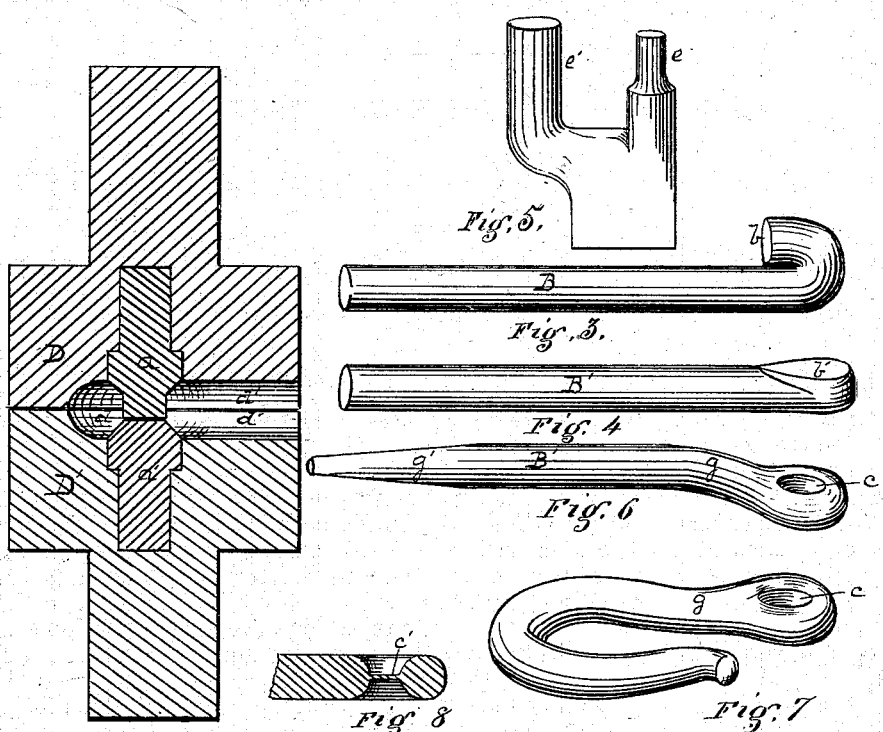
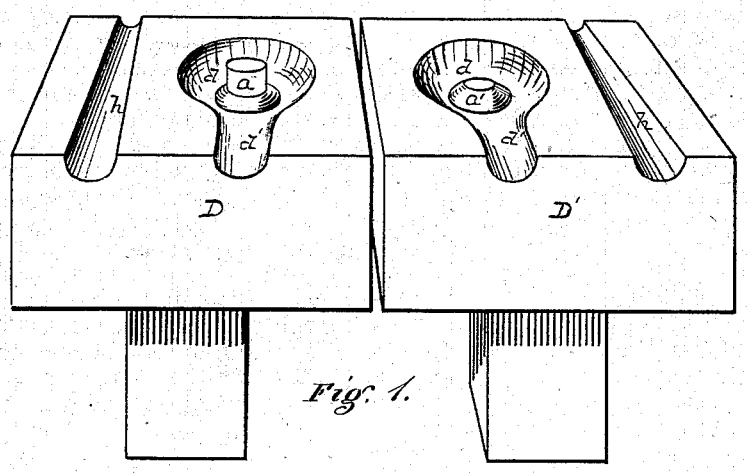
J. ROBSON.

MANUFACTURE OF HOOK-EYES.

No. 186,437. Patented Jan. 23, 1877.





Witnesses

Robt Ashmead

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UNITED STATES PATENT OFFICE.

JOHN ROBSON, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN THE MANUFACTURE OF HOOK-EYES.

Specification forming part of Letters Patent No. **186,437**, dated January 23, 1877; application filed April 25, 1876.

To all whom it may concern:

Be it known that I, JOHN ROBSON, of Pittsburg, county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Improvement in Manufacture of Hook-Eyes; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which—like letters indicating like parts—

Figure 1 is a perspective view of the faces of the dies employed. Fig. 2 is a sectional view thereof, with the dies closed together face to face. Figs. 3, 4, 6, 7, and 8 represent successive stages or steps in the operation of manufacture; and Fig. 5 represents a tool or device used in the operation.

My invention relates to the manufacture of wrought-iron hooks or other like devices, in which an eye is desired at one end. A round rod is cut into blanks B, of the desired length, and a short portion, *b*, of the end is bent over, as in Fig. 3. This bent end is then flattened down, as at *b'*, Fig. 4, preparatory to the forging of an eye therein transverse to the plane of flattening. For the purpose of forging this eye I make use of a pair of hammer-dies, D D', and in each of such dies make a cavity, *d d'*, of the size and shape of one-half of the eye end of the hook to be made. In the center of the round part of each cavity I insert the steel die-pins *a a'* in such position that when in use their outer ends will operate in line with each other, and shall be capable of coming together end to end, or nearly so. These dies D D' being arranged in connection with suitable machinery to give one or both a reciprocating motion, the flattened end *b'* is inserted along the cavity *d'*, with the center of the flat part *b'* directly in line with the die-pins *a a'*. Then, by a series of blows, the eye *c* is forged, the surrounding metal being spread out into the cavity *d*, so as to be properly shaped thereby; but in thus forming the eye a thin web or wafer of metal, *c'*, Fig. 8, will be left between the ends of the die-pins *a a'*. To remove this any suitable mandrel or punch may be employed, one such (suitable to be set in an anvil) being shown in Fig. 5, where *e* represents the mandrel. The eye of Fig. 8 being placed on the mandrel *e* a blow of the hammer will cause the web *c'* to be cut out. The shank B' then being brought against the post *e'*, another blow of the hammer, or the hand-force of the workman, will give it the desired curve near the eye, as shown at *g*. Either then or before I draw a point, *g'*, on the end of the shank B' by the use of the taper grooves *h* in the dies D D', and then the end being bent, as shown in Fig. 7, or to any other desired form, the hook and eye is complete and ready for use.

The die-pins *a a'* may be made solid with the dies D D'; but for convenience of renewal I prefer to make them separate.

I claim herein as my invention—

An improvement in the mode of making metallic eyes by folding over the end of the blank, flattening down the folded part, and forging the eye through the flattened part transverse to the plane of the flattened end, substantially as set forth.

In testimony whereof I have hereunto set my hand.

JOHN ROBSON.

Witnesses:

CLAUDIUS L. PARKER,

H. D. GAMBLE.