L. E. Hicks,

Making Eyelets,

No. 7,839. Patented Dec. 17, 1850.

Fig. 1.

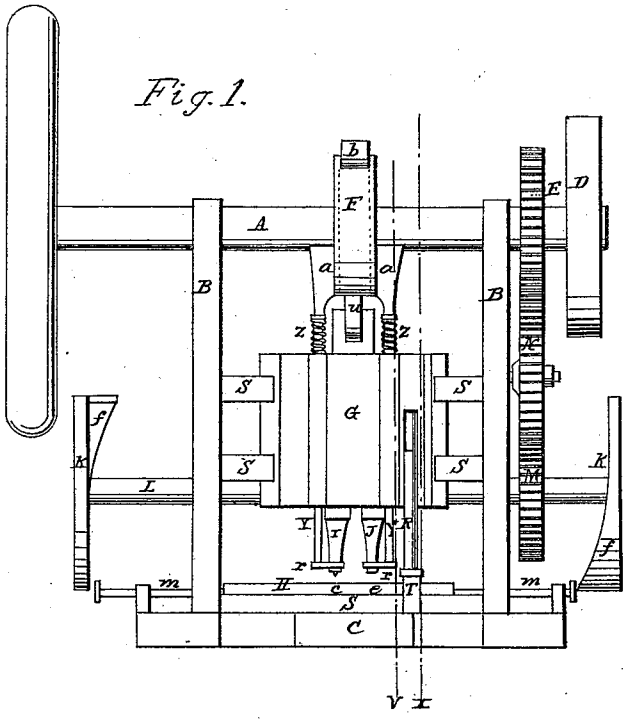


Fig. 2.

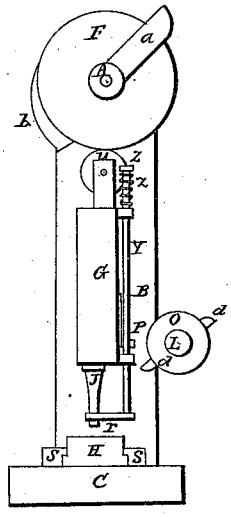


Fig. 3.

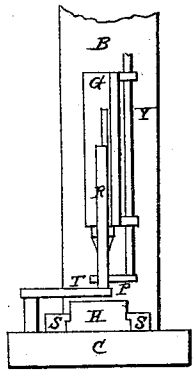


Fig. 4.

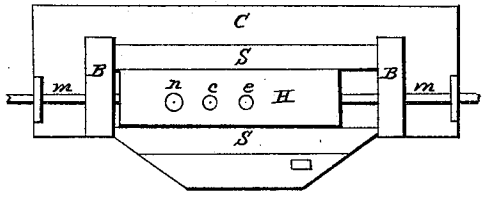


Fig. 5.

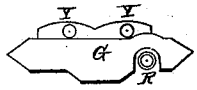


Fig. 6. Fig. 7. Fig. 8.



Witnesses:

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UNITED STATES PATENT OFFICE.

LUCIEN E. HICKS, OF BERLIN, CONNECTICUT, ASSIGNOR TO WM. A. CHURCHILL AND JAMES STANLEY.

MACHINE FOR MAKING EYELETS.

Specification forming part of Letters Patent No. **7,839**, dated December 17, 1850.

To all whom it may concern:

Be it known that I, LUCIEN E. HICKS, of Berlin, in the county of Hartford and State of Connecticut, have invented a new and useful Machine for Manufacturing Metallic Eyelets; and I hereby declare that the following is a full and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a front elevation. Fig. 2 is a vertical section on the line U V. Fig. 3 is a vertical section on the line W X. Fig. 4 is a horizontal section, presenting a vertical view of the base and sliding bolster with its dies and guides and the rods by which its position is changed. Fig. 5 is a horizontal section of the vertical slide. Figs. 6, 7, and 8 represent a disk-blank, a half-formed eyelet, and an eyelet finished as it leaves the machine.

The nature of this invention consists in so arranging and combining various mechanical elements and devices in a single machine as to facilitate the manufacture of metallic eyelets, the machine forming one eyelet complete by each revolution of the principal shaft.

A horizontal shaft, A, is mounted upon the head of two parallel posts, B B, the bottoms of which are attached to a horizontal base, C. One end of this shaft is furnished with a band-wheel, D, by which the machine is put in motion, also a gear-wheel, E, which communicates motion to other mechanism below. Upon the center of the shaft A is mounted a cam-wheel, F, (see Fig. 2,) which is furnished with three cams, two of which, *a a*, are attached to opposite sides or disks of the wheel, for purposes hereinafter described, and the other, *b*, is attached to the periphery of the wheel for the purpose of forcing downward at intervals the vertical slide G, to the bottom of which are attached two punches, I J, by which the eyelets are formed. Below these, and resting upon the base C, is a horizontal sliding bolster, H, in which are formed (or adjusted) two concave dies, *c e*, within which the eyelets are formed. The sliding bolster is made to vibrate or slide at intervals to the right and left alternately by means of two horizontal rods, *m m*, which are alternately forced against the ends of the sliding bolster by the wedge-shaped cams *f f*, which are attached to the centerward sides of the cam-wheels K K. These cam-wheels are mounted upon the two opposite ends of a horizontal cam-shaft, L, which has its bearings in boxes attached to the rear sides of the posts B, and is furnished with a gear-wheel, M, which receives motion from the gear-wheel E through an intermediate connecting-wheel, N. Upon the center of this shaft is mounted another cam-wheel, O, to the periphery of which are attached two opposite cams, *d d*, which at proper intervals elevate the vertical slide G by taking to a shoulder-plate, P, which is attached to the rear of the slide. This vertical slide and the sliding bolster H are governed in their rectilinear motions by properly adjusted guides S S. The two dies *c e* are adjusted at such a distance apart as to receive the two punches at the same time, and at an equal distance to the right, and on a line with the two dies, is a vertical tube, R, which serves as a hopper or feeder to the machine. This feeding-tube is not connected to the slide G nor bolster H, but is supported by a horizontal arm, T, and so adjusted that the bottom thereof is nearly in contact with the top of the bolster, that when the latter is moved to the right the die *e* receives from the tube a single blank only, which blank, when the bolster has removed to its left position, is ready for the operation of the punch J. At an equal distance to the left of the die *c* is a vertical aperture, *n*, which communicates with a receptacle below. Each punch passes through a horizontal clearer, *r*, and the two clearers are attached to the bottoms of two vertical rods, Y Y, which are furnished with helical springs Z Z, which tend to hold the rods and clearers in an elevated position; but they are at proper intervals depressed by the cams *a a*.

When this machine is put in motion, the feeding-tube being filled or supplied with disk-blanks, the die *e* passes to the feeding-tube, receives a blank, and returns. The punch J descends upon the blank, producing the form represented in Fig. 7, and raises it from the die, when by another movement of the sliding bolster to the right the die I is brought to a position directly under the half-formed eyelet, which, by the descent of the right clearer, is detached and is received by the die *c*, then, being carried to the left, its form is completed by the descent of the punch I, which pierces the bot-

tom and swages it to the form of a hollow cylinder with flange, as shown in Fig. 8. The eyelet, adhering to the punch, is again elevated till the aperture *n* is brought to a position to receive it, when it is detached by the descent of the left clearer and drops into the receptacle below. Upon the head of the slide G is mounted an anti-friction pulley, *u*. The punch I in its descent depresses its respective clearer, whereby is formed the flange upon the eyelet.

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

The sliding bolster constructed with its two dies *c* and *e* and aperture *n*, in combination with the feeding-tube, punches, and clearers, the whole being constructed, arranged, and operated substantially in the manner and for the purpose herein set forth.

L. E. HICKS.

Witnesses:
JOHN STANLEY,
SETH E. CASE.