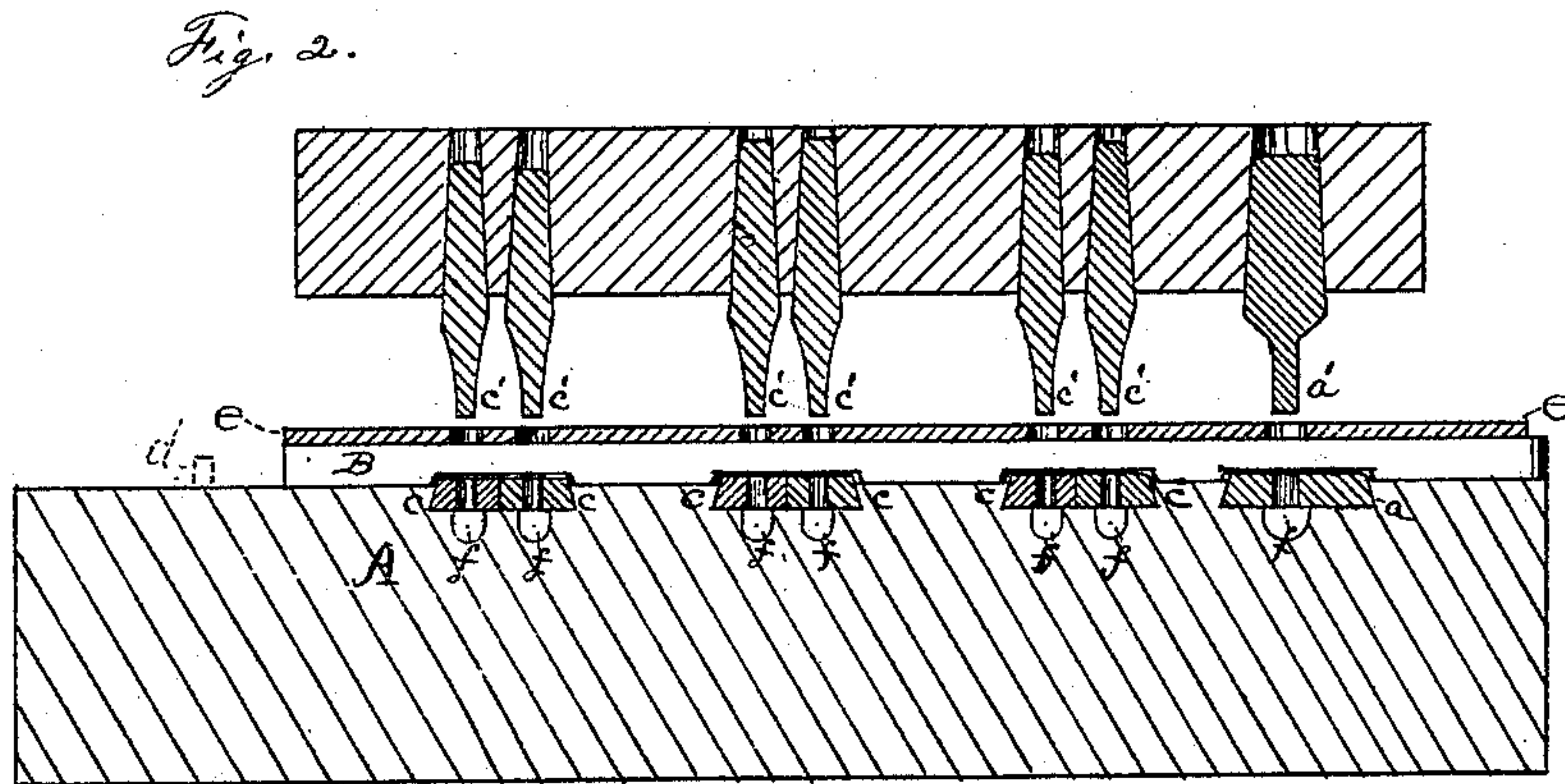
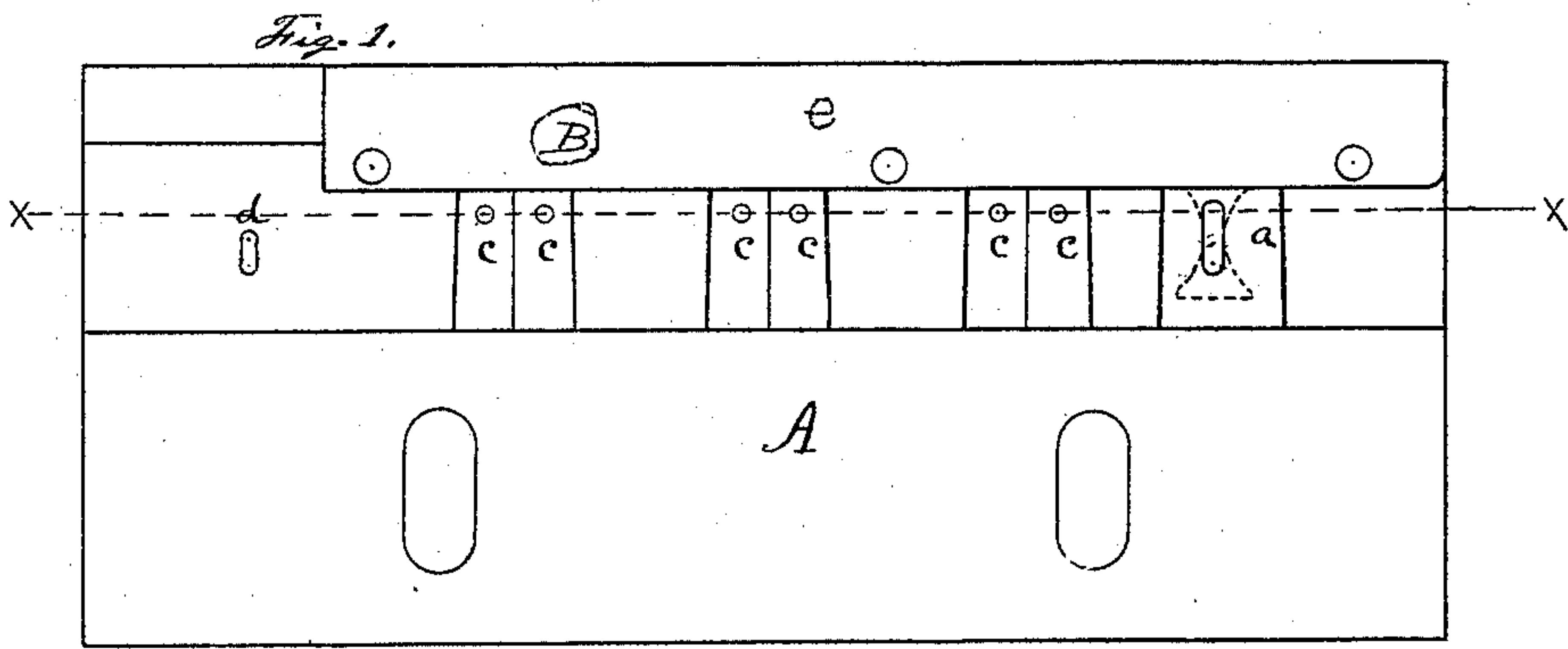


*P. Brooks,*  
*Punching Corset Springs.*  
*No. 113,737.      Patented Apr. 18. 1871.*



WITNESSES.  
*H. S. Bartholomew*  
*C. A. Shepard.*

INVENTOR.  
*Peter Brooks*  
*By James Shepard atty.*



# UNITED STATES PATENT OFFICE.

PETER BROOKS, OF WATERBURY, CONNECTICUT, ASSIGNOR TO CARRINGTON MANUFACTURING COMPANY, OF SAME PLACE.

## IMPROVEMENT IN MACHINES FOR PUNCHING CORSET-SPRINGS.

Specification forming part of Letters Patent No. 113,737, dated April 18, 1871.

*To all whom it may concern:*

Be it known that I, PETER BROOKS, of Waterbury, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in the Manufacture of Corset-Springs, of which the following is a specification.

My invention consists in the improved dies for making corset-springs, arranged as hereinafter more fully described, whereby I am enabled to punch the holes in and cut off said springs much more accurately and rapidly than has hitherto been done.

In the accompanying drawings, Figure 1 is a plan or top view of my invention; and Fig. 2, a vertical section of the same on line *x x*, and with the proper punches over the same.

A designates a bed in which the dies are arranged.

*a* designates a die for cutting a division-aperture between each spring, to mark the place for cutting off the springs. This die makes an aperture in the center of the strip of steel of which the springs are formed, leaving sufficient metal on each side to prevent the steel being entirely severed at this point only by design. If desired to sever the steel at this point, the die would be made wider from front to rear and of the form indicated by the broken lines near the die *a* in Fig. 1.

*c c* designate dies for cutting the rivet-holes by which the usual clasp is riveted to the spring. One-half of the springs are punched with only one hole immediately opposite the two rivet-holes, for the purpose of securing the usual button to match the clasp. For such springs the double dies *c c* and punches *c' c'* are removed and replaced by single ones for cutting only one hole.

*d* designates a gage-pin for gaging the length of the springs; B, the back gage, to guide the edge of the steel; and *e*, the take-off.

*c' c'* and *a'* designate the punches for the dies *c c* and *a*, respectively, while *f* designates a cavity for conducting the punchings or slugs to the rear of the bed A. The gage-pin *d* is placed forward of the line through the center of the dies *c c*, by which arrangement the holes cut by said dies will not catch on the gage-pin *d* as the steel is passed by said pin.

The operation is as follows: Steel is taken

from a long coil or strip, and of the proper width to form a spring, and placed with one edge against the gage B and its end against the pin *d*, when the punches are caused to descend and cut holes to correspond with the several dies. The steel is then drawn along and the aperture cut by the die *a* is placed over the gage-pin *d*, when the punches again descend and all the holes for the next spring and another division-aperture are punched, and so on until the whole strip or roll of steel is passed through the dies. By making the die *a* less from front to rear than the width of the steel the same is left connected in one continuous ribbon, so that it can be hardened and tempered to the best advantage. After the strip of steel is tempered, the metal on each side of the aperture made by the die *a* is removed, when the spring is ready for the finisher.

If desired, the die *a* might be placed at the left of the other dies, in which case the gage-pin *d* would be moved the length of one spring farther to the left. The die *a* may also be made so as to be adjustable to and from the smaller dies for cutting different-sized springs.

By arranging the die *a* for the division or cutting-off aperture in such manner that it operates simultaneously with the other dies, all the rivet or button holes are in their proper places upon the springs, which are also all of uniform length.

The dies *c c*, instead of being formed in one piece of metal, as usual, are each of them made in a separate piece, said pieces being formed tapering from front to rear, (see Fig. 1,) and with their meeting or adjacent edges straight and square, and their outer edges beveled, as shown in Fig. 2. These dies *c c*, of the exterior form above described, and with the circular cutting-surface in each, are fitted in dovetailed recesses running from front to rear through the bed A. In drilling the holes for the cutting-surface of the dies *c c*, the drill sometimes runs a little, so that one of said holes stands slightly forward of the other. By making the dies *c c* in separate pieces and tapering, as shown and described, one die may be driven forward and the other backward until the cutting-holes in both dies are at an equal distance from the gage B, whereby the

clasp will be secured squarely upon the corner-springs.

I claim as my invention—

1. Jointly, the lower die-block having the several dies, *c c c c c c a*, and gage-pin *d*, secured thereto, and the upper punch-box having the punches *c' c' c' c' c' c'* and *a'*, the whole operating together as and for the purpose set forth.

2. The arrangement of the dies *c c*, each die

being constructed of a separate piece, tapered as described, and both fitted in the dovetailed recess running from front to rear through the die-bed *A*, whereby either of the said dies may be adjusted forward or backward, as and for the purpose described.

PETER BROOKS.

Witnesses:

JAMES SHEPARD,  
C. A. SHEPARD.