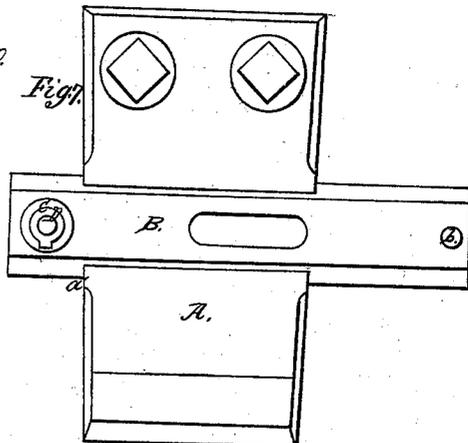
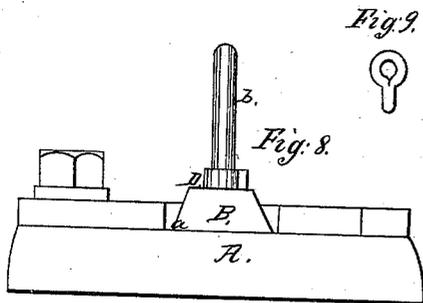
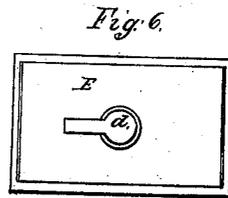
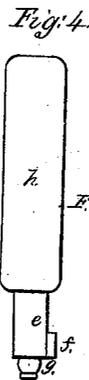
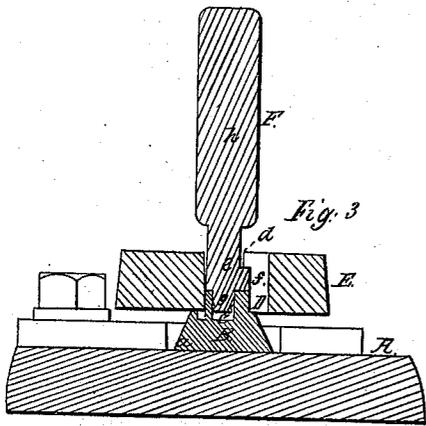
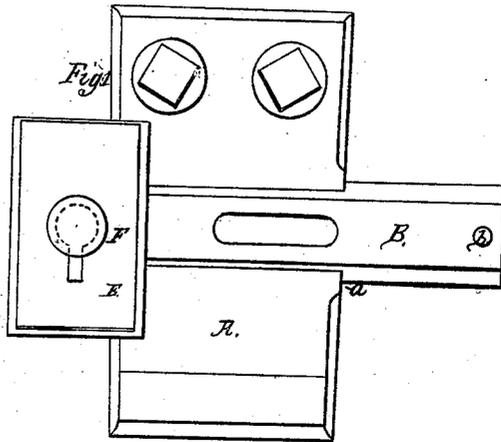
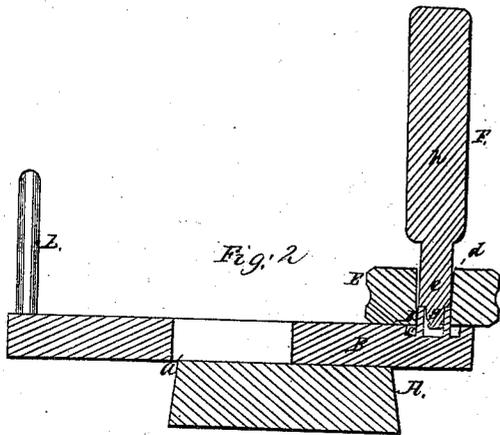


V. Draper.

Swaging the Swivel-Eyes of Watch Chains.
No. 80,535. Patented Aug. 4, 1868.



Witnesses.
J. Draper.
J. R. Smith.

Inventor.
Virgil Draper.
By his attorney.
R. W. Kddy.

United States Patent Office.

VIRGIL DRAPER, OF NORTH ATTLEBORO, MASSACHUSETTS, ASSIGNOR TO
EDMUND J. RICHARDS, OF SAME PLACE.

Letters Patent No. 80,535, dated August 4, 1868.

IMPROVED APPARATUS FOR SWAGING THE SWIVEL-EYES OF WATCH-CHAINS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL PERSONS TO WHOM THESE PRESENTS MAY COME:

Be it known that I, VIRGIL DRAPER, of North Attleboro, in the county of Bristol, and State of Massachusetts, have invented a new and useful Machine for Forming the Blanks of Watch-Chain Swivel-Eyes; 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,

Figure 2 a longitudinal section, and

Figure 3 a transverse section of it.

Figure 4 is a side view, and

Figure 5 a lower end view of the punch.

Figure 6 is a top view of the swaging-die plate.

Figure 7 is a top view, and

Figure 8 a side elevation of the sliding-bed die and its carrier, and the supporter thereof.

Figure 9 is a top view, and

Figure 10 an edge view of a swivel-eye blank, as made preparatory to being swaged and formed by the mechanism constituting my invention.

Figure 11 is a top view, and

Figure 12 an edge view of such blank as it appears after having been swaged and formed by the said mechanism.

In the drawings, A denotes the supporter of the carrier B of the bed-die. This supporter has a dove-tailed groove, *a*, made across it to receive the carrier B, which is a bar dove-tailed in transverse section, to fit to and slide through the groove *a*. A handle, *b*, extends up from the carrier.

The bed-die D is represented as arranged in a circular cavity, *c*, made in the carrier. This bed-die, formed as represented, projects above the upper surface of the carrier, so as to enter the swaging opening *d* of the swaging-die plate E. Such opening, formed as represented in top view in fig. 6, tapers a little as it descends. The purpose of the said taper of the opening or die-collar is to gradually swage the eye-blank while passing through it, and, with the bed-die D and the punch F, reduce the said blank from the form shown in figs. 9 and 10, to that described in figs. 11 and 12.

The main operative part of the punch consists not only of a cylinder, *e*, and a short prismatic projection, *f*, extending from the side of such cylinder, but of a short round pin, *g*, extending from the lower end of the cylinder. Such cylinder projects from a head or shank, *h*.

The mechanism above described is to be used in a "drop-press." In using it, the carrier is first to be introduced into its supporter, after which the swaging-die plate should be arranged over the die of the carrier, so as to have the said die within the swaging opening of the said plate. Next, the blank is to be placed over the said opening, and the part *g* of the punch should be introduced into the blank. Next, one or more powerful blows are to be given upon the head of the punch, so as to force the blank into the swaging-die, and down upon the bed-die, and reduce the said blank to the form exhibited in figs. 11 and 12.

Next, the die-plate E, with the punch in it, is to be raised off the bed-die, and the carrier is to be drawn back, so as to allow the die-plate to rest on the supporter A. Next, the punch is to be forced down so as to expel the swaged blank from the opening of the die-plate, and into the dove-tailed groove *a*, after which the die-plate and punch are to be raised off the supporter, and the carrier is to be advanced to place for again co-operating with the die-plate and punch, in manner as hereinbefore described. The advance of the carrier operates to force the swaged blanks along through the groove *a*, and crowd them off the supporter.

I claim the combination of the grooved supporter A, the carrier B, the bed-die D, the swaging-die plate E, and the punch F, such being constructed for use in manner and for the purpose substantially as described.

VIRGIL DRAPER.

Witnesses:

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