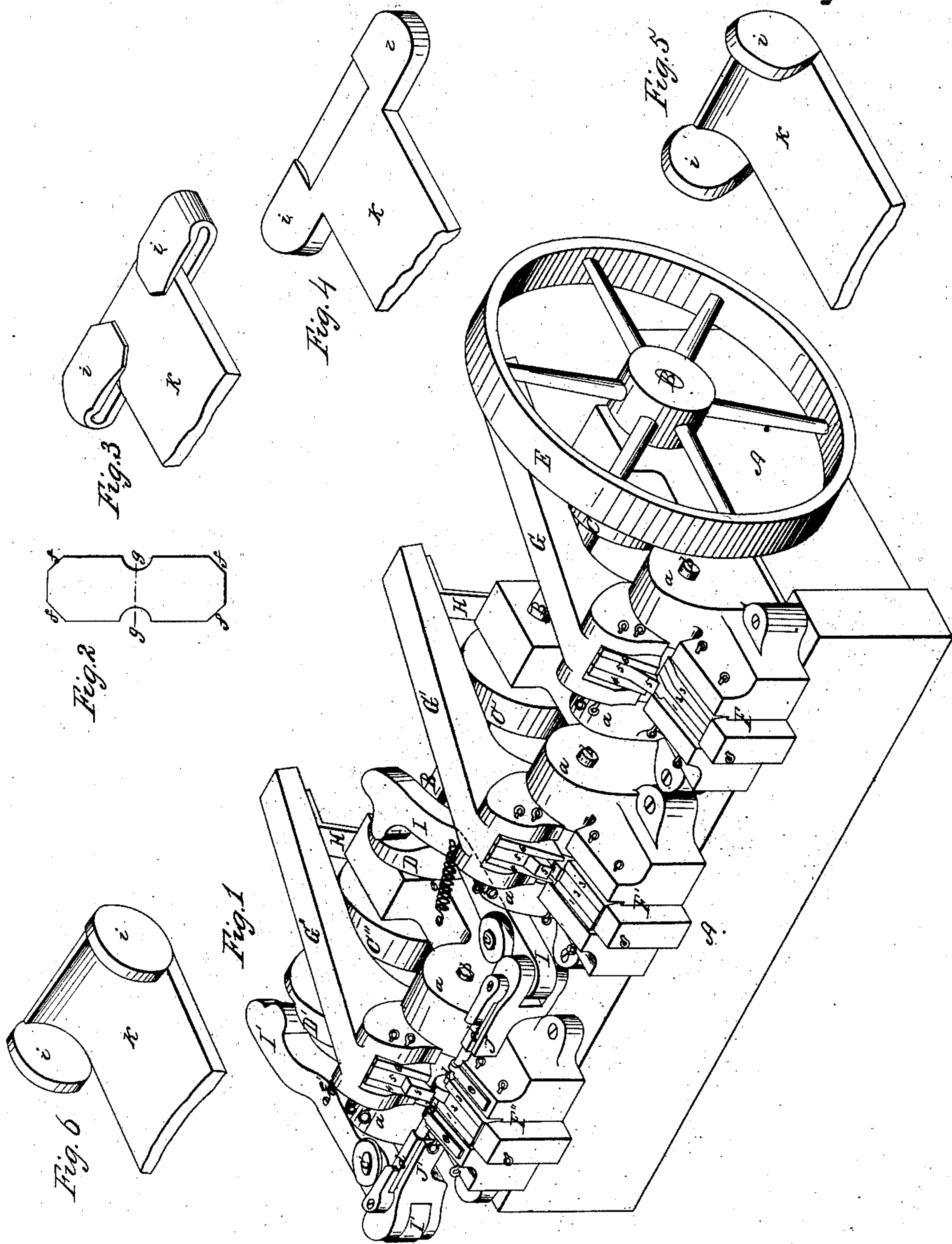


This specification in this note
be not in print.

S. H. Hartman,
Making Springs,
N^o 20,268.
Patented May 18, 1858.



UNITED STATES PATENT OFFICE.

SAML. H. HARTMAN, OF PITTSBURG, PENNSYLVANIA.

FORMING THE HEADS OF CARRIAGE-SPRINGS.

Specification of Letters Patent No. 20,268, dated May 18, 1858.

To all whom it may concern:

Be it known that I, SAMUEL H. HARTMAN, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented
5 certain new and useful Improvements in the Manner of Making Sockets on the Heads of Carriage and other Springs; and I do hereby declare the following to be a full, clear, and
10 exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a perspective view of the machine by which, the series of operations necessary to form the socket, is effected; and Figs. 2, 3, 4, 5, 6, represent in
15 their order the several changes effected in the socket or head, in the course of its construction.

20 My invention consists in forming a socket (or what is sometimes called a head) upon the heads of carriage springs, by a series of mechanical operations, as will be explained in connection with the accompanying drawings, and the letters of reference thereon.

Fig. 1, represents an organized machine for forming the socket, from the blank or blanks: viz: A, is the bed or frame of the machine, upon which is supported a shaft B,
30 carrying five cams to wit: three large ones C, C', C'', and two smaller ones D, D'. On the end of this shaft, is a fly or belt wheel E, by which it may be set in motion. On the front of the frame A, are arranged the die
35 or anvil blocks F, F', F'', furnished respectively with the proper adjustable and removable dies, to effect the necessary changes of form, in bringing the blank up to the finished socket, as will be described
40 in connection with the article itself. To lugs a, a, &c., on the die blocks, are hung, by the pivot bolts b, the levers G, G', G'', which carry in their front ends adjustable and removable counter dies, that work in
45 connection with those in the die blocks F, F', F'', respectively. There is a yoke or strap H, on each of the levers, by which they are connected to their respective cam—the cams being so arranged on their shaft as
50 that they shall work their levers at different periods. The two smaller cams D, D', operate respectively two levers I, I', which are

pivoted to the main frame at the points c, c'. The front ends of these levers I, I', carry die blocks J, J', to which are connected dies
55 d, d', that effect an important action in the finishing of the socket. e, e', are coiled springs, for holding the levers to their cams.

It will be perceived that, the dies in the die or anvil blocks F &c., are composed of
60 three pieces 1, 2, 3; and that the counter dies in the levers G, &c., are also formed of three pieces 4, 5, 6. The object of this, and of their adjustability, and removability, is that
65 different sized sockets may be made on the same machine, by simply removing the middle sections (2, 5), and substituting others for them and then bring the side dies or
70 sections up to the center ones. This adapts the machine to the various sizes of springs to be made.

The operation of forming the socket, in connection with this machine is as follows: Plates of steel are first punched out of the
75 form shown at Fig. 2, with the corners f clipped off, and the two semicircular recesses g, also cut out so that said plate shall fold easily at the line g, g, and when folded, show all its corners cut or rounded off, thus
80 removing the excess of metal, that would otherwise prevent the ears or lugs of the socket from assuming a circular form. The plates thus cut and bent into a clip i (as
85 shown at Fig. 3,) are placed on the end of the straight steel bar K, which forms the head or leaf of the spring and by being struck with a hammer will retain that position. It is then heated and put under the
90 action of the die and counter-die, of F, and G, which welds the clips to the bar, and gives them the form shown in Fig. 4. It is then subjected to the dies and counter dies
95 of F', and G', which gives it the form shown at Fig. 5; and finally to the dies, and counter dies, d, d, in the die blocks J J', as well as those in F'' and G'', when they are finished and in the form shown at Fig. 6.

I am aware that, sockets have been wrought on head plates for springs, partly
100 by hand, and partly by machines. I complete the entire socket by machine work alone, and by a series of mechanical operations which very much expedites the process, and makes a perfect article.

Having thus fully described the nature and object of my invention, what I claim therein as new, and desire to secure by Letters Patent is—

- 5 Forming the head or socket, on the head plate of a spring, by subjecting them to the action of the dies and counter-dies, in the

die blocks F, F', F'', and the levers G, G', G'', in the order of their sequence substantially as herein represented and described.

S. H. HARTMAN.

Witnesses:

A. B. STOUGHTON,
E. COHEN.