No. 77,294. PATENTED APR. 28, 1868.

H. F. KNAPP.
COLLAR MACHINE.

Fig. 1.

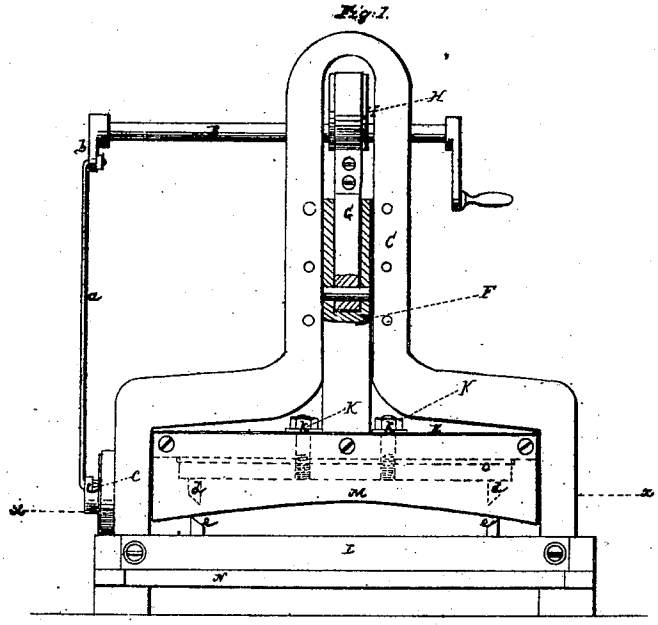


Fig. 2.

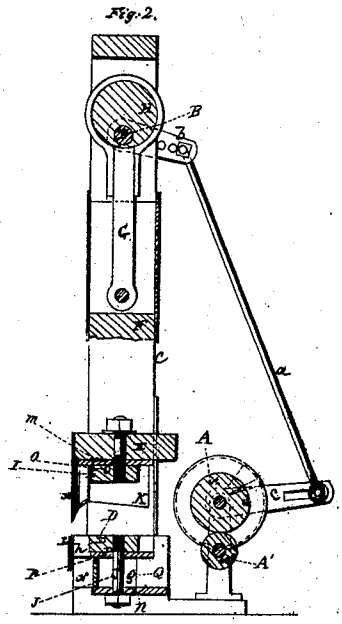


Fig. 3.

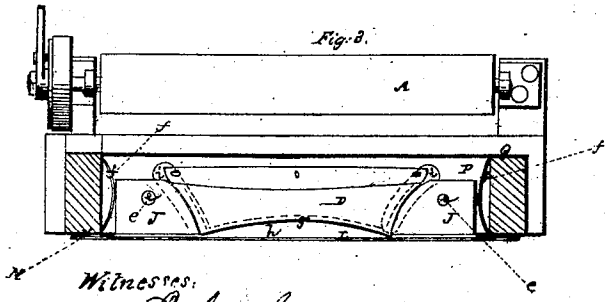
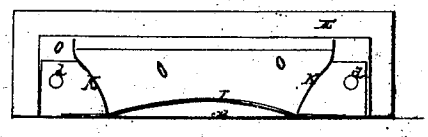


Fig. 4.



Witnesses:

J. F. Cromby

G. W. Reed

Inventor.

Henry F. Knapp

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

United States Patent Office

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

Letters Patent No. 77,294, *dated April* 28, 1868.

IMPROVEMENT IN COLLAR-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

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 a certain new and useful Improvement on Machines for Making Collars, Cuffs, Wristbands, and other like articles from paper or paper cloth, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification, and in which—

Figure 1 represents a side elevation of a machine adapted to the making of collars from paper or paper cloth, with my improvement applied to it.

Figure 2 is a vertical section of the same, taken transversely to the former figure.

Figure 3, a horizontal section through the line *x x* in fig. 1; and

Figure 4 an inverted plan or under view of the upper or moving cutters in their connection with the platen.

Like letters refer to like parts throughout the several figures.

This, my present invention, embraces many or most features in common with the machine described in Letters Patent of the United States, (No. 59,410,) issued to me on the sixth day of November, 1866, in which were combined, in connection with cutting-blocks, a longitudinal knife and cross-cutters, operating, in their joint descent, to intersect each other in their lines of cut, by making the one knife or set of cutters to traverse through or across the cutting-edge of the other cutter; also in which, to facilitate this action of the cutters, a sectional cutting-block was used, the ends of which were made to yield or slide, but so as, while admitting of the passage of the cross-cut knives through the block and longitudinal cutter, a close or unbroken cutting-edge was secured to the latter; likewise in which machine there were arranged on an intermittently-rotating feed-roller, creasing and embossing-strips, operating in concert with cutters that afterwards shaped and detached the article. All of these features are or may be used in this my improvement, the nature of which consists in a novel combination, with such longitudinal and cross-cutting devices, of additional longitudinal cutters, for securing both a curved and straight longitudinal cut, for the formation of collars or other articles of a curvilinear contour.

Referring to the accompanying drawing, which represents the machine as constructed for the manufacture of collars, of paper or paper cloth, of what is known as the Shakespeare style, or by other terms as applied to ladies collars, but in both of which the one or both longitudinal edges, instead of being straight, are of curvilinear form, it will be unnecessary here to describe minutely all or the general details, which are or may be the same as those described in my former patent, herein previously referred to. Thus, A A′ are the feed-rollers to the sheet, the one of which may or may not have arranged on its periphery creasing or embossing-strips; or the creasing and embossing and formation of the button-holes may be afterwards effected on the cutting-blocks by the action of the platen; or, say, the upper one, A, of these feeding-rollers may be provided with metallic embossing-plates, having some fanciful design upon them, in which case it is preferable to make the periphery of the lower roller A of a soft or flexible character, that may be done by covering or otherwise. An intermittent rotary motion may be given to the roller A, to effect the feed, by a rod, *a*, connected by an arm, *b*, to a continuously-revolving shaft, B; said rod being geared at its lower end to a lever, *c*, that serves to actuate a ratchet or other device on the end of the roller A, so as to give to the latter the requisite intermittent rotary motion. The driving-shaft B is carried by the upper portion of the frame C of the machine. The sheet of paper or paper cloth fed by the rollers A A′, each intermittent action the width of a collar, is passed on to or over the cutting-block D, where it is subjected to the action of the platen, and cut or shaped, and it may be creased or embossed and the button-holes formed, much in the same manner as in my former machine before referred to. Thus, E is the vertically-reciprocating platen, that may be operated by a slide, F, rod G, and eccentric, H, on the shaft B. D, the cutting-block, for operation in connection with the longitudinal cutter I, carried by the platen, and J the sliding or opening end-sections to the cutter-block, for the passage through or between them of the cross-cutters K, and so as to intersect the longitudinal cut of the knife I and block D. Here, however, instead of the sections J being opened by the cross-cutters K in their descent, they are drawn apart from the main block D, by the action of bevel-nosed studs *d*, connected with the platon, acting, in the descent of the latter, on reversely-bevelled studs *e*, attached to the sliding sections, which springs *f* serve to

close on the ascent of the platen. This mode of opening the sliding sections J prevents dulling of the cross-cutters K. Here, too, it will be seen that the opposite longitudinal edges of the collars formed by the moving cutter I and cutting-block D, are not parallel, but that the edge *g* of the cutting-block is of an arched shape, and the cutter of corresponding form, as requisite in making a Shakespeare or other like collars. This involves a certain amount of waste of material, and to make a collar, say, straight on the one edge and hollowed on the other, I employ, in addition to the cutters already mentioned, longitudinal straight cutters L and M, the lower one being a fixture to operate in connection with the cutting-block, and the upper one working in concert with the platen. These two cutters, which form the back edge of one collar, while the block D and cutter I shape the inner edge of the next collar, I prefer to make separate and distinct from the other cutters, whereby they may have an elasticity secured to them that prevents jagging, and establishes a smooth or clean cut, and, in the case of such lower cutter L, provides a clear space, *h*, for the escape of the waste; and here it may be observed that I form, through the bed, open spaces *i*, for clearance of end clippings, but, in some cases, single solid longitudinal knives, having edges corresponding to the cutters I, and M, and L, and edge *g* of the block D, may be substituted, when the sliding sections J may be dispensed with. It is preferable, however, for the reasons given, to make such longitudinal cutters separate and distinct, attaching, say, the cutter M by screws or otherwise to the edge of the platen, and the lower cutter L by a plate, N, to the frame or bed.

In the practical working of such a machine, it often becomes necessary to change the inner upper longitudinal cutter I, block D with its sliding sections J, and cross-cutters K, to suit different shapes or sizes of collars, and as, when one of these cutters is changed, it is equally necessary to change the other of them, I secure such cutters in common to cutter-holders or plates O P, connected, by bolts *j k*, with the bed Q and platen E; the holder O carrying the longitudinal knife I, and cross-cutters K, and the other holder P carrying the cutting-block D, and sliding sections J, by which means, on taking out the holding-screws, these upper and lower sets of cutters may be removed for the substitution of others, and kept in place or proper relative position to be replaced when required in the machine. A packing-strip or plate may be introduced between the platen and upper plate-holder, and the lower cutter-holding bolt *j* made to pass through a cross-bar, *n*, binding on the lower face of the bed Q, and under edge of the plate N, to or through which the lower straight longitudinal cutter L is fastened, to give increased steadiness to the action of the machine.

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

The knives or cutters I, M, K, cutting-block D, and cutter L, arranged for operation together, essentially as herein set forth.

HENRY F. KNAPP.

Witnesses:
J. W. COOMBS,
G. W. REED.