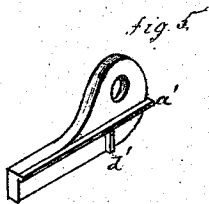
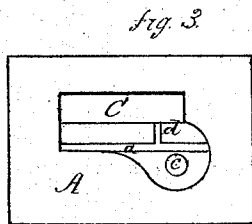
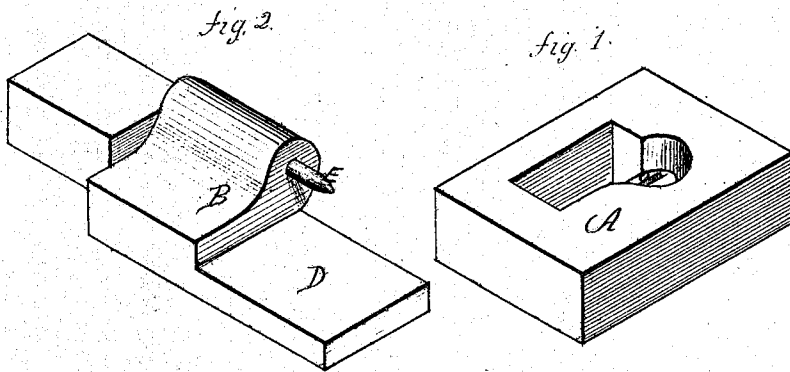


*J. Evans,*

*Making Springs.*

*No. 104,440.*

*Patented June 21, 1870.*



*Witnesses*  
*J. H. Conway*  
*A. J. Tibbitts*

*John Evans*  
*Inventor*  
*By his Attorney*  
*John E. Earle*

# United States Patent Office.

JOHN EVANS, OF NEW HAVEN, CONNECTICUT.

Letters Patent No. 104,440, dated June 21, 1870.

## IMPROVED DIE FOR FORGING EARS FOR CARRIAGE-SPRING HEADS.

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, JOHN EVANS, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Dies for Forging Ears for Carriage-spring Heads; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent in—

Figure 1, a perspective view of the die;

Figure 3, a perspective view of the follower;

Figure 3, a top view of the die; and in

Figure 4, the blank previous to the operation;

Figure 5, the blank after the operation.

This invention relates to an improvement in dies for forging ears for carriage-spring heads, the object being to prepare the ears for attachment to the springs previous to welding, that is to say, to form ribs upon one side as a guide for the proper relative position, and also as a means for attachment to the heated spring, by compressing the said ribs into the heated metal; and

The invention consists in a die in which grooves are formed corresponding to the proposed ribs on the ear, combined with a follower for striking the metal into the die.

A is the die, and

B, the follower.

Through the die A, a recess, C, is formed, and on

the follower a projecting end, D, corresponding to and so as to work freely in the said recess, serving as a guide for the follower.

The die is formed the shape of the blank, and with a longitudinal groove, *a*, and transverse groove *d*, corresponding to the ribs required on the ear, and the perforation *c* with a corresponding guide-pin, E, on the follower.

The blank is first formed as seen in fig. 4, preparatory to being set into the die, it being thicker at that part where the rib is to be formed, in order to give the requisite metal.

Heated and laid into the die, the follower descends, the pin E passing through the perforation in the ear to preserve the perforation, the follower strikes hard upon the metal, forcing it into the grooves, and producing the blank seen in fig. 5, with the ribs *a* and *d*.

It will be observed that right and left dies are essential in order to produce the ears required for each head.

I claim as my invention—

The improved die A and follower B, the former having the recess C, longitudinal groove *a*, transverse groove *d*, and perforation *c*, and the latter having the projecting end D and the pin E, as and for the purpose set forth.

JOHN EVANS.

Witnesses:

A. J. TIBBITS,

JOHN H. SHUMWAY.