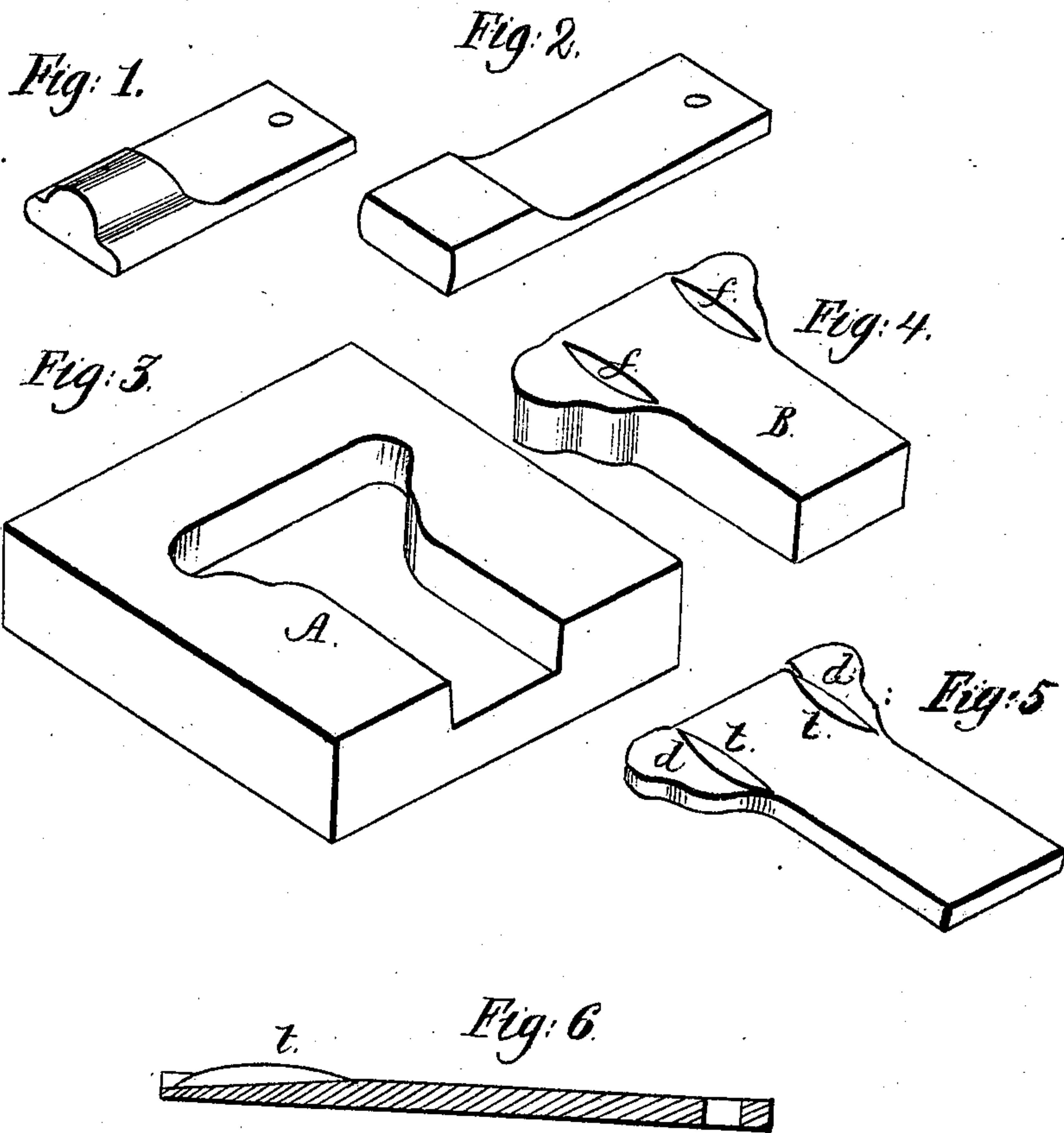


B. T. Henry.

Heading Carriage Springs.

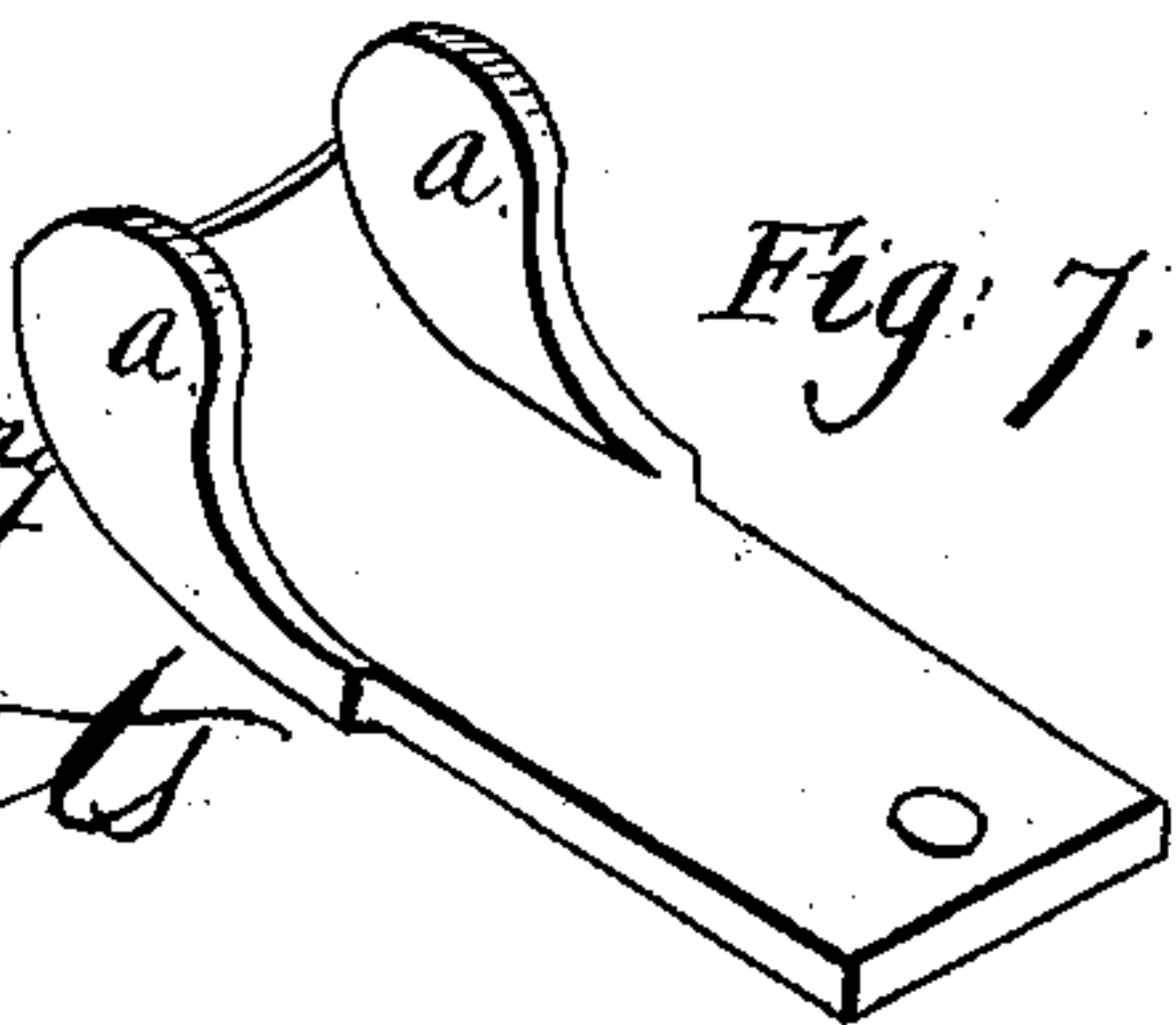
Nº 98,376.

Patented Dec. 28, 1869.



Witnesses:

J. H. Shuman
J. E. Ebbets



Inventor:
B. T. Henry

Atty.
John E. Earl

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B. T. HENRY, OF NEW HAVEN, CONNECTICUT.

Letters Patent No. 98,376, dated December 28, 1869.

IMPROVED METHOD OF FORMING THE HEADS OF CARRIAGE-SPRINGS.

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, B. T. HENRY, of New Haven, in the county of New Haven, and State of Connecticut, have invented a new Improvement in Heading Carriage-Springs; 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—

Figures 1 and 2, the blanks, preparatory to heading;
Figure 3, the die;
Figure 4, the follower;
Figure 5, the spring-head, as it comes from the die;
Figure 6, a central section of the same; and in
Figure 7, the spring-head complete.

This invention relates to an improvement in forming the ends of steel or elliptic springs for carriages. Heretofore this has been done by welding the ears on to the leaf of the spring.

The object of my invention is to avoid the necessity of welding, and consists in leaving sufficient metal at the end of the spring, after the spring is drawn down, and then, by means of suitable dies, to strike the metal at the end of the spring into shape for the ears, and at the same time to form upon the surface, at the point where the angle is formed in turning the ears, projections, to give the requisite metal required to completely fill and form the angles.

The spring is drawn down from a bar of metal sufficiently thick, that at the end, as in figs. 1 or 2, metal will be left to form the ears *a a*, fig. 7. The end is then heated and placed in a die, A, which is of the form required for the head before the ears are turned, and the follower B is then struck into the die, upon the heated metal, with sufficient force to spread the metal and form the ears, as at *d d*, fig. 5.

The follower B has in its surface recesses *f f*, so as to form projections *t t*, fig. 5, at the point where the angle is formed in turning the ears, the projections being shown in section, fig. 6; then, by another suitable die, (may be the common die,) the ears are turned up, and the head formed, as seen in fig. 7.

While I prefer to use the die A, it is not essential, as the follower B may strike the blank upon a perfectly flat surface, and form the projections the same as with the die; but such a process necessitates trimming the ears after the operation of the follower B; hence my preference for the die A.

I claim, as my invention—

The method herein described of forming the heads of carriage-springs.

B. T. HENRY.

Witnesses:

A. J. TIBBITS,
J. H. SHUMWAY.