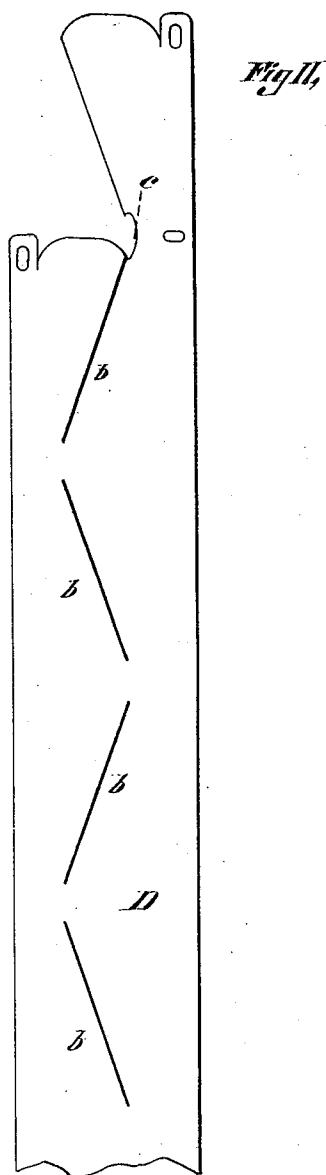
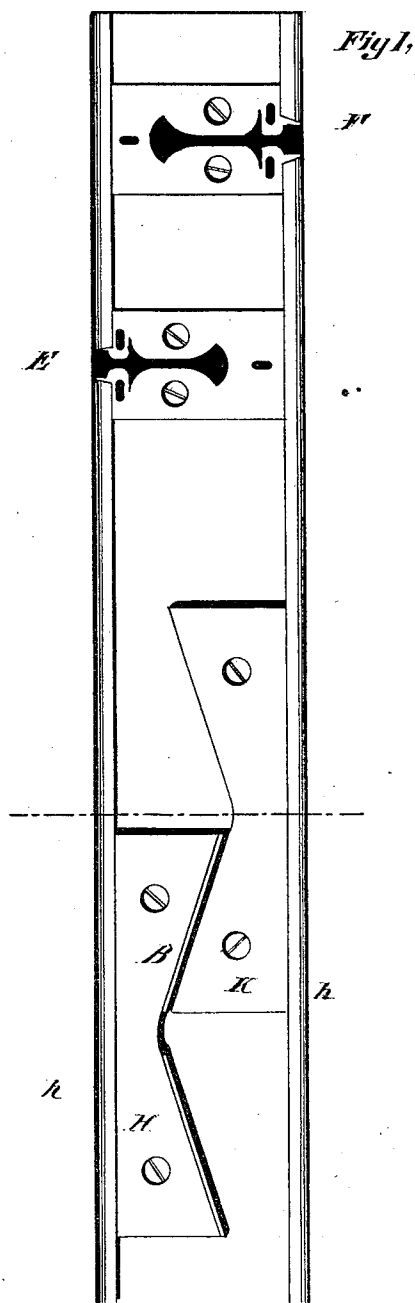


G. HARRINGTON.

DIES FOR THE MANUFACTURE OF PAPER COLLARS.

No. 185,395.

Patented Dec. 19, 1876.



Witness,
Phelps Johnson
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Inventor,
George Harrington
by *R. B. Hyde*
att'y.

UNITED STATES PATENT OFFICE.

GEORGE HARRINGTON, OF SPRINGFIELD, MASSACHUSETTS.

IMPROVEMENT IN DIES FOR THE MANUFACTURE OF PAPER COLLARS.

Specification forming part of Letters Patent No. **185,395**, dated December 19, 1876; application filed August 24, 1876.

To all whom it may concern:

Be it known that I, GEORGE HARRINGTON, of Springfield, Massachusetts, have invented an Improvement in Dies for the Manufacture of Paper Collars, of which the following is a specification:

The object of my invention is the construction and combination of cutters and dies for dividing a strip of paper passing over them into collars with the smallest waste of material, and in such manner that the preliminary action of the tools upon the strip will least interfere with the accuracy of the subsequent movement of the strip to the dies for completing the form of the collars and removing them; and my invention consists in arranging, in combination with dies for shaping the ends of and removing two collars, a cutter that shall form in the strips slits that will, while outlining the longitudinal edges of one collar, or of the halves of adjacent collars, leave the edges of the strip intact, with an interval between the ends of the slits to maintain the strength of the strip in the direction of its length, and so that when the strip is fed the length of one collar from the cutter the dies will remove two collars from the end of the strip.

Figure I is a plan view, showing the relative arrangement of cutter and dies, Fig. II being a view of the portion of a strip that has passed the cutter.

In the drawing, the cutter B is shown as arranged in the bed of a collar-cutting machine, the strip of paper cloth D being fed by rolls through suitable guides *h h*, over the cutter B and over the dies E F. The drop is provided with a cutter and dies the reverse of those in the bed. The edges of the cutter B, together with its reverse tool in the drop, may be formed to have a draw shear cut.

As shown in Fig. 2, the oblique cuts *b b*, formed by the cutter B, make the longer edges of the collars and the dies E F remove all of the paper cut away from the strip D in forming the ends of the collars and the button-holes.

Where the dies E F remove the paper between the ends of the slits *b b*, any slight inaccuracy of the feed of the strip would not

prevent the dies from producing the edges of the collars clearly and continuously, by reason of the cutting-edge of the dies being caused to cross the cut made by the cutter B, when the stock removed, as shown at *c* in Fig. II, interferes in no manner with the appearance of the collar after it has had its edges folded.

I do not wish to make any claim to the method as above described of insuring smooth edges by causing one cut to cross a previous one, as I am aware that such device has been shown in the patent of H. F. Knapp, November 6, 1866.

The embossing, stitching, and creasing necessary to perform the ornamentation of the collar, and determine the line of fold thereon, are produced by dies M K upon each side of the cutter, and operate simultaneously with the cutter by the action of the drop, and, as it is not claimed that there is anything peculiar in their arrangement or action, they are not shown, except in blank.

It is evident that the situation of the finishing-dies E F, at only one-half the length of a collar apart, and at only the length of a collar from the cutting-tool B, reduces the distance to a minimum that the stock or strip has to be fed from the preliminary to the final action of the tools; and it is evident that the action of the cutter B is such as to in the least interfere with the feed of the strip to the point where such feed is no longer necessary; and by reason of the propinquity of cutter and dies I am able to greatly reduce the size of the drop, and thus provide for its more perfect working.

It will be seen that in the slits *b b*, no stock being removed, the edges bear against each other, so that in the direction of the line of feed the strip remains practically uncut.

Now, having described my invention, what I claim is—

1. A cutting-tool constructed and arranged, substantially as described, so as to shape the longer edges for two collars in making simple cuts, the ends of which are removed by a short interval, substantially as described.

2. In combination with a cutting-tool, constructed substantially as described, arranged to cut the longer edges for two collars while

leaving the strength of the strip comparatively unimpaired longitudinally, the dies E F for completing and removing two collars, when relatively arranged, as shown and described.

3. The combination of cutter B, located at the length of one collar from the dies E F,

with the dies E F arranged at the length of one-half collar apart, substantially as described.

GEO. HARRINGTON.

Witnesses:

R. F. HYDE,

P. S. BAILEY.