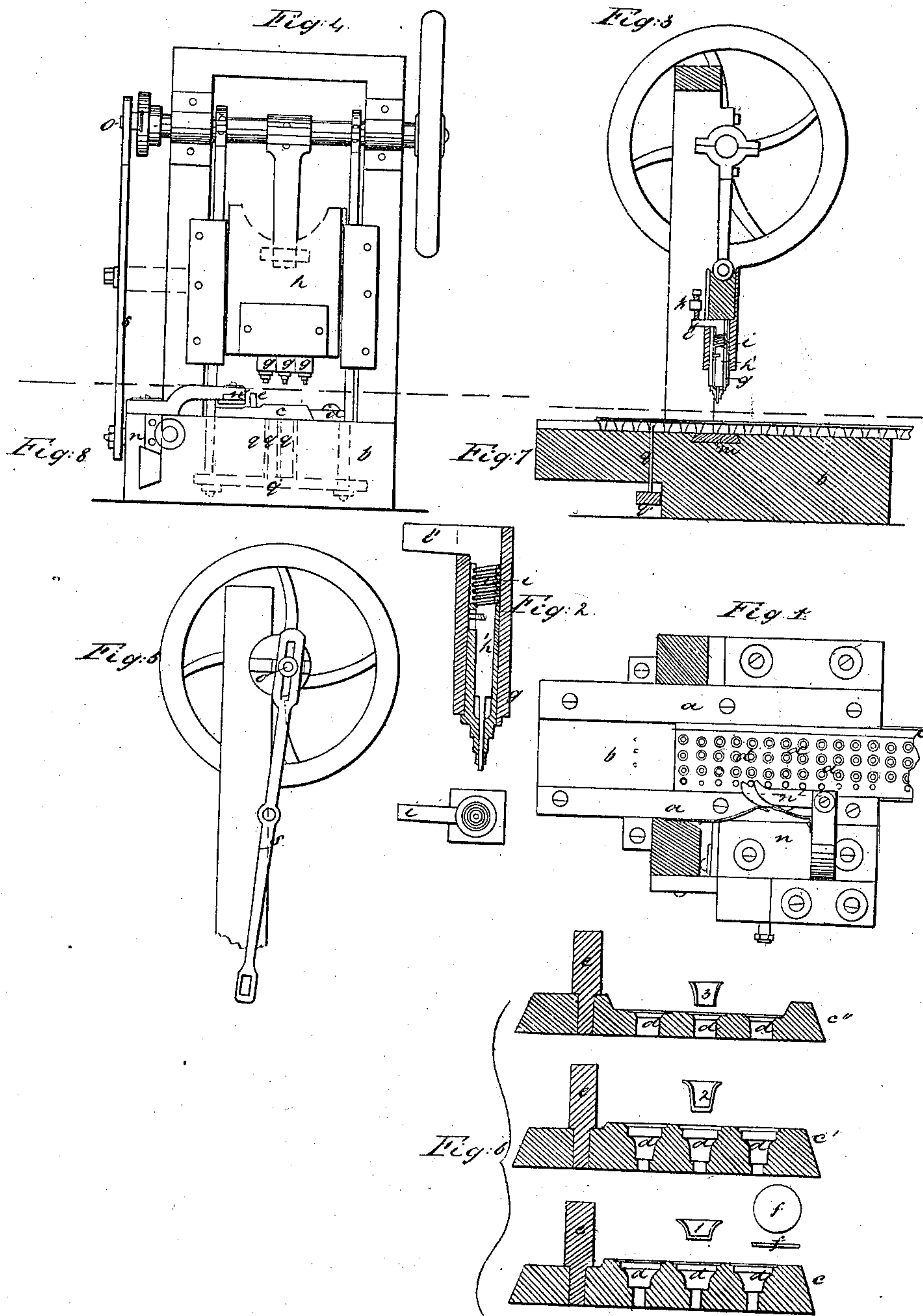


E. B. BUTLER.
MACHINE FOR MAKING EYELETS.

No. 56,897.

Patented Aug. 7, 1866.



Witnesses
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IMPROVEMENT IN MACHINES FOR MAKING EYELETS.

Specification forming part of Letters Patent No. 56,897, dated August 7, 1866.

To all whom it may concern:

Be it known that I, EDWIN B. BUTLER, of New Britain, county of Hartford, and State of Connecticut, have invented a certain new and useful Improvement in Machines for Making Eyelets; and I do hereby declare that the same is described and represented in the following specification and drawings; and to enable others skilled in the art to make and use the same, I will proceed to describe its construction and operation, referring to the drawings, in which the same letters indicate like parts in each of the figures.

The nature of this improvement will be understood from the specification and drawings.

The object desired to be attained thereby is to greatly multiply the number and rapidity of the manufacture in a given length of time, and also to produce an equally good article from a metal sheet of less thickness than is commonly used for this purpose.

Figure 1 is a top view of the bed of the machine. Fig. 2 is a top and sectional side view of a punch or former having a clearer arranged therein. Fig. 7 is a left-hand side view, in section. Fig. 8 is a back side view, showing the clearer *q* and clearer-bar *q'*. Fig. 6 shows the cupping, forming, and punching die-plates.

The mechanism above the bed-plate, by which this improvement is effected, is made very much in the same way as presses now in use for other purposes; or, in other words, the actuating of the punch or former, the movement of the die-plate, and the means of lifting the clearers upward through the bed and die plates are effected by mechanism in common use. I therefore omit to describe in particular their construction, but for the sake of illustration have shown such parts in Figs. 3, 4, and 5.

a are V-shape guideways, secured upon each side of the bed-plate *b*. *c* are the die-plates, of three different patterns, and two or more in number, into which are formed two or more rows of dies, *d*, each of which plates are fitted between the guideways *a* so as to work closely and freely therein. These dies are designed to be made of equal distance lengthwise of the plates from center to center, and the centers of the end dies are designed to be just one-half the distance from the end, so that when two plates are placed end to end the distance from center to center of the end dies of each plate will be the same as those in the plates, so that as each

cross-row of dies are moved along successively under the punches or formers they will descend and press the blanks into the dies, or perform their proper function in each of the respective die-plates. *e* are steps or pins, made or formed on the plates *c* about equal distance apart and in position with the dies *d*, by means of which they are operated upon and moved successively into position. These plates may be made with two or more rows of dies lengthwise of the plate, when desirable, so as to receive the action of two or more punches or formers, *g*. These punches or formers (see Fig. 2,) *g*, are made and secured much in the usual way, except that they are provided with a center clearer-bar, *h'*, having a spring, *i*, arranged therein in such a manner as to hold the clearer-bar up, and also having an arm, *i'*, projecting back through and working in a perpendicular slit formed in the stock *h*, so that if any one of the eyelets adhere to the punch or former when it is raised from the die the arm *i'* will strike a detent or screw, *k*, and thereby cause the clearer to protrude from the lower end of the former and discharge the blank or eyelet therefrom.

The die-plate *c* is for the cupping operation, the first depression in the face of which is made about the same size as the blank *f*, which is placed therein, and by the action of the formers is forced downward into the dies *d*, and is formed into cup shape. (See Fig. 1.) The plate *c'* is for the forming operation. The first depression from the top surface is to hold the flange edge in the proper position to be forced down into the forming-die. The sides *x* of the second depression are straight, so that if there is any unequal projection of the upper or flange edge, the former, being made of a corresponding shape, will force the metal into its proper symmetrical shape. The plate *c''* is simply for holding the eyelets in position directly over the die *m* for punching out the end, which die *m* is arranged in the bed-plate directly under the die-plates and formers.

Now, it will be seen that by placing the blank in the depressions of the plate *c*, and then placing the die-plate into or between the guideways *a*, it may be moved along successively, one row of dies at a time, under and receive the action of punch or formers by means of the slide-block *n* and pawl *n'*, and while one plate is passing through the machine another

is being filled and introduced against the rear end of the first, so as to keep up a continuous action of the machine. These die-plates are filled and passed through the machine in each of the three operations in the same way, thus completing the eyelets in the most perfect and rapid manner.

This improvement may be made to operate in a circular form or revolving bed when desirable.

I believe I have thus shown the nature, construction, and operation of this improvement, so as to enable others skilled in the art to make and use the same therefrom.

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

1. The employment of the movable die-plates *c*, having two or more rows of dies, *d*, substantially as and for the purpose described.

2. The male and female dies, constructed and operating as described.

3. The employment of the clearers *g*, in combination with the die-plates *c*, arranged and operating substantially as and for the purpose described.

4. The employment of the slide-plate *n* and pawl *n'*, in combination with the steps or pins *e* and die-plates *c*, substantially as and for the purpose described.

5. In combination with the male and female dies, the clearer *h'*, substantially as described.

EDWIN B. BUTLER. [L. S.]

Witnesses:

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