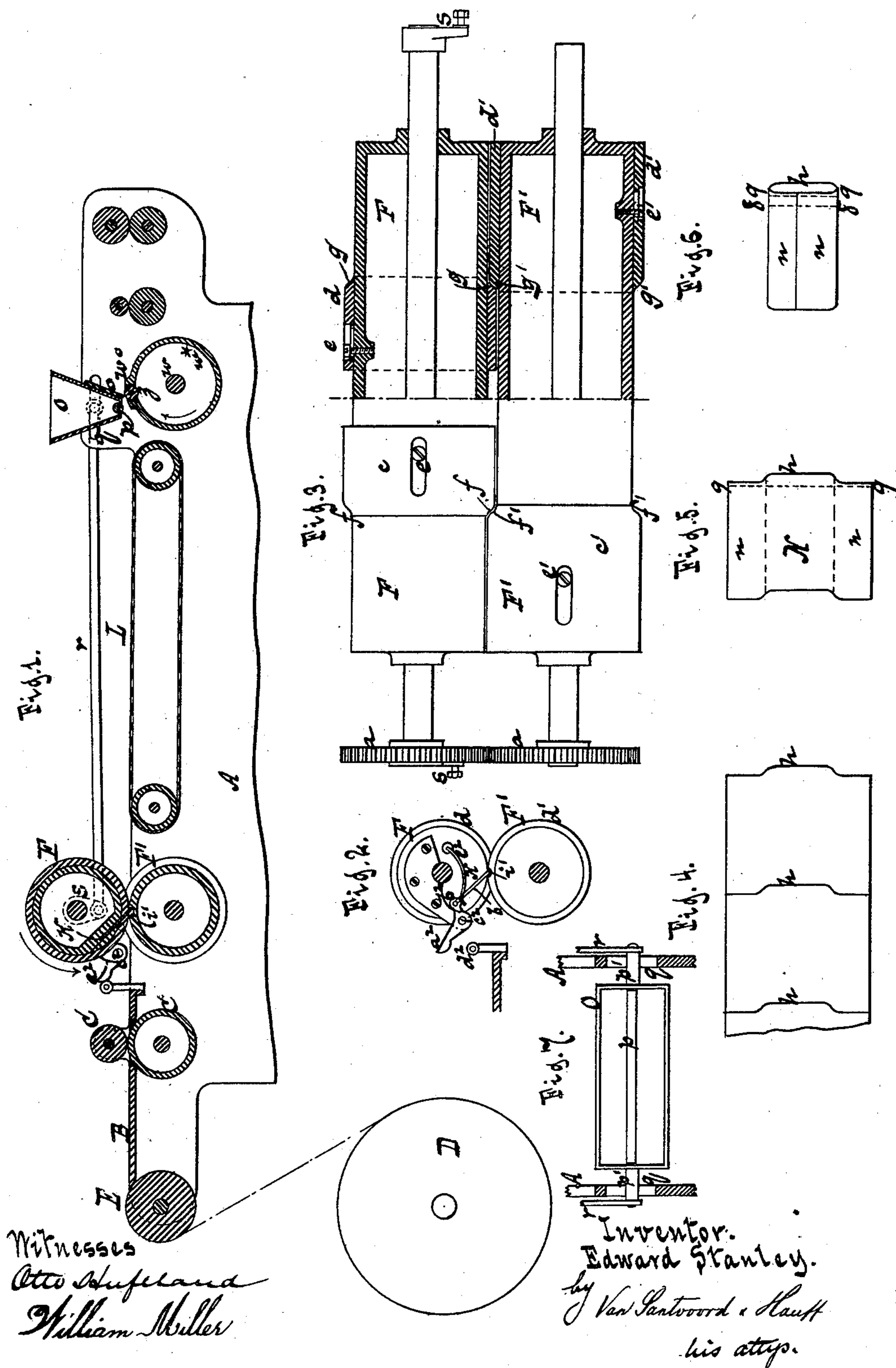


E. STANLEY.
Paper-Bag Machine.

No. 225,887.

Patented Mar. 23, 1880.



UNITED STATES PATENT OFFICE.

EDWARD STANLEY, OF BROOKLYN, E. D., NEW YORK.

PAPER-BAG MACHINE.

SPECIFICATION forming part of Letters Patent No. 225,887, dated March 23, 1880.

Application filed December 3, 1879.

To all whom it may concern:

Be it known that I, EDWARD STANLEY, of Brooklyn, E. D., county of Kings, and State of New York, have invented a new and useful Improvement in Paper-Bag Machines, which invention is fully described in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a longitudinal vertical section. Fig. 2 is an end view of the cutting-rollers. Fig. 3 is a sectional front view of the same. Fig. 4 shows the web after the same has been exposed to the cutting mechanism. Fig. 5 shows a blank for a bag ready to be folded. Fig. 6 shows the same when partially folded. Fig. 7 is a plan of the paste-box.

Similar letters indicate corresponding parts.

This invention consists in the combination, in the cutting mechanism of a paper-bag machine, of two rollers which are geared together and work nearly in contact with each other, and are provided, respectively, with beveled shoulders, acting against each other to crimp the paper in its passage between the rollers, a knife working in a slot in one of said rollers, a groove formed in the other roller to receive the cutting-edge of the knife, and mechanism for imparting to the knife a reciprocating motion, so that the web, in passing through between the cutting-rollers, is cut up into a series of blanks for paper bags without any waste of material; also, in the combination, with the cutting-rollers and with a knife fitted into one of said rollers, of crimping-collars which can be adjusted for bags of different sizes, the construction and arrangements of which parts will be fully hereinafter described.

In the drawings, the letter A designates the frame which supports the working parts of my machine. On this frame is formed a platform, B, over which the web is drawn by the action of feed-rollers CC, said web being taken from a roll, D, and passed over a guide-roller, E, in the manner usually practiced in paper-bag machines. After having passed the platform B, the web is carried through between the rollers F F', which extend transversely across the entire width of the platform B, and are nearly in contact with each other. They are geared together by cog-wheels *a a*, Fig. 3,

so that they revolve with the same velocity, and motion is imparted to the lower roller, F', by any suitable means. The bearing of the upper roller, F, is intended to be made adjustable, so that said roller can be readily brought in the proper relation toward the lower roller, allowing the web to pass without binding.

The diameter of the rollers F F' is such that their circumference is greater than the length of the blanks for the largest bag to be made on the machine, the motion of said rollers being such that their surfaces move faster than the web fed into the machine, so that wrinkles or folds which may be in the web are straightened out while the web is being cut, and the edge of the web, after it is cut, is prevented from catching on the rolls or any parts attached to the same.

The upper roll, F, is provided with a slot, *b*, which receives and guides the knife K, said slot being in an oblique position, as shown in Fig. 2.

The knife extends throughout the entire length of the roller F, and on this roller are secured two collars, *c d*, Fig. 3, which are movable and provided with one or more set-screws, *e*, for adjusting them in the required position.

The outer shoulder, *f*, of the collar *c* is beveled off and works against a correspondingly-beveled shoulder, *f'*, of a collar, *c'*, which is adjustable on the lower roller, F', by one or more set-screws, *e'*. This roller is further provided with another adjustable collar, *d'*, which is secured in position by one or more set-screws, *e'*, and the inner beveled shoulder, *g'*, of which is set to work in contact with the outer beveled shoulder, *g*, of the collar *d* on the upper roller, F, as shown in Fig. 3.

The distance between the shoulders *f* and *g* is adjusted to correspond to the length of the closing-flap *h*, Fig. 5, of the bag to be produced, and by adjusting the collars *c d c' d'* the machine is set for bags of different sizes.

As the web passes through between the rollers F F' it is crimped by the action of the collars *c d c' d'*, and while it is held in this crimped position the knife acts thereon and separates a blank from the web, and on account of the oblique position of said knife the

cut produces a curved edge, as shown in Figs. 4 and 5.

The reciprocating motion of the knife is produced by any suitable mechanism, such, for instance, as a bell-crank lever, $a^2 b^2$, Fig. 2, which has its fulcrum on a pivot, c^2 , and the arm b^2 of which is pivoted to the knife, while the arm a^2 acts against a fixed stud, d^2 , so as to throw the knife out. A spring, e^2 , has a tendency to draw the knife back.

In order to permit the knife to cut through the web, the lower roller, F' , is provided with a recess, i' , to receive the cutting-edge of the knife, and thus prevent the same from being injured by coming in contact with the metallic body of the lower roller.

The blanks, after having been cut from the web, are received by an endless apron or belt, L , and exposed to the action of suitable folders, the construction of which parts is the same as in ordinary paper-bag machines, and requires no further description.

By the action of the folders the side flaps n of the blank N , Fig. 5, are folded inward to the position shown in Fig. 6, and thus folded the blank is exposed to the action of the creasing knife o and of the paste-roller p , which parts are attached to the paste-box O . In the example shown in the drawings this box is provided with gudgeons p' , which extend from its ends, and are guided in slots q in the frame A , Fig. 7, and are connected by a pitman, r , with cranks s on the shaft of the upper cutting-roller, F , so that by revolving said roller a reciprocating motion is imparted to the paste-box.

The motion of the paste-box is in a plane parallel to the surface of the bed over which the partly-folded blanks are moved, and when the paste-box moves forward toward the cutting rollers $F F'$, the paste-roller p receives a partial revolving motion by a ratchet-wheel and pawl or any suitable mechanism, such as is commonly used in pasting devices, and thereby the paste is applied to the partially-folded blanks between the lines 8 8 and 9 9 in Fig. 6. Before the paste is applied, however, the creasing-knife o strikes an elastic cushion or roll, z , situated in the periphery of a roller, w^* , which is mounted on a shaft, w , and re-

volves in the direction of the arrow shown in Fig. 1. By the action of the creasing-knife a crease is produced in the partially-folded blank along the line 9 9, Fig. 6, and that portion of the blank beyond this line, including the closing-flap h , is turned up, and after the paste has been applied the blank passes through between suitable pressing-rollers, so as to turn down the closing-flap and to finish the bag.

In order to permit the blanks to pass freely between the paste-box and the roller w^* , the largest portion of the periphery of this roller may be cut away, leaving a projection, w^c , which supports the blanks during the operation of creasing and pasting and releases the same after these operations have been accomplished. By this arrangement I am enabled to cut up the web into blanks for paper bags without producing a particle of waste, and the cost of manufacture of such bags is materially reduced.

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

1. The combination of the two rollers, geared together and working nearly in contact with each other, and provided, respectively, with beveled shoulders coacting to crimp the paper in its passage between the rollers, with a knife arranged within a slot in one of said rollers, and mechanism, such substantially as described, for reciprocating the knife.

2. The combination, with the two rollers, geared together, and a knife arranged within a slot in one of said rollers, of crimping-collars arranged, respectively, on the rollers, substantially as and for the purpose described.

3. The combination, with the two rollers $F F'$, geared together, and a knife arranged in one of said rollers, of longitudinally-adjustable crimping-collars arranged, respectively, on the rollers, substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 26th day of November, 1879.

EDWARD STANLEY. [L. S.]

Witnesses:

W. HAUFF,
CHAS. WAHLERS.