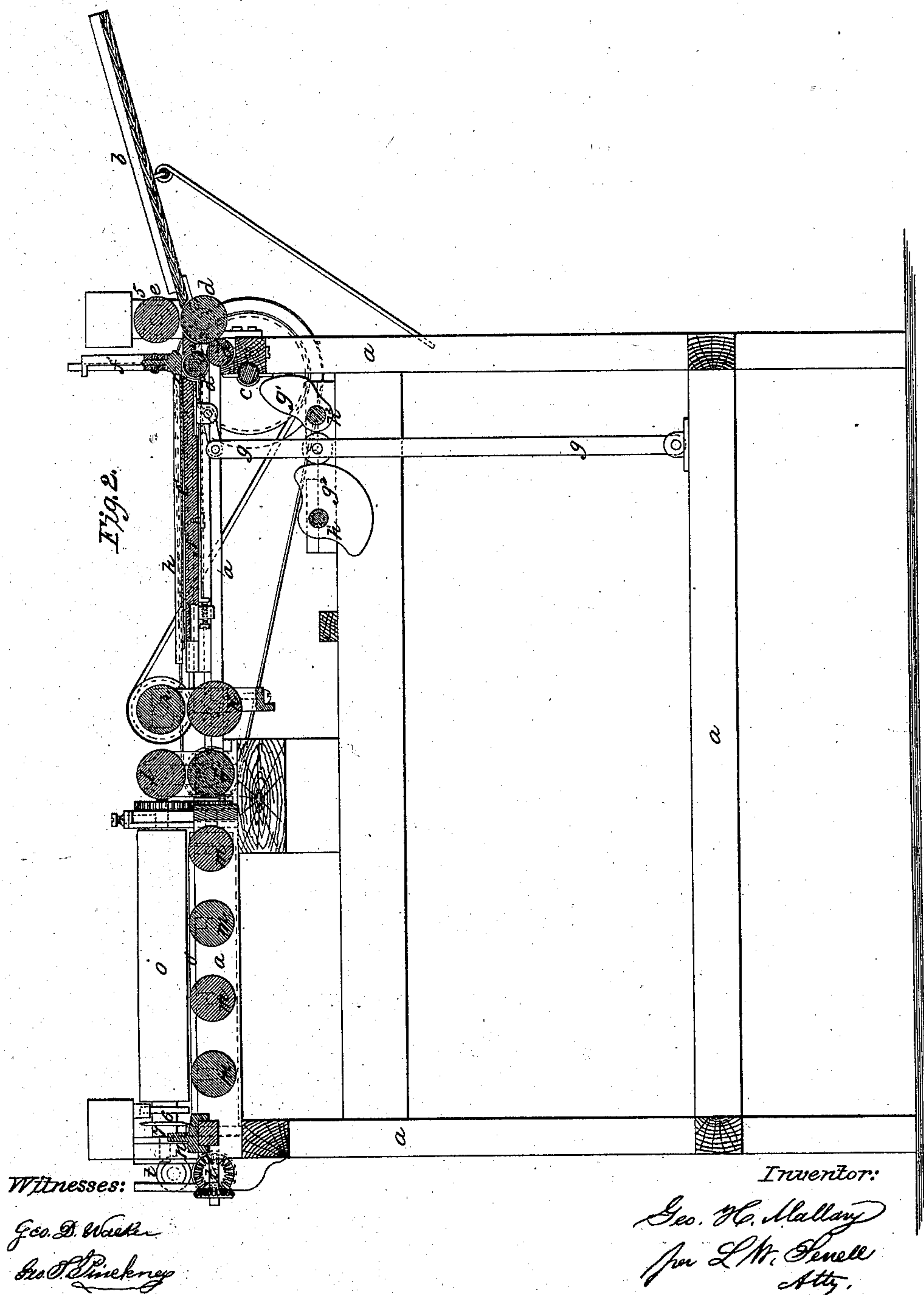
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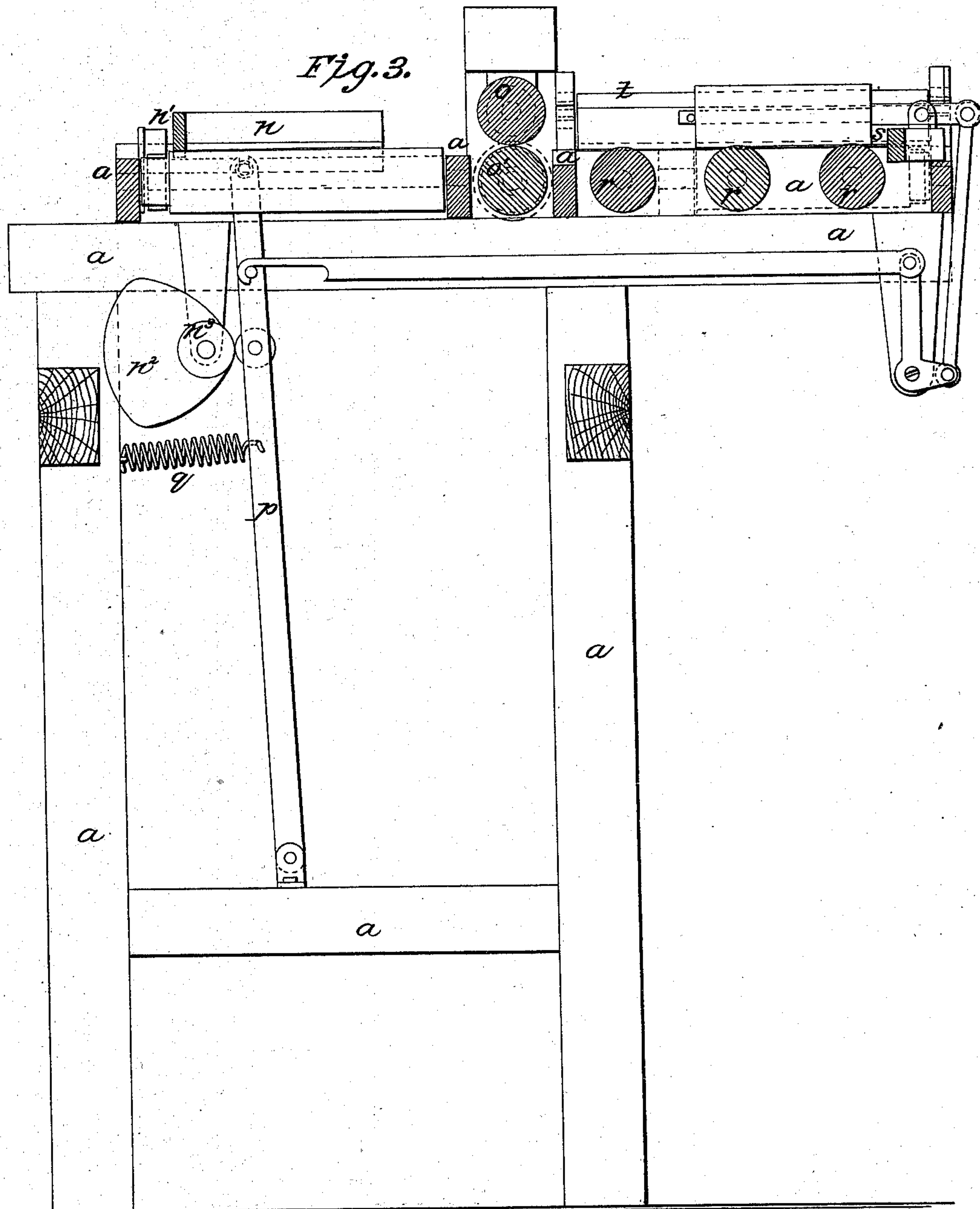
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Paper Bag Machine.

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Patented Nov. 3, 1868.



Witnesses:

Geo. D. Webster.

Geo. B. Pinney.

Inventor:

Geo. H. Mallary  
per L. H. Penell  
att'y



# UNITED STATES PATENT OFFICE.

G. H. MALLARY, OF POUGHKEEPSIE, NEW YORK, ASSIGNOR TO HIMSELF, ALEXANDER L. VAN BUREN, HERBERT REED, WILLIAM H. CLARK, AND JOHN A. STANDISH.

## IMPROVEMENT IN PAPER-BAG MACHINES.

Specification forming part of Letters Patent No. 83,648, dated November 3, 1868; antedated October 17, 1868.

*To all whom it may concern:*

Be it known that I, GEORGE H. MALLARY, of Poughkeepsie, in the county of Dutchess and State of New York, have invented and made a certain new and useful Improvement in Machinery for Making Paper Bags; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1 is a plan of the said machine complete. Fig. 2 is a vertical longitudinal section of the same, and Fig. 3 is a view of the rollers and pusher that move the bag laterally to the final finishing operation.

Similar marks of reference denote the same parts.

This invention is to make paper bags out of separate sheets of paper properly cut out. The machine pastes one edge of the sheet as it passes into the machine. Then one side of the sheet is folded over a former, and the other side of the sheet, with the paste near its edge, is folded over upon it. Then the partially-formed bag is drawn off by rollers and moved along into an inclosure, one side of which comes up and moves the bag off laterally between rollers, one of which applies paste across the bag near the bottom, and another forms a fold for the bottom lap of the bag, and then the bag passes out through between a pair of rollers that press the bottom fold of the bag down to place.

In the drawing, *a* represents the frame of the machine. *b* is the table upon which the sheets of paper to form the bags are laid and fed in successively by hand, but the sheets might be fed in automatically by suitable means. *c* is the main shaft, actuated by competent power and geared to the rollers *d e*. One of the gears in the train is formed with a clutch, 1, acted on by a spring, 2, and 3 is a pin on a sliding bed, *f*, that, running off an incline on said spring, allows the spring to disconnect the clutch and stop the rollers *d e* as soon as said bed *f* begins to move. The bed *f* is set to slide on the frame *a*, and receives motion from a lever, *g*, and cams *g*<sup>1</sup> and *g*<sup>2</sup> on

the shafts *h*<sup>1</sup> and *h*<sup>2</sup>, geared to the main shaft *c*, and the shape of these cams is such that the bed *f* is moved and arrested at the proper times. Upon the bed *f* is a head-frame, *f'*, carrying the bag-former plate *e'*. This is held by slide-rods, as shown, so that it may be free to adjust itself, and the attachment is from above, so that the sheet of paper may be passed in by the rollers *d e* below said former *e'*, and the rollers *d*<sup>1</sup> *d*<sup>2</sup>, driven by friction from the roller *d* or by gearing, aid in passing the sheet of paper fully along beneath the former *e'*. The roller *d*<sup>2</sup> acts by friction against the paper, to slide it along beneath the former *e'*, but rollers may be mounted upon the former *e'*, setting where there are to be openings provided for them in *e'*, so as to gripe the paper and pass it along more reliably. I provide folders *h h*, set to slide transversely of the bed *f*, but to move with said bed. These have diagonal slots in them. The bed *f* has longitudinal slots, and through these the pins or rollers 4 4 come up from the frame *a* below; hence the act of moving the bed *f*, (as before stated,) also gives a motion in the opposite direction to the folders *h h*. I so form these slots, as shown, that one folder acts before the other, so that one side of the paper is turned over the former *e'*, and then the other. I apply paste at the proper place to the edge of the paper as it runs into the machine, and for this purpose I use a roller, at 5, that passes up into a slot in the under side of a paste-receptacle. A small adjustable gate may be used to regulate the amount passing out upon the said roller. As the bed *f* and partially-formed bag go forward, the rollers *d* and *e* stop, as before mentioned, until the bed comes back again to its place. Thus the timing of the feed is regulated, the pin 3 on the bed *f*, taking the incline on the spring 2, throwing the clutch together to revolve the rollers *d e*. The bed *f* carries the partially-formed bag sufficiently forward for it to be taken by the rollers *k k'* and drawn off the former *e'* and passed onto the rollers *l l'*.

The gearing for driving these rollers will be understood by inspection, and I remark that the rollers *k k'* are to be adjustable in their position, so that they may be able to seize a short



bag and pass it along to the rollers *l l'* without the amount of movement of the bed *f* being increased. The rollers *l l'* pass the bag into an inclosure formed with a bottom of a series of rollers, *m m*, that are continually in motion, and carry the bag forward until it is stopped against the fence *n*. A pusher, *n<sup>1</sup>*, is fitted to travel crosswise of this inclosure by the action of a cam, *n<sup>2</sup>*, on a shaft, *n<sup>3</sup>*, geared to the shaft *h'*, said cam acting on a lever, *p*, and *q* is a spring, to give a reverse motion. (See Fig. 3.) The pusher *n<sup>1</sup>* carries the side of the bag in between a pair of rollers, *o o'*, one of which should be formed with ribs at about one inch apart, that are sufficient to give motion to the bag, but do not squeeze out the paste at the lap. Upon the axis of the roller *o* is a pasting-roller, 6, supplied by a paste-receptacle similar to that before named, and this applies paste to the bag across the bottom where the paper is to be folded over, and on the same axis is a folding disk, 7, acting against a shoulder on the roller *o'*, to turn up the projecting piece of paper at the bottom of the bag. The bag is carried laterally upon a bed of revolving rollers, *r*, to the fence *s*, and then moved at right angles, so as to pass, bottom first, out between the rollers *t t*, which complete the folding over of the bottom of the bag upon the

side thereof, and one of these rollers may be grooved or formed with small ribs, so as to not press out the paste. To effect this movement of the bag from the bed of rollers *r*, a pusher like the pusher *n<sup>1</sup>* may be employed, or any other suitable mechanism.

The rollers *l l'* and *t t* should be made smaller at the part where the longitudinal pasted seam of the bag passes through, so as not to squeeze the paste or injure the damp paper.

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

1. The combination of the moving bed *f* and the rollers *d e* and folders *h h*, actuated substantially as set forth, so that the feeding of the sheet of paper and folding the same are effected at the right time, as set forth.

2. The rollers *k k'* and *l l'*, in combination with the moving bed *f* and the folders *h h*, for the purposes and as set forth.

3. The pasting and creasing mechanism applied on the axis of the roller *o*, as and for the purposes set forth.

Dated this 7th day of June, A. D. 1867.

G. H. MALLARY.

Witnesses:

CHAS. H. SMITH,  
GEO. D. WALKER.