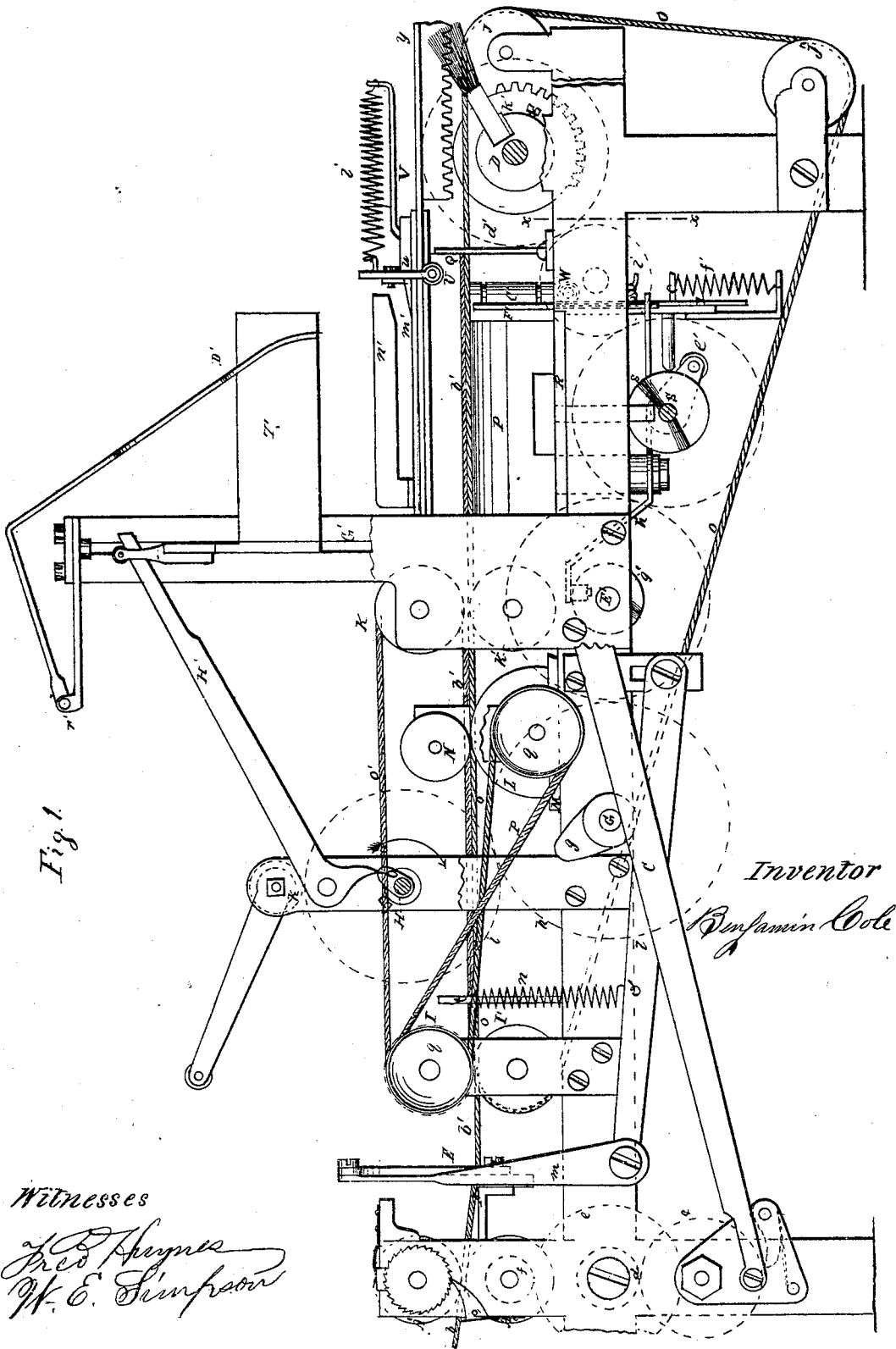


B. COLE.
Machines for Making Paper Bags.

No. 134,035.

Patented Dec. 17, 1872.



UNITED STATES PATENT OFFICE.

BENJAMIN COLE, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN MACHINES FOR MAKING PAPER BAGS.

Specification forming part of Letters Patent No. **134,035**, dated December 17, 1872.

To all whom it may concern:

Be it known that I, BENJAMIN COLE, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Machines for Making Paper Bags; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, and in which—

Figure 1 represents a partly-broken side elevation of my improved machine; Fig. 2, a sectional end view at the line *xx*; Fig. 3, a plan of the bag-forming portion of the machine; Fig. 4, an end view or diagram, showing the paper and operating parts in position at the commencement of folding or shaping the bag; Figs. 5, 6, 7, and 8 are diagrams, in illustration of the several successive operations during the folding, shaping, and pasting of the bag; and Fig. 9 is a view, in perspective, of a finished bag.

My invention has for its object the making of paper bags which are square or nearly square in their transverse action, and in which the longitudinal edges are lapped and pasted the one over the other, and the bottom formed by doubling or folding the one end of the body of the bag in opposite directions and at right angles—or, in other words, from each side of the body—and pasting down the portions thus folded. The invention consists in certain means and combinations of devices, whereby a bag of this description may be made automatically and with accuracy and dispatch.

Referring to the accompanying drawing, the paper *b*, Fig. 1, to be worked up into bags is fed to the machine in a continuous sheet or strip, of a width corresponding with the united widths of the sides of the bag to be made and lap of its longitudinal edges, one under or over the other, added thereto. Said paper may be arranged on a drum or reel at the one end of the machine, and be lapped therefrom between feed-rollers *A A'*, the one, *A*, of which receives a positive motion by gearing *c*, *d*, *e*, and *f*, while the other roller, *A'*, may be a free one, borne against the paper by spring-pressure, and restrained from slipping or moving back by a pawl and ratchet applied to its one end. This positive motion of the lower feeding-roller *A* is an intermittent rotary one, of sufficient

length, each successive action, to project the paper forward a distance equal to the required distance of the length or depth of a bag, and of the necessary length of extra paper to form the bottom laps or folds of the bag. Such positive intermittent feed is or may be produced by a pawl-and-ratchet motion, driven by a crank, *B*, and slotted connecting-rod *C*, from a revolving shaft, *D*, at the opposite end of the machine. The paper *b* thus fed passes under a guide immediately in front of a vertically-reciprocating cutter or knife, *E*, arranged transversely of the machine in front of a cutting-table, *F*, said cutter either working straight up and down or from a pivot at its back end. The latter arrangement is shown in the drawing; and the knife *E* is operated at intervals, as required, by a cam, *g*, on a revolving cross-shaft, *G*, deriving its motion, by gearing *h* and *i*, from a shaft, *H*, which in its turn is driven by a pinion, *K*, set in motion by any suitable prime mover, said cam *G* operating upon a lever, *l*, connected to the knife at its free end by a rod, *m*, to give to the knife its descent or cutting action, while a spring, *n*, afterward operates to return it to its raised position for the paper to pass forward beneath it a sufficient distance to form a bag, when the knife, which, when down, acts as a gage to the paper each successive feed, descends and cuts off a piece, *b'*, Fig. 1, of paper of the required length. The feed of the paper from which the piece *b'* is cut projects it, prior to being cut, between rollers *I I'* onto carrier, which may be composed of a number of parallel and longitudinally arranged tapes or cords, *o o*, made to pass over or round the roller *I'* and other distant or forwardly-disposed rollers *J J'*, the roller *I'* receiving a positive intermittent rotary motion, as required, by means of pawl-and-ratchet gear or otherwise, and the roller *I* a like positive motion by gear with the roller *I'*, to give the necessary travel to the carrier or cords *o o* and to pass the paper forward in between said rollers *I I'*. These rollers are belted to give motion to a second pair of forward rollers, *K K'*, through which the cut piece *b'* of paper passes by the travel of the cords or carrier *o o*, upon which it rests, to the bag-forming devices.

In this way pieces of paper, each of which is of the required size to make a bag, are fed, one by one in timely succession, up to the fold-

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Fig. 4.

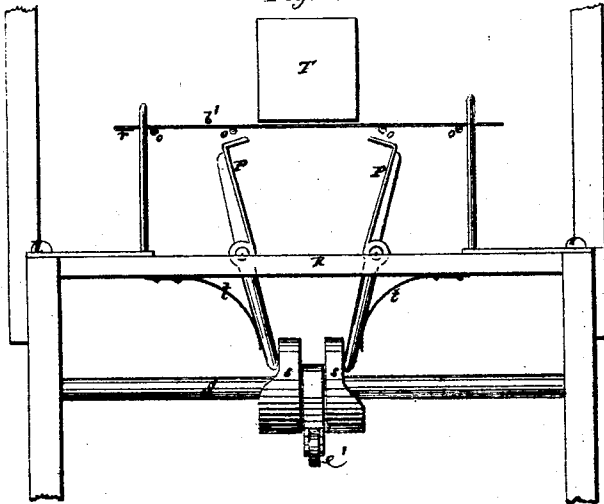


Fig. 5.

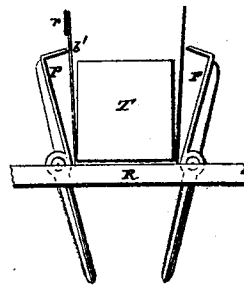


Fig. 6.

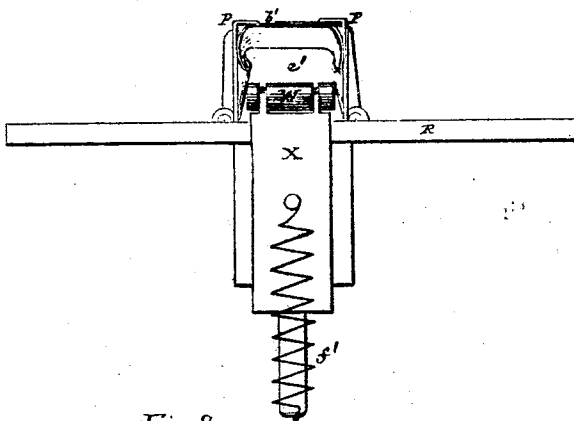


Fig. 7.

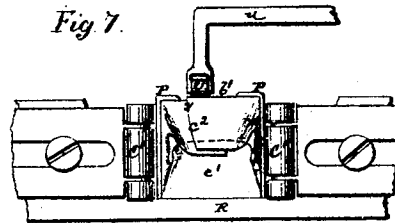


Fig. 8.

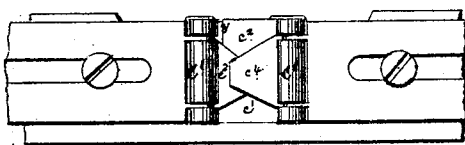
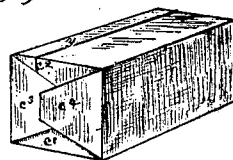


Fig. 9.



Witnesses:

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by a revolving toothed sector, *k'*, on the brush-shaft D, gearing with the sliding rack, V, a spring, *l'*, returning said roller, which is raised as it leaves the former T by the lever *u* riding over a fixed incline, *m'*, and is brought down on the said former or paper thereon as it approaches the latter by the lever *u* passing under another fixed guide, *n'*. The former T is carried by a vertical slide, G', and is dropped and raised at its proper intervals by a lever, H', operated by a toe or cam, *o'*, fast to the revolving shaft H.

The bag-stripper D' is of a forked construction, and made to straddle the former T. It is pivoted at *r* and thrown outward to strip the bag from the former T by the latter as it rises, and falls back to its place again in the rear of the former when the latter descends again.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The folders P P, in combination with the former T and longitudinally-seaming roller U, substantially as specified.

2. The combination of the folding-roller W with the folders P P, the former T, and the brush Y, essentially as described.

3. The side folding-rollers C' C', in combination with the folding-roller W, the brush Y, and the former T, substantially as specified.

4. The combination, with the rising-and-falling former T, of the bag-stripper D', essentially as described.

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Copy-Holders.

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Fig. 5.

Fig. 1.

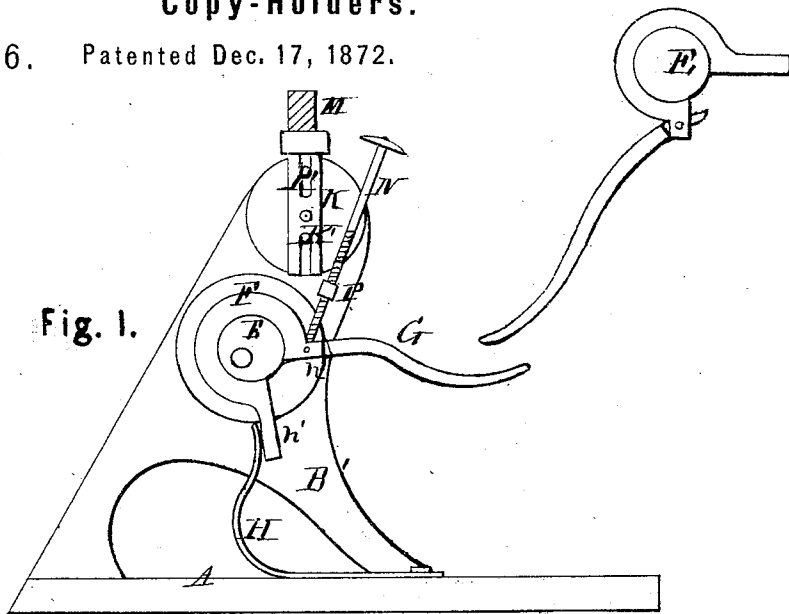
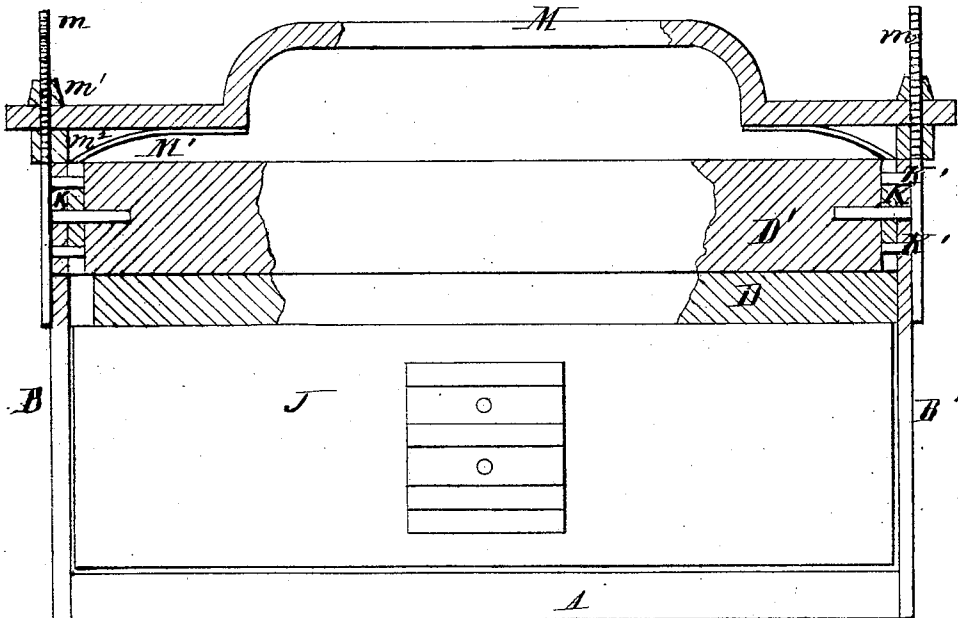


Fig. 2.



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