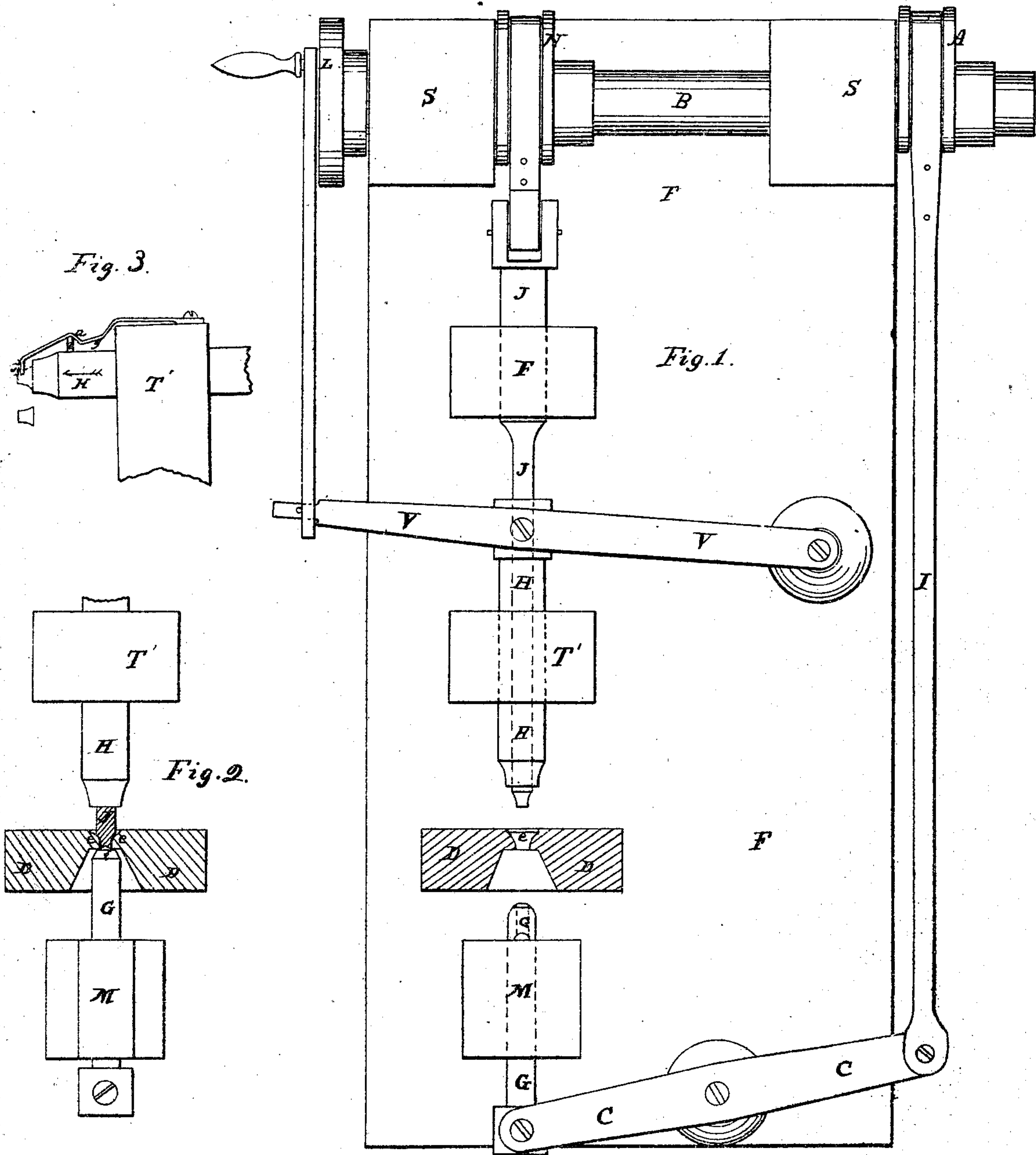


D. K. Hoxsie.

Making Eyelets.

N^o 72044

Patented Dec. 10, 1867.



*Witnesses: William Brownell
Chas C. Hinson*

Inventor: David K. Hoxsie

United States Patent Office.

DAVID K. HOXSIE, OF PROVIDENCE, RHODE ISLAND.

Letters Patent No. 72,044, dated December 10, 1867.

IMPROVEMENTS IN MACHINES FOR MAKING EYELETS.

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, DAVID K. HOXSIE, of the city and county of Providence, and State of Rhode Island, have invented certain new and useful Improvements in Machines for Making Eyelet; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan of my improved machine,

Figure 2 is a plan of a modified construction of a portion of the same, and

Figure 3 is a side elevation of the cutting-punch, and its attachment for removing an adhering eyelet therefrom.

Similar letters indicate corresponding parts in all the figures.

My said invention consists of a combination, in an eyelet-making machine, of a punch, of the form of the interior of the eyelet, a die of the form of the exterior of the eyelet, and a tubular cutting-punch at the rear of said die for cutting out the closed end of the eyelet; also, of a modified construction of the said eyelet-forming punch, with a hollow cavity in the end, and an annular cutting-edge at the end, in combination with a soft-metal or other surface on the end of the rear punch for the said cutting-edge to cut against, for the purpose of cutting out the closed end of the eyelet after it has been formed in the die by the forming-punch; also, in combination with the eyelet-forming punch for shaping the eyelet, or with the cutting-punch which cuts out the planchet from which the eyelet is formed, a spring or snapper, for detaching the eyelet from the end of said punches if it should adhere thereto from any cause—all as hereinafter set forth.

In the drawings, F is the frame of the machine. S S are stands, in which are formed bearings for the driving-shaft B. T T' are stands, in which the cutting and forming-punches H and J slide, H being operated by the crank L on said shaft, through the medium of the connecting-rod f and the lever V, and the punch J being operated directly from the eccentric N on the shaft. D is the stand in which the die e is held, which shapes the exterior of the eyelet. In the stand M, the tubular cutting-punch G slides up to the rear of the die by means of the lever C, the connection I, and eccentric A, on the driving-shaft.

The cutting-punch H encloses the eyelet-forming punch J, and, in connection with the sharp cutting-edge of the entrance of the die e, serves to cut from sheet metal the disk or planchet from which the eyelet is to be formed. The punch J, at the end, is shaped like the interior of the eyelet, and after the planchet has been cut by the punch H, the punch J carries it down into the die e, which is of the exact shape of the exterior of the eyelet, and the eyelet is thus formed between the punch and the die, in a manner well understood by those who are acquainted with eyelet-making machines, all of the parts above described, and their operation, being common and well known. After the planchet has been carried down into the die, but just before the punch J has completed its movement, the tubular cutting-punch G meets the end of the eyelet on the punch J, and is forced against the eyelet, and, by the combined movement of the two punches G and J, the closed end of the eyelet is cut out, after which the two punches are withdrawn from the die, with the completed eyelet clinging to the eyelet-shape of the end of punch J, from which it is stripped off by the withdrawal of said punch into the surrounding punch H, and the eyelet falls beneath the punches, upon the frame, or into a receptacle for the purpose. Sometimes, the eyelet, after it has been stripped from the punch J, as described, will stick to the end of the punch H, owing to the oil with which the stick is lubricated, or from some other cause, and it becomes necessary to detach the eyelet from the end of the punch, to avoid interfering with its subsequent operation. This I accomplish by means of the spring or snapper g, fig. 3, attached by one end to the stand T', and having an incline at a, which bears against the top of the stud t, on the punch H, at the proper time, and the end of said spring being bent at right angles, so as to hit the eyelet on the end of the punch, as shown in dotted red lines; and being thus constructed and arranged, the movement of the punch H in the direction indicated by the arrow to the position shown causes the stud t to pass the incline a, and permits the spring or snapper g to react, and its end to hit the eyelet smartly and detach it from the punch; and when, after this action, the punch H again advances to perform its function, the stud t is carried against the incline a, and by that means the end of the spring is lifted out of the way of the punch until its offices are required again, as before described.

In lieu of the cutting-punch G, constructed as above described, the eyelet-forming punch J may be formed

with a cutting-edge on the end, by making a conical cavity in the end of the punch, as shown in fig. 2; and when thus constructed, the end of the rear punch G may be shod with a surface of brass, *l*, as shown by red lines, so that the cutting-edge of the punch J may cut out the closed end of the eyelet by forcing the brass end of punch G against said closed end, as it is thrust through the rear end of the die, in the manner before explained.

It will thus be seen that, under my invention, it is immaterial whether the cutting-edge is formed upon the punch G and the punch J made solid, or whether the punch J is provided with the cutting-edge and the end of the punch G shod or made solid, for the result produced in either case will be the same, *i. e.*, the closed end of the eyelet in the forming-die will be cut out by the combined movement of the two punches.

Having thus described my invention, I wish it understood that I do not claim either of the punches, H, J, or G, separately, nor do I claim the die *e* in combination with the punches H and J, as this has been previously known and used.

What I claim is—

The combination of the eyelet-forming punch J, the eyelet-forming die *e*, and the punch G, arranged and operating substantially as herein described, for the purpose set forth.

I also claim, in combination with the eyelet-forming punch J and cutting-punch H, as described, the spring or snapper *g*, arranged and operating substantially as described, for the purpose specified.

DAVID K. HOXSIE.

Witnesses:

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