

H. F. Knapp. Collar Machine.

N^o 54561

Patented May 8, 1866

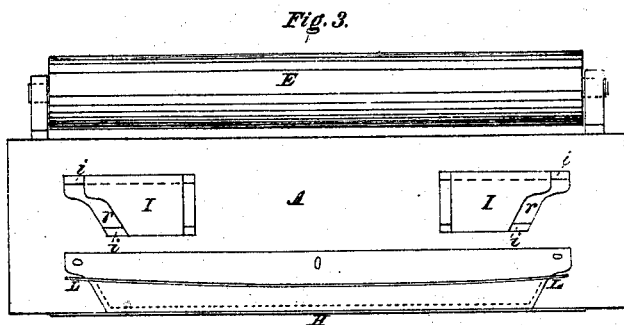
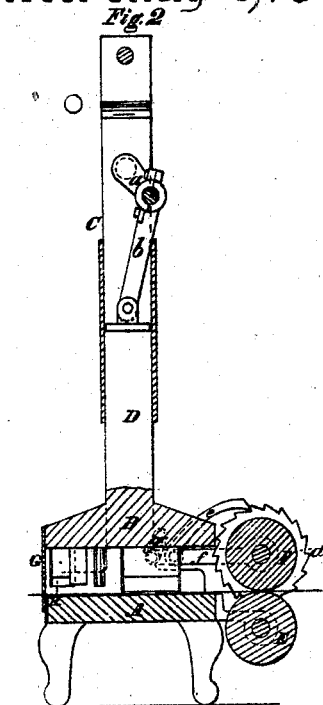
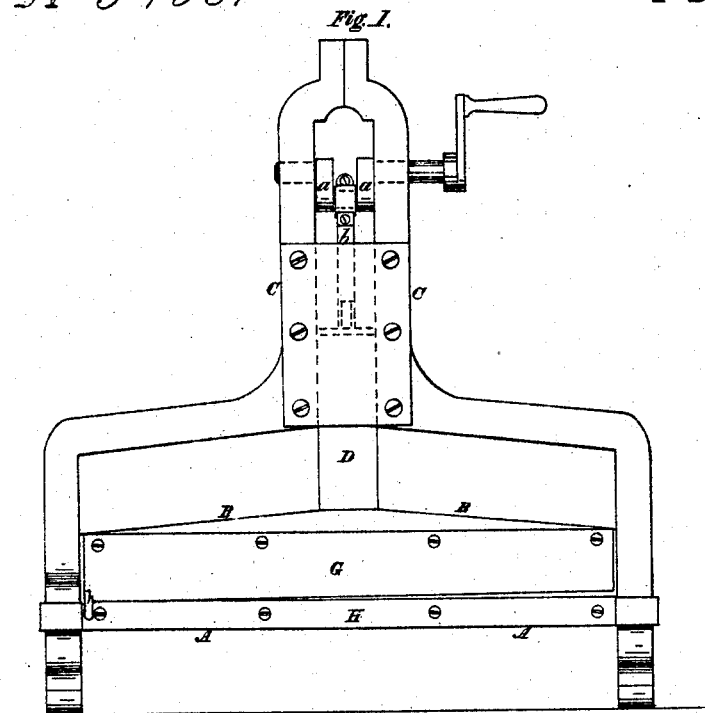
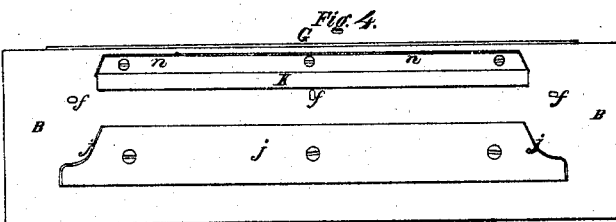


Fig. 5.



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UNITED STATES PATENT OFFICE.

HENRY F. KNAPP, OF NEW YORK, N. Y.

IMPROVEMENT IN MACHINES FOR MAKING PAPER COLLARS.

Specification forming part of Letters Patent No. 54,561, dated May 8, 1866.

To all whom it may concern:

Be it known that I, HENRY F. KNAPP, of the city, county, and State of New York, have invented certain new and useful Improvements in Machines for Making Paper Collars; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, forming a part of this specification, in which—

Figure 1 is a side elevation. Fig. 2 is a transverse vertical section. Fig. 3 is a plan of the bed or lower portion of the machine. Fig. 4 is an inverted plan of the follower or upper portion of the machine. Fig. 5 is a vertical transverse section of the knife *j* on an enlarged scale.

Similar letters of reference indicate corresponding parts in all the figures.

This invention consists in certain improved means of feeding the paper to the machine; also, in a novel system of reciprocating cutters and adjustable stationary cutters for cutting out and shaping the ends of collars of different lengths; also, in an improvement in the shear-cutters by which the collars are severed or cut off from the roll of paper; and, further, in a novel arrangement of feed-rolls for feeding the paper, cutters for cutting out and shaping the ends of the collars, a creasing device for creasing the collars in the line in which they are to be folded or turned over, and cutters for cutting off the collars from the roll of paper.

To enable those skilled in the art to understand the construction and operation of my invention, I will proceed to describe it with reference to the drawings.

A represents the bed-plate of the machine, on which are situated the stationary portions of the cutting or punching devices, and from which projects upward an arch or standard, C.

B is the reciprocating platen which carries the moving portions of the cutting or punching devices, and which is secured upon the lower end of the vertical sliding bar D, which moves in suitable guides formed in the standard C, and receives an up-and-down movement from the rotation of the crank *a*, placed transversely in the said standard C, and connected with the bar D by a pitman, *b*. Situated longitudinally in front of the bed-plate A are two feed-rolls, E F, the upper side of the

lower roll, E, being flush with the upper surface of the bed-plate. These feed-rolls feed the paper inward to the machine in the usual manner, and may be covered with india-rubber or other soft material, if desired.

A ratchet-wheel, *d*, is placed upon one end of the upper roll, F, and is acted upon by a pawl, *e*, which is pivoted to a short bar, *f*. The said bar having its outer end pivoted upon the shaft of the said upper roll and its inner end connected with the platen B by a link, *g*, in such way that the reciprocating motion of the platen operates the pawl *e* and communicates an intermittent rotary motion to the ratchet-wheel *d*, and consequently to the feed-rolls.

r r represent two longitudinal holes or slots which pass down through the bed-plate A, and are situated near the ends and front edge thereof. Each of these slots has at each side a longitudinal shoulder, *i*, situated below the surface of the bed-plate in such a way as to support the adjustable stationary blocks or cutters I I, which are secured in the slots *r* upon the said shoulders *i* in any suitable manner. The outer ends of these cutters form the stationary cutting-edges, that act in conjunction with the reciprocating cutters *j j*, forming shears to cut and form the ends of the collars, and are curved so as to give any desired shape to the said ends. These cutters or blocks I are shorter than the holes *r* in which they are situated, so that by placing them at a greater or less distance apart they may be adapted to cut collars of different lengths or sizes. Secured longitudinally upon the under side of the platen B, immediately over the knives I I, is a removable bar, J, upon the ends of which are secured the thin vertical cutters *j j*, which are curved to correspond to the outer ends or cutting-edges of the stationary cutters I I, and which, as the platen B descends, move past the curved edges of the said cutters I I to sever the surplus paper from the end of the collar, the bar J being secured upon the platen B by means of screws, which may be easily removed therefrom, so that similar bars of different lengths may be used, in connection with the adjustable cutters I I, in cutting collars of different sizes. Behind the bar J are the punches *f f f*, which project downward from the under side of the platen, and as the platen descends pass into corresponding holes in the

bed-plate, in order to punch the button-holes in the collar. Secured longitudinally upon the under surface of the platen, in rear of the punches *fff*, is an india-rubber pad, *k*, which, when the platen descends, presses the collar upon the curved creasing-wire *L*, which is situated upon the bed-plate *A* in a longitudinal position immediately beneath the pad *k*, by which means the collar is creased to prepare it for folding, as required in a turn-down collar. Just behind the pad *k* is the ordinary serrated blade *n*, which embosses the collar in imitation of stitching. Secured upon the rearmost edge of the bed-plate *A* is the stationary cutter *H*, which acts, in connection with the vertically-moving knife *G*, to cut the finished collar from the sheet of paper on the end of which it is formed. The vertically-moving cutter *G* is secured upon the rearmost edge of the platen, and has one end of its cutting-edge somewhat lower than the other, and in this depressed end of the said cutter *G* is formed a downwardly-projecting spur, *h*, the inner side of which is beveled or inclined in such a way as to guide the end of the cutter *G* past the edge of the stationary cutter *H*, by which means the edge of the cutter *G* is caused to move past the said cutter *H* without striking or riding upon the same.

The operation of the invention is as follows: A sheet of paper of the proper width is passed between the rolls *E F*, which feed it inward until its forward end is brought over the stationary cutters *I I*, when the descent of the platen causes the cutters *jj* to move past the edges of the cutters *I I* and cut the surplus paper from the corners of the sheet, and thus shape the end of the collar to be formed from the end thereof, the spur *h* preventing the cutter *G* from riding upon the lower or stationary cutter, *H*. The next upward movement of the platen causes the pawl *e* to act upon the ratchet-wheel *d*, and thus rotate the rolls sufficiently to move the paper forward until its front end is brought underneath the punches *fff*, the pad *k*, and the serrated blade *n*, so that the next descent of the platen causes the punches *fff* to punch the button-holes, while the pad *k* presses the collar down upon the

curved wire *L*, thus creasing it preparatory to the folding thereof, and the serrated blade *n* embosses it in imitation of stitching, the cutters *I I* and *jj* at the same time cutting the ends of the succeeding collar. The next upward movement of the platen operates the rolls, so that the paper is again fed inward until the collar formed upon the end of the sheet of paper by the operations just described passes out at the rearmost side of the machine in such position as to be sheared from the sheet by the cutters *G* and *H* at the next descent of the platen, which also punches, creases, and embosses the paper which forms the succeeding collar, and also cuts the corners from the paper under the bar *k*, each descent of the platen thus acting in the formation of three different collars, and the paper being fed into the machine as fast as the collars are cut off by the knives *G H*.

I do not claim embossing and indenting preparatory to folding at one and the same operation; but

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

1. Operating the feed-rolls by means of a ratchet-wheel on one of the rolls, and a pawl actuated by the platen which carries the reciprocating cutters, substantially as herein specified.

2. The combination of the angular-edged adjustable cutters *I I* with knives *jj*, attached to a removable bar, *J*, and operating to shear off the waste and form the ends of collars, substantially as herein set forth.

3. The projection *h* formed upon the reciprocating cutter *G*, and operating to prevent the said knife from striking or riding upon the stationary knife *H*, substantially as herein set forth, for the purpose specified.

4. The arrangement of the feed-rolls *E F*, cutters *I I* and *jj*, and cutters *G* and *H* in relation with each other and the bed *A* and platen *B*, substantially as and for the purpose herein specified.

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Witnesses:

A. LE CLERC,
I. W. COOMBS.