G. K. Snow.

Collar Mach.

Sheet 1. 2 Sheets

No. 51,233.

Patented Nov. 28. 1865.

Fig. 2.

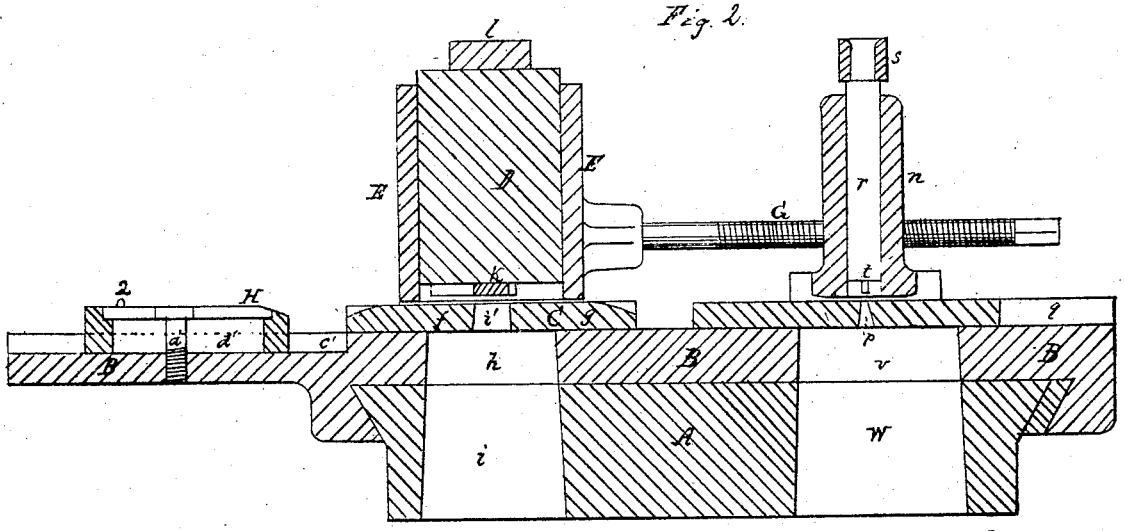
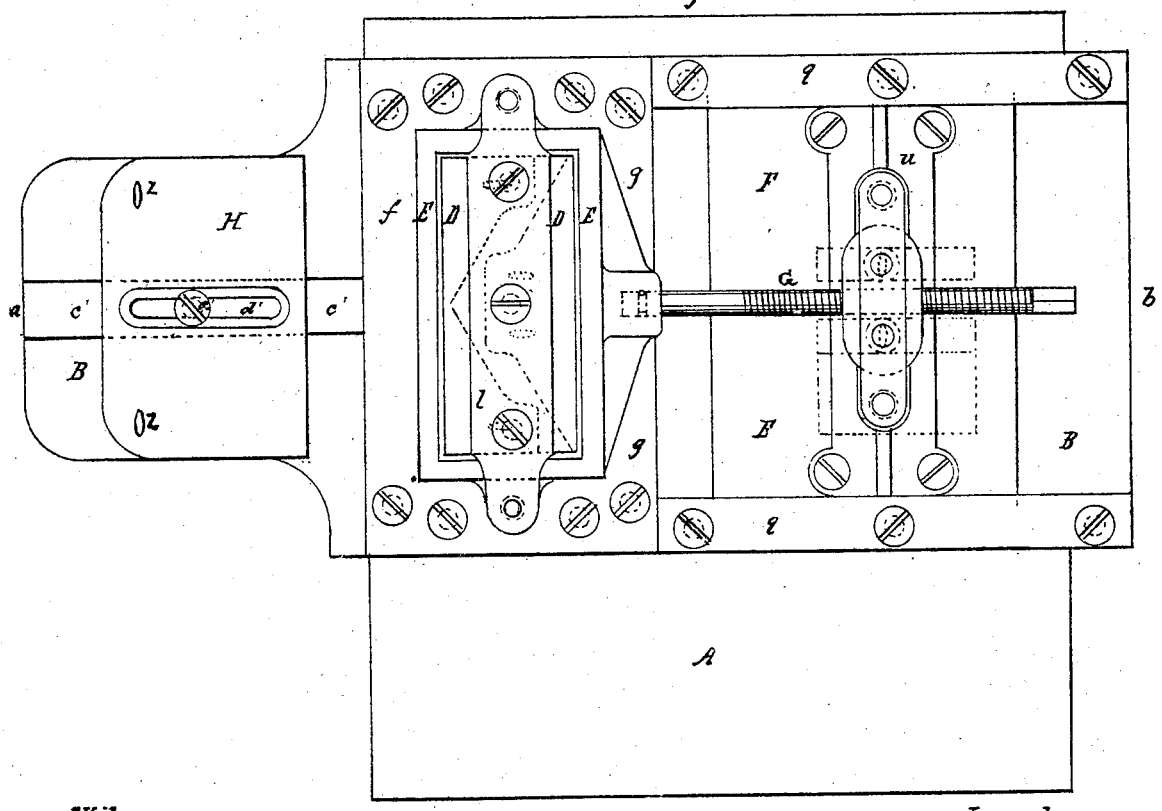


Fig. 1.



Witnesses.

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Sheet 2. 2 Sheets.

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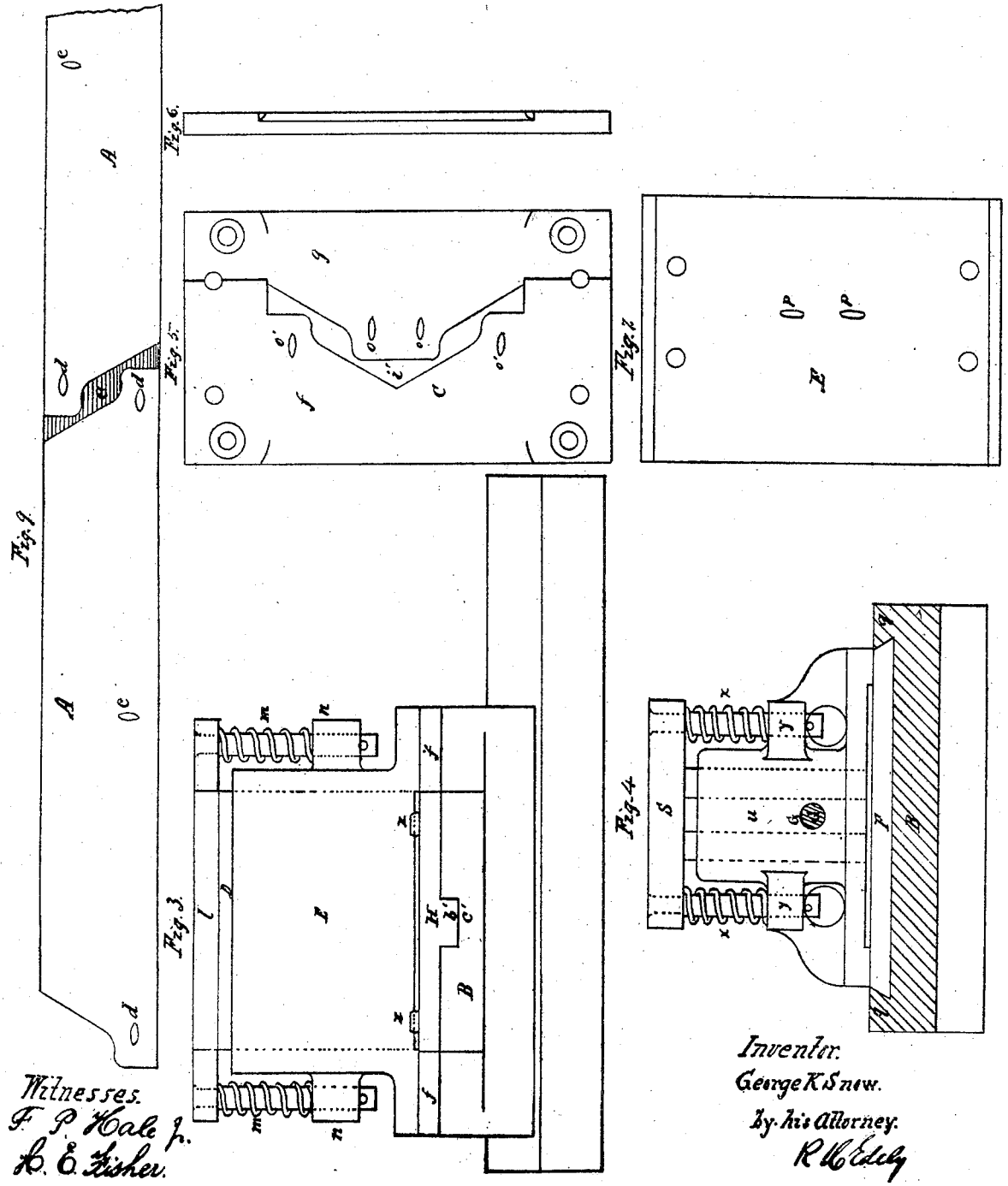

UNITED STATES PATENT OFFICE.

GEORGE K. SNOW, OF WATERTOWN, MASSACHUSETTS, ASSIGNOR TO HIMSELF, MARCH BROTHERS, AND PIERCE & CO.

IMPROVEMENT IN PAPER-COLLAR MACHINES.

Specification forming part of Letters Patent No. **51,233**, dated November 28, 1865.

To all whom it may concern:

Be it known that I, GEORGE K. SNOW, of Watertown, in the county of Middlesex and State of Massachusetts, have made a new and useful invention having reference to cutting or stamping shirt-collars from a strip of paper or other material; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view of my machine for such purpose. Fig. 2 is a longitudinal and vertical section of it, such being taken on the line *a b* of Fig. 1. Fig. 3 is a front-end elevation of it. Fig. 4 is an elevation of the rear part carrying the central button-hole dies. Fig. 5 is a top view, and Fig. 6 an edge view, of the female end and button-hole-die plate. Fig. 7 is a top view, and Fig. 8 a longitudinal section, of the central button-hole-die plate.

This machine is intended to stamp out neck-collars from a continuous roll or strip of paper of a width corresponding to that of a collar to be made from it. Fig. 9 exhibits the arrangement of such collars in the strip, or the cuts made in such strip in order to reduce it to collars—that is to say, the short pieces *e*, being cut from the strip at equal or proper distances apart, leave collars A A. Each of these collars has a central button-hole, *c*, and two end button-holes, *d d*, stamped through it by the machine. With the exception of the small pieces necessary to the formation of the button-holes, parts such as are marked *e* in Fig. 9 are all that it is necessary to remove from the strip in order to convert it into collars. In this way of forming the collars from a strip it will be observed that the end of each collar extends by that of the other, and goes close, or nearly close, up to the upper portion of the said other collar. This peculiar arrangement of the collars or their ends I claim to be new and of my invention, as well as the machine for cutting or stamping such collars in such manner from a strip.

In the drawings, A denotes the bed-plate of the machine, which is dovetailed into the cutter-carriage B, or so applied to it as to enable the said carriage to be moved laterally and rectilinearly back and forth on the said bed-plate. Fixed to the said carriage are two plates, *f g*, which, taken together, constitute the female die-plate C. Suitable openings, *h i*, are formed in the carriage B and the bed-plate A, in order to allow the waste separated from the strip by the dies to be discharged from the plate C.

The opening *i'* between the two plates *f g* is the female die, by which the ends of the collars are formed through the action of a corresponding male die, *k*, projecting from the bottom of a plunger, D. (See Fig. 2.) The said plunger plays vertically within a box or frame, E, (fastened to the carriage B and on the top surface of the die-plate C,) and has a cross head or bar, *l*, bolted across its top and resting on springs *m m*, which, in turn, rest on two ears or projections, *n n*, extended from the ends of the box E. (See Fig. 3.) The purpose of the springs *m m* is to effect the elevation of the plunger D and the withdrawal of the male die *k* from the female die *i'* at the proper periods.

There are two female button-hole dies, *o' o'*, formed through the plate *f*, and there are also two other female button-hole dies, *o o*, formed in the plate *g*, they being arranged as shown in Fig. 5. Corresponding male dies should be projected from the bottom of the plunger D, so as to enter and operate with the female dies *o' o' o o* in a manner analogous to that in which the male die *k* operates with the female die *i'*. Furthermore, there is applied to the carriage B adjustable button-hole dies for cutting or stamping from the strip, the middle button-hole die represented at *c* in Fig. 9. The female dies of these last-mentioned button-hole dies are shown at *p p* in Fig. 7 as made in and through a rectangular plate, F, which is arranged on the upper surface of the carriage B, and so as to be capable of being slid thereon between two parallel guides, *q q*, arranged on the said carriage in manner as represented in Fig. 1, 2 and 4.

Corresponding male dies projecting from the plungers *r r*, extending downward from a cross-head, *s*, operate with the said female dies *p p*, one of such male dies being shown at *t* in Fig. 2.

The two plungers *r r* play within a standard, *u*, which projects upward from the plate F, and has a long screw, G, screwed through it, and so connected with the box E that on

revolving the screw the distance of the die-plate F from the die-plate C may be either increased or diminished, as circumstances may require.

Passages *v w* for discharge of the waste from the dies *p p* are made through the carriage B and the bed-plate A.

The bar *s* rests on springs *x*, which, in turn, are supported on ears *y y*, the same being as shown in Fig. 4, the said springs being for elevating the dies *t* out of the die-plate F after each descent of such dies.

In connection with the mechanism described, I make use of an adjustable gage-plate, H, carrying two projections, *z z*, which are arranged on and so as to extend from it, as shown in Figs. 1, 2, and 3. This gage-plate slides rectilinearly on the carriage B, and is provided with a clamp-screw, *a'*, by which it can be fixed in position on the carriage and with reference to the end dies. A straight rib, *b'*, projecting downward from the plate H, enters a groove, *c'*, made in the carriage, and at right angles with the outer edge of the plate *f*. The clamp-screw *a'* passes through a groove, *d'*, formed in the plate H, and screws into the carriage.

It is on one of the projections or guards *z* that the middle button-hole of each collar, prior to the separation of such collar from the strip, is placed in order to determine the correct position of the strip for the end dies to operate in order to cut the said collar therefrom. As the middle button-holes of each two next adjacent collars to be formed from the strip of paper are not at the same edge of the strip, but are situated at opposite edges of it, in manner as shown in Fig. 9, it becomes necessary that the projections *z z* should be used alternately during the process of forming the collars by the machine.

In going through the machine the strip of paper passes underneath the standard *u* and the box E and rests on the die-plates C and F, and is to be fed along with an intermittent motion. Previous to each descent of the male dies the carriage B is to be moved laterally, so as to transfer the paper from one side of the middle line of the carriage to the opposite side thereof.

The mechanisms for so moving the carriage, and for feeding the strip of paper along, and for depressing the male dies at the proper periods are not represented in the drawings, and therefore need not be described, as in the adoption of such mechanism such may be used as will best perform the said operations.

It will be observed that in the above-described machine there are two sets of each of the dies for making either the ends of the collars or the button-holes thereof, and also that there are two sets of the middle button-hole dies; also, that the two sets of each kind of the dies are arranged on opposite sides of the middle line of the carriage B.

What, therefore, I claim as my invention in the said machine is—

1. The above-described arrangement and combination of end and button-hole dies, irrespective of the middle button-hole dies.

2. The above-described arrangement and combination of end and button-hole dies, inclusive of the middle button-hole dies.

3. In combination with the end dies and the middle button-hole dies, arranged as specified, a mechanism for adjusting the distance of the said middle button-hole dies from the end forming-dies.

4. In combination with the end cutting-dies and the middle button-hole dies, arranged as described, the gages *z z*, whether stationary on the carriage B or adjustable thereon, as specified.

5. The end forming-dies, substantially as described, for shaping the contiguous ends of two collars at one operation.

6. The formation of collars in a continuous strip in the manner, or with their ends to overlap one another, as hereinbefore described, and as represented in Fig. 9.

7. The formation of collars from a continuous strip of paper, as described, by means of end forming-dies arranged as specified, and by alternately changing the strip from one side to the other of the middle line of the dies, as specified.

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Witnesses:
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