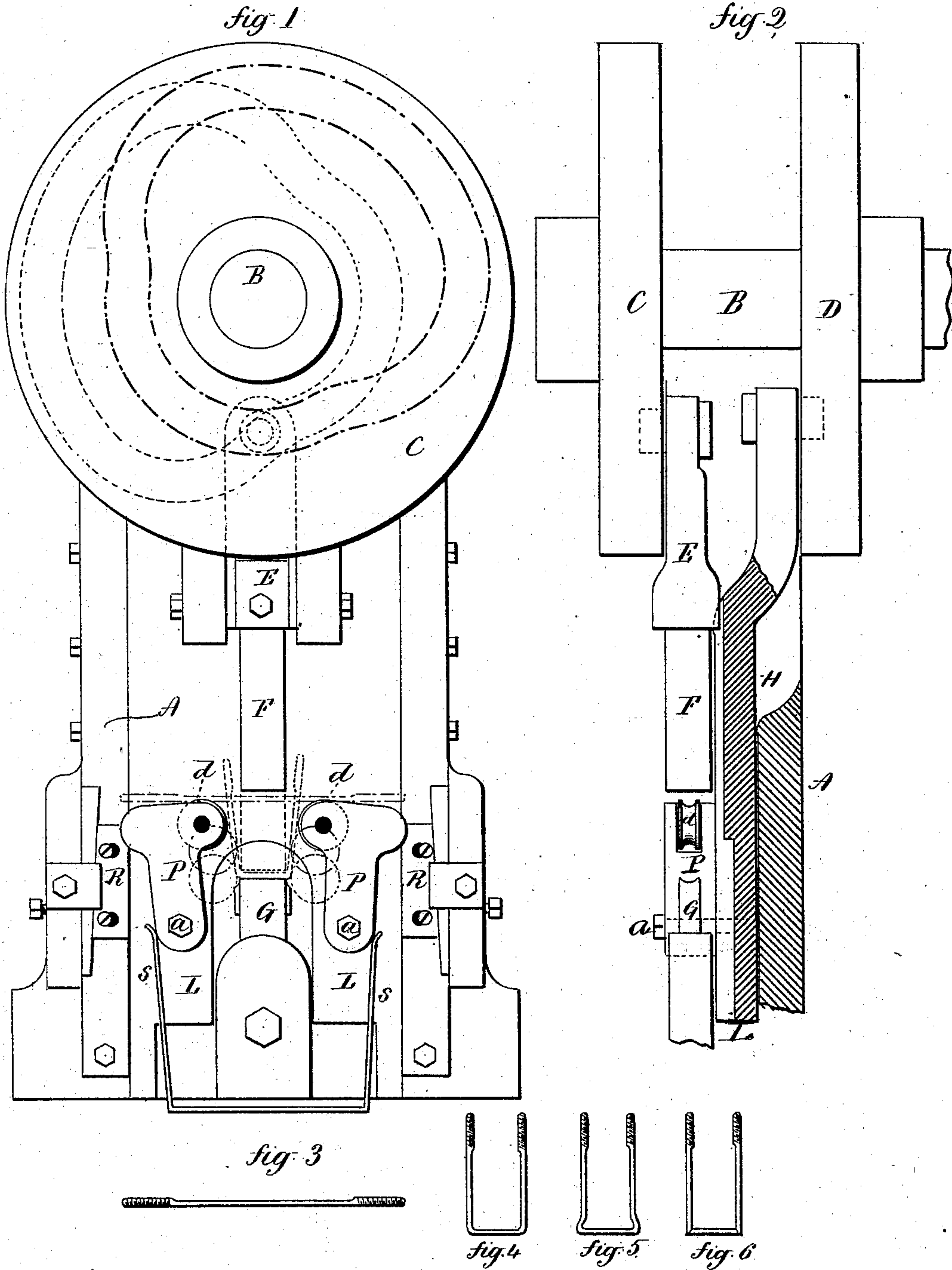


(No Model.)

L. T. BULLEY & S. MOORE.  
Machine for Making Carriage Clips.  
No. 238,848. Patented March 15, 1881.



Witnesses:

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# UNITED STATES PATENT OFFICE.

LOUIS T. BULLEY AND STILLMAN MOORE, OF NEW HAVEN, CONNECTICUT,  
ASSIGNORS TO C. COWLES & CO., OF SAME PLACE.

## MACHINE FOR MAKING CARRIAGE-CLIPS.

SPECIFICATION forming part of Letters Patent No. 238,848, dated March 15, 1881.

Application filed December 7, 1880. (No model.)

*To all whom it may concern:*

Be it known that we, LOUIS T. BULLEY and STILLMAN MOORE, of New Haven, in the county of New Haven and State of Connecticut, have  
5 invented a new Machine for Making Carriage-Clips; and we 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  
10 description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, front view; Fig. 2, sectional side view; Fig. 3, the blank from which the clip is  
15 shaped, Figs. 4, 5, and 6 illustrating the different operations.

This invention relates to an improvement in machines for shaping the article of carriage-hardware known as "carriage-axle clips," the  
20 object of the invention being the construction of a machine which shall operate automatically to bend the blank and completely fill and shape the angles at the bends.

The clip illustrated in this case is such as  
25 shown in Fig. 6, and in which the back is straight and the angles right angles. In simply bending the blank seen in Fig. 3 it leaves the angles rounded, as seen in Fig. 4.

This machine is designed to shape the clip  
30 and fill out these angles; and the invention consists in the construction, as hereinafter described, and particularly recited in the claims.

A represents the frame of the machine, which in general form is that of a power-press;  
35 B, the driving-shaft at the top, to which power is applied to cause it to revolve in the usual manner of power-presses.

On the driving-shaft are two cams, C D, the one, C, imparting reciprocating movement to a  
40 vertically-guided slide, E, by means of a groove in the side of the cam, as indicated in broken lines, so that the slide will remain stationary during a part of the revolution of the cam at its extreme up position, and also remain stationary  
45 at its extreme down position, corresponding portions of the groove being concentric with the shaft, the groove gradually running from one part to the other to force the slide down and to draw it up. The slide E carries a former,

F, which corresponds in width to the width be- 50  
tween the arms of the completed clip.

G is the stationary anvil below and in line with the former F.

The cam D operates, through a rod, H, on the slide L, which is arranged in guides, so as  
55 to move vertically, and to this slide L, on each side of the anvil, an arm, P, is pivoted, as at *a*. Extending upward from the pivot at the upper end the arms P bear against cheek-pieces R on the frame of the machine, so that when  
60 in their extreme upward position, as seen in Fig. 1, the arms will fall to the right and left into a notch or recess at the upper end of each cheek-piece away from or outside the inner face of said cheek-piece, they being forced so  
65 to do by a spring, S, bearing on the arms below their pivots. On the inner side of each of the arms a roll, *d*, is hung, which, in the up position of the arms, stands back away from the line of the sides of the former F, (see Fig. 70  
1,) but preferably below the bottom of the former, so that the blank to be bent may lie upon the tops of the arms, as indicated in broken lines in Fig. 1, and serve to locate the blank  
75 relatively to the former and anvil. When the heated blank is thus arranged beneath the former F, power is applied in the usual manner to force the former downward, which in its descent strikes the blank in the center, (the ends turning up on each side, as indicated in  
80 broken lines in Fig. 1,) until the back of the blank is forced firmly onto the anvil G. There the former stands, owing to the shape of the cam before described. The slide L now begins  
85 its descent by the action of the cam D, which is grooved to produce this result, and in the descent of the slide L the arms P ride downward from the recesses at the upper ends of the cheek-pieces, as seen in broken lines, Fig. 1, and are thereby forced inward until the out-  
90 side bearing-points strike the inner surfaces of the cheek-pieces R. Then the arms ride down the said inner faces of the cheek-pieces, the cheeks holding the arms P close up to the blank and against the former. This forcing  
95 inward of the arms P presses the sides of the blank against the former, which gives them an inward bend near the anvil, as seen in Fig. 5.



Then the motion of the arms continuing downward, the metal forming the bends at the angles which projects outward, as seen in Fig. 5, is drawn down, and so as to completely fill the angles, and should there be any surplus metal it will be drawn down in the shape of a fin below the angles, and subsequently may be easily removed. Then the former rises, leaving the clip finished and free to be removed. Then the slide L, with the arms P P, rise into position to receive a new blank.

The face of the anvil, as also the faces of the rolls *d d*, must conform to the shape of the outside of the clip.

While the rolls *d d* are preferred, they may be dispensed with by making the working-faces of the arms of a shape similar to the rolls, and so that in their descent they will rub or force the metal downward by the rubbing operation.

The groove of the cam C is shown in heavy broken lines in Fig. 1, and the groove of the cam D in lighter broken lines, which shows the relative position as to time for imparting the required movement to the former and to the arms.

It will be understood that the working parts of the machine are interchangeable for other parts to make different kinds of clips, and also that the parts are made adjustable, and that anti-friction rolls may be applied to the points of the arms P, which work upon the cheek-pieces R.

We claim—

1. In a machine for making carriage-clips, the combination of the anvil with two reciprocating slides, the one carrying the former to hold the blank upon the anvil and serve to shape the inside of the clip, the other carrying a pair of arms, said arms arranged one on each side of the former and operated by the movement of the slide, to which they are attached, to first force the sides of the clip against the former and then pass down the sides of the clip over the angles while the clip is held between the former and the anvil, all substantially as described.

2. In a machine for making carriage-clips, the combination of the anvil with two reciprocating slides, the one carrying the former to hold the blank upon the anvil and serve to shape the inside of the clip, the other carrying a pair of arms, said arms arranged one on each side of the former and operated by the movement of the slide, to which they are attached, to first force the sides of the clip against the former and then pass down the sides of the clip over the angles while the clip is held between the former and the anvil, and the roll in each arm to form the working face of the arm upon the clip, substantially as described.

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Witnesses:

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