

E. B. Olmstead.

Paper Bag Mach.

N^o 70601.

Patented Nov. 5. 1867.

Fig: 1.

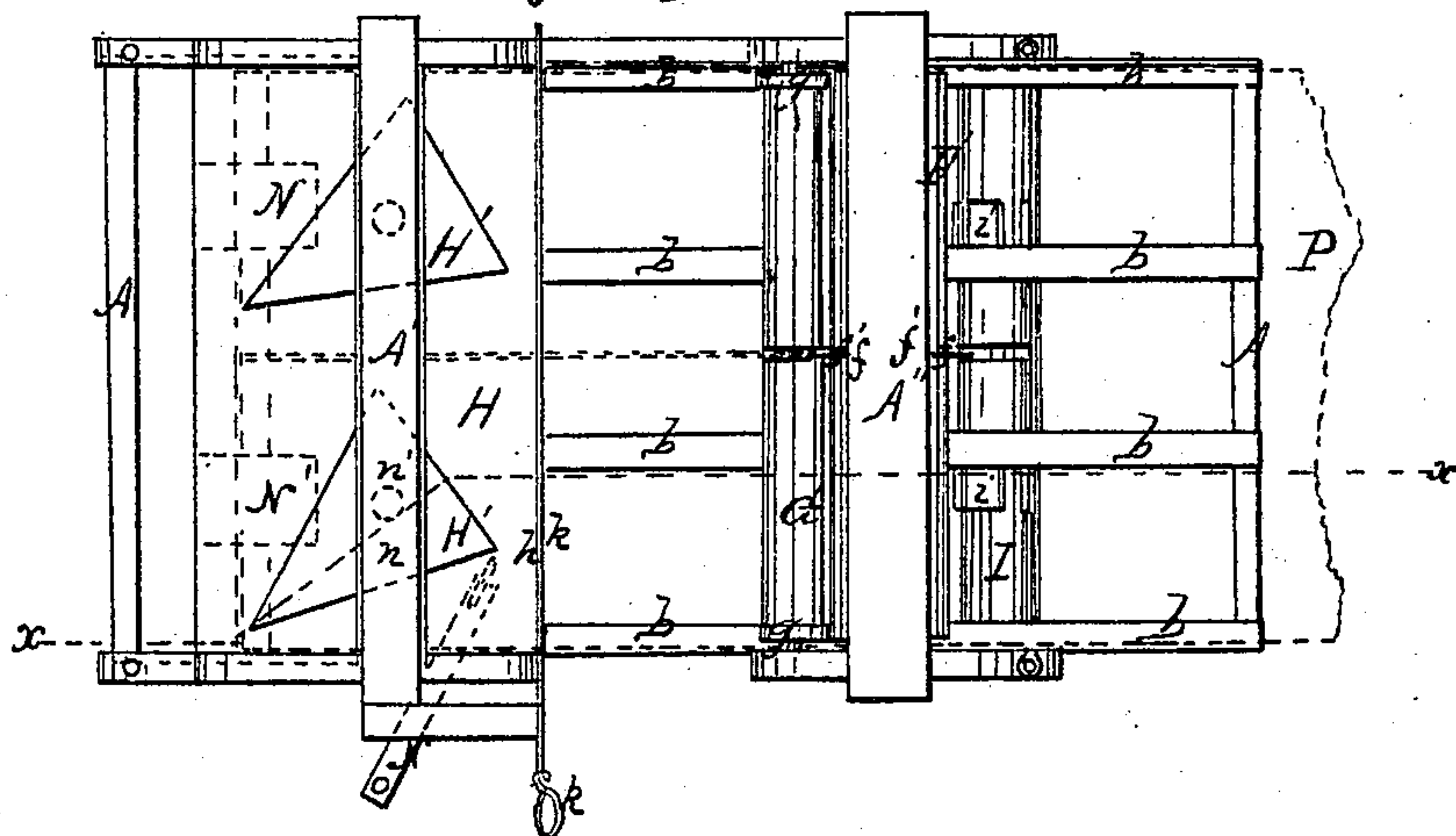
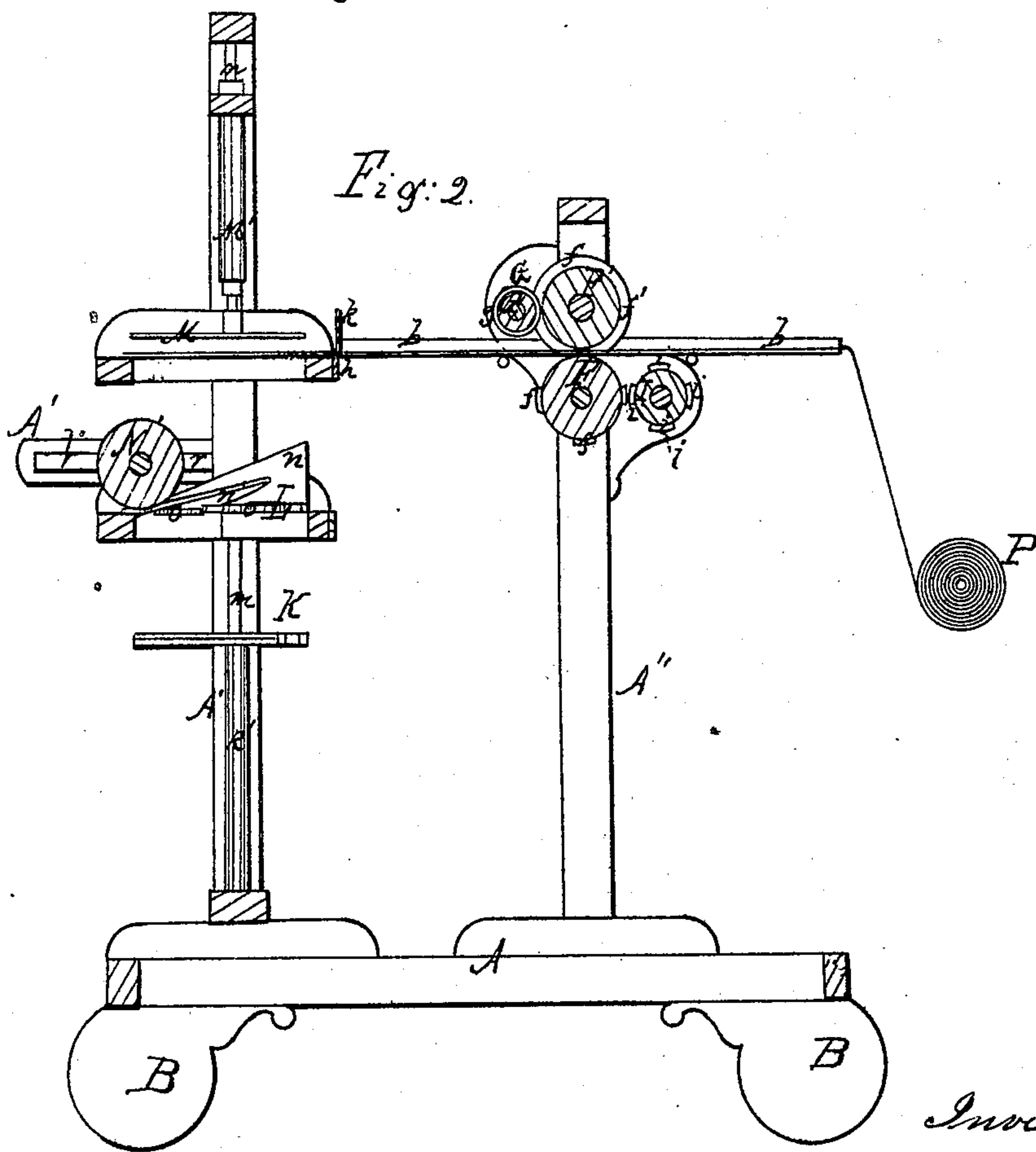


Fig: 2.



Witnesses

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UNITED STATES PATENT OFFICE.

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IMPROVED MACHINE FOR MAKING PAPER BAGS.

Specification forming part of Letters Patent No. 70,601, dated November 5, 1867.

To all whom it may concern:

Be it known that I, E. B. OLMSTED, of the city and county of Washington, and District of Columbia, have invented a new and Improved Machine for Making Paper Bags and Envelopes; and I do hereby declare the following to be a clear, exact, and full description of the same, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a top view of my invention, and Fig. 2 is a longitudinal vertical section of the same through the dotted line *xx* of Fig. 1.

In this invention the machine is fed from a roll of paper, which it cuts into suitable pieces for bags or envelopes of any desired size and shape, gums, folds, prints, or stamps, and, having united the edges firmly, delivers in perfect condition for immediate use.

In the drawings, *A A' A''* represent the frame of my machine, supported upon suitable pedestals *B B*. The paper *P*, represented in the drawings, is fed along horizontal smooth bars *b b*, between feed-rollers *F F'*, the lower one of which, *F*, is provided with the raised printing-forms *f f*, the upper one being provided with a central circular knife, *f'*, which divides the sheet of paper in the center into two longitudinal strips. Any number of knives, *f'*, may be used, cutting the paper into strips of any suitable width, and these knives may be made adjustable at different points along the roller *F*. If necessary, a groove may be cut in the lower roller, *F*, into which the edge of the revolving knife may sink, to insure the perfect separation of the paper. In connection with the lower roller, *F*, is an inking-roller, *I*, having raised beds *i i*, corresponding in number and situation to the printing-forms *f f*, and rotate, in connection with the roller *F*, by means of gearing not necessary to be shown. Any kind of gearing will answer the purpose, provided it be arranged so as to bring the inking-beds *i i* in contact with the printing-forms *f f*, as the rollers revolve. In connection with the upper feed-roller, *F'*, is a gumming-roller, *G*, rotated by any suitable gearing, and provided with raised annular gumming-beds *g g*, which receive the mucilage and impart it to the edges of the strips of paper cut out by the knife *f'*.

One gumming-bed is provided for each strip of paper. More may be used if the kind of bag or envelope to be made requires it.

The paper thus being suitably cut, printed, and gummed, is, by the motion of the feed-rollers, passed along the bars *b b*, and upon and across the horizontal platform or bed *H*, fixed a little above the center of the vertical forward part *A'* of the frame of my machine. The rear side of this platform is provided with a sharp cutting upper edge, *h*, of steel or other suitable metal. Operating in combination with this vertical cutting-edge is a knife, *k*, above it, which at the proper time descends upon the paper, cutting it off along the edge of the platform into suitable pieces for bags or envelopes. The knife *k* may be operated by hand or by any suitable mechanism.

The paper, thus cut longitudinally and transversely into the proper shape and dimensions, now rests upon the platform *H*, in which are suitable apertures *H' H'*, of the form and size of the future bag. In the drawings these apertures are represented as triangular in shape, which will be the form generally employed for bags designed to be used by grocers, hucksters, &c. The paper having assumed this position, and being now ready for folding, the lower folding-bed *K* rises till it reaches the under side of a second platform, *L*, directly under the platform *H*, of the same size, and having similar apertures directly under the apertures *H' H'*. Having reached this position the folding-bed *K* becomes stationary, waiting to receive the bag from the apparatus above. The instant it has reached this position the upper folding-bed *M* descends upon the paper, forcing it through the apertures *H' H'*, and into the corresponding apertures in the platform *L*, where it deposits it upon the lower folding-bed, and withdraws. The two folding-beds *K'* and *M'*, which move up and down are guided by grooves *m m* in the vertical posts *A' A'*. The top plate of the lower folding-bed is double, the two component plates or leaves being jointed or hinged together on one side, so that the upper leaf can be raised on one side, by hand or machinery, for the purpose of delivering the bag from the bed.

We have followed the paper until the upper

bed, M, has placed it upon the lower bed, K, and withdrawn. In this position the central part of the pieces of paper of which the bag is to be made will rest on the bed K, in the apertures of the platform L, and their wings or side portions, bent up into the proper shape by being forced down through the apertures H' H', will project upward out of the bed in which the main portion of the bag or envelope reposes. In order to finish the bag or envelope, it is only necessary now to catch two of these three leaves, and force them down, one after the other, upon the main portion of the bag. This is done by leaves *n n'*, hinged to the platform L, at the edges of its apertures, and worked by any suitable machinery. In the drawings, one leaf, *n*, is forced down by a lever, N, and the other, *n'*, by a roller, N', which is forced upon the leaf and rolls over it, and at the same time over the leaf *n*, which has been previously forced down by the lever N. As the last leaf, *n'*, shuts down, it brings the gummed edges of the paper in a proper position for uniting, and the roller N' presses them firmly together, making their adhesion perfect. The roller N' now returns to its former position, the force is removed from the lever N, the leaves *n n'* resume their erect position by the force of springs *o o*, connected with their hinges, and the bag or envelope is finished. The lower folding-bed K descends, its upper leaf is tilted, and the bag or envelope, having its proprietor's business-card, address, or any other suitable device imprinted upon it, is thrown from the bed, and falls into a receiver, from which it is taken for packing or use.

The roller N' may run in a frame guided by horizontal grooves *r r* in a portion of the frame A. It may be operated by hand or by any mechanism that will answer the purpose.

I do not intend to limit myself to any particular mechanism for operating the various devices which perform the different offices above described. All those devices, as I have described them, can be worked by hand, and any mechanic can easily connect their motions by a variety of methods and mechanical arrangements so as to have every operation performed by power applied from one shaft.

The power will properly be applied to the feeding, inking, printing, cutting, or gumming rollers by the feed-roller F, and can be adjusted by means of toothed wheels to feed the paper at any speed required. The motions of these rollers can be adjusted to each other as may be desired by cog-wheels of different sizes.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the feed or printing roller F with the inking-roller I, the cutting-roller F', and the gumming-roller G, substantially as and for the purpose described.
2. The combination of the cutting-edge *h* and knife *k*, when used in an apparatus for making paper bags or envelopes, and when the parts are constructed, combined, and operating in the manner and for the purpose herein specified.
3. The combination of the two folding devices M and K, substantially as and for the purpose shown.
4. The combination of the roller N' and leaves *n n'*, when constructed and operating in the manner and for the purpose set forth.

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Witnesses:

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