(No Model.) 2 Sheets—Sheet 1.

W. PEARCE.

DIE FOR FORMING CARRIAGE SHAFT COUPLINGS.

No. 265,431. Patented Oct. 3, 1882.

Fig. 1.

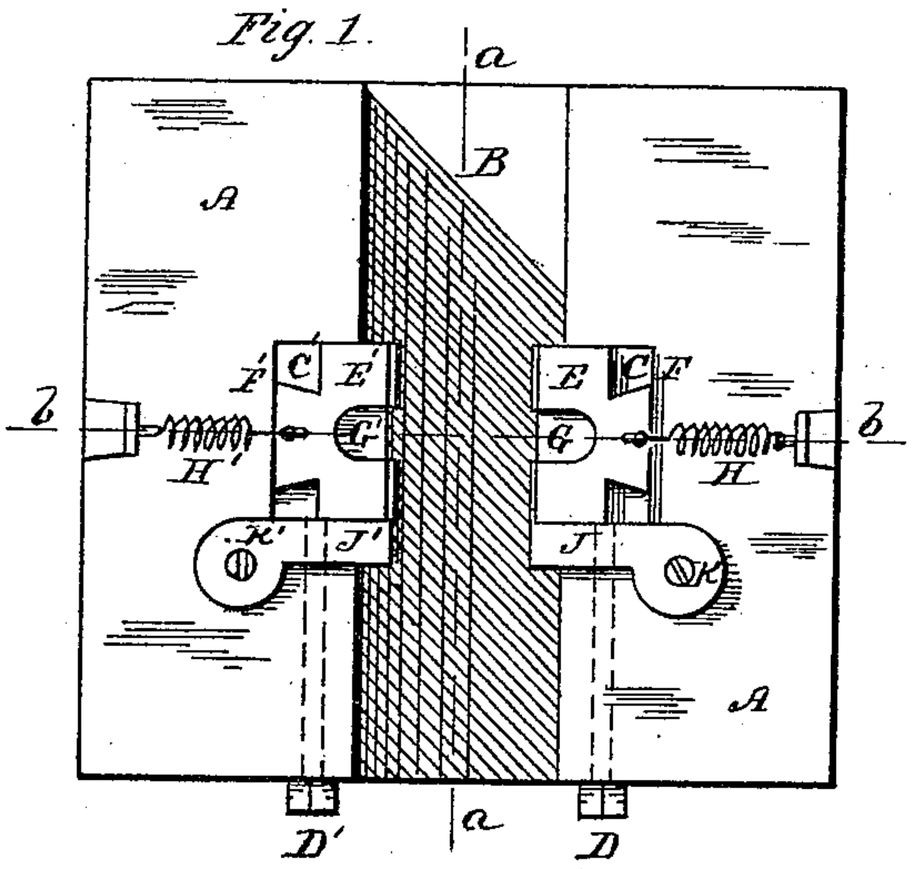


Fig. 3.

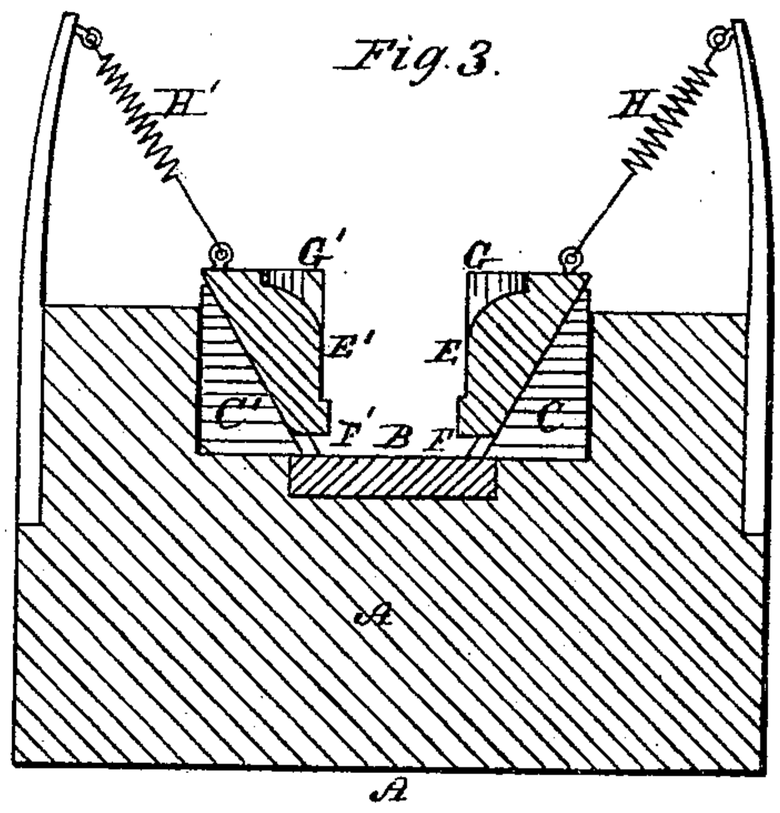
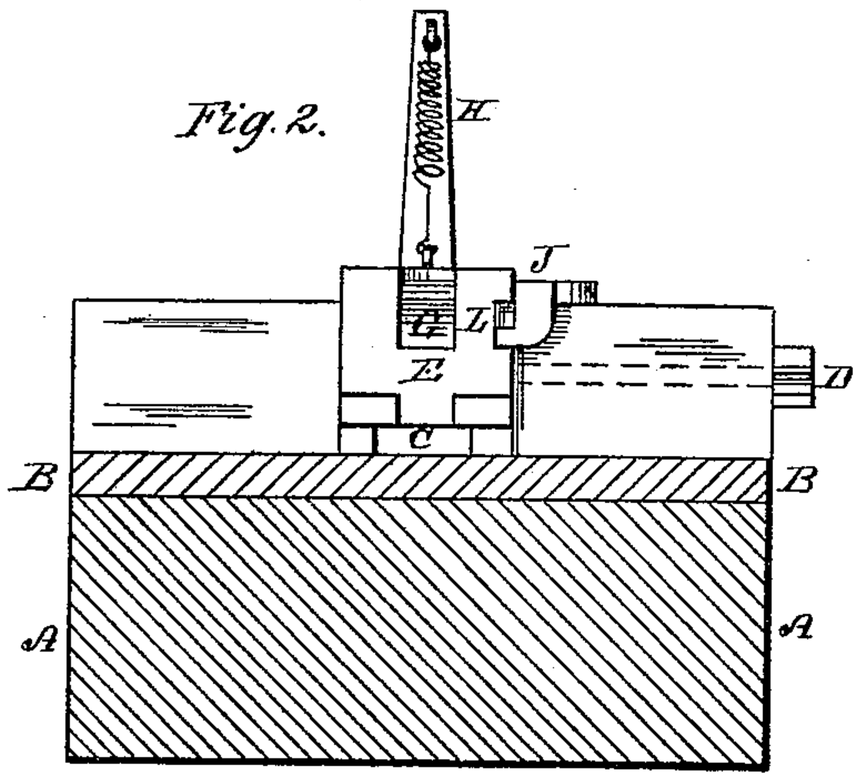


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2

W. PEARCE.

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No. 265,431. Patented Oct. 3, 1882.

Fig. 4.

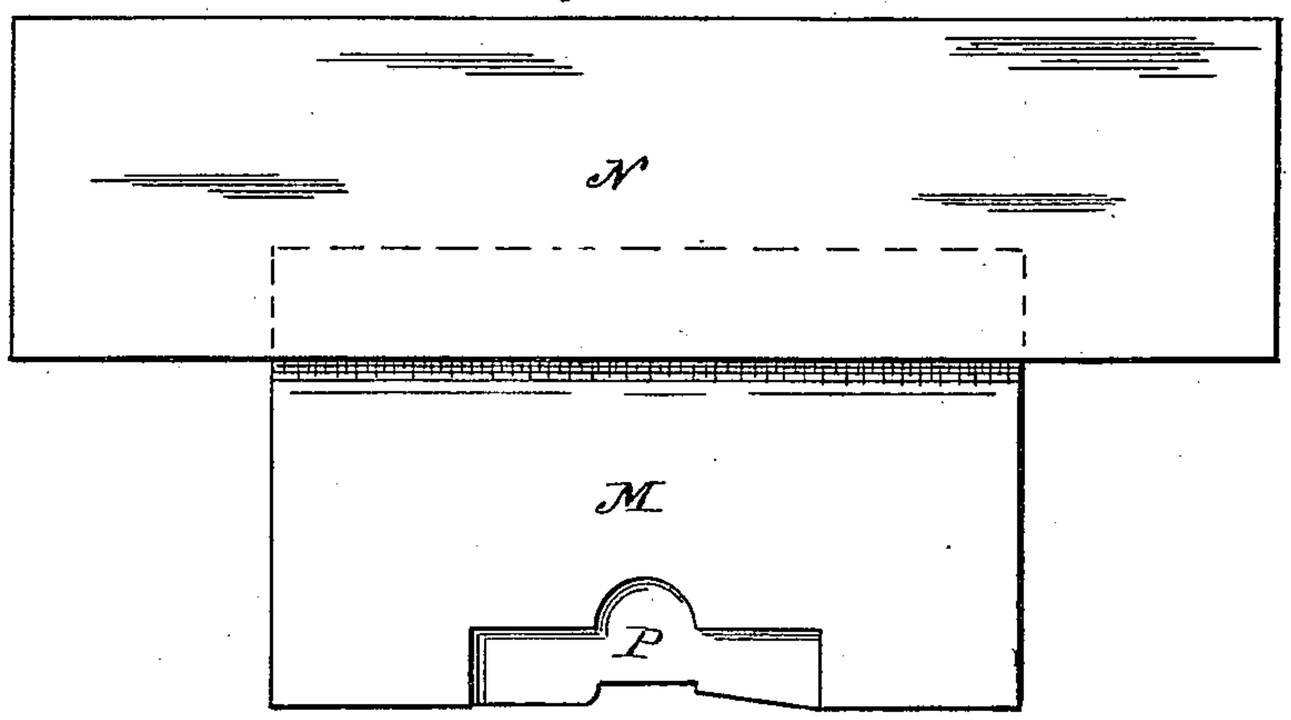


Fig. 6.

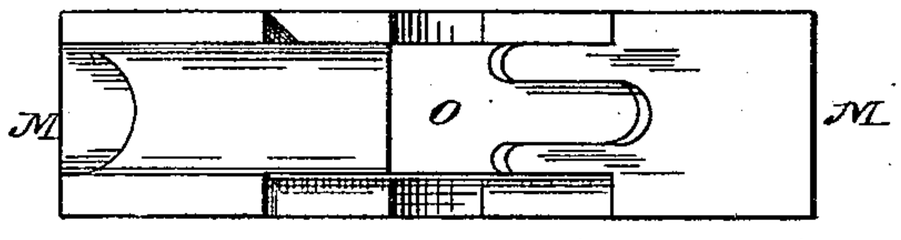


Fig. 5.

Fig. 7.

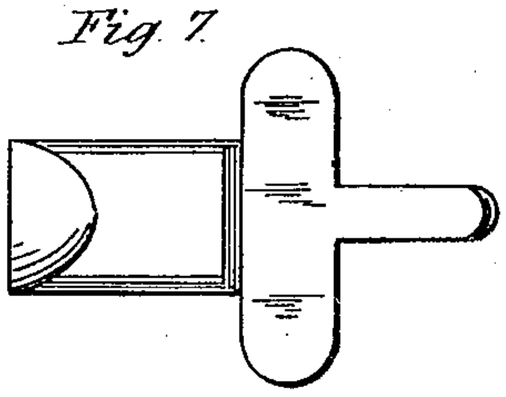


Fig. 8.

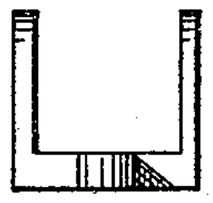
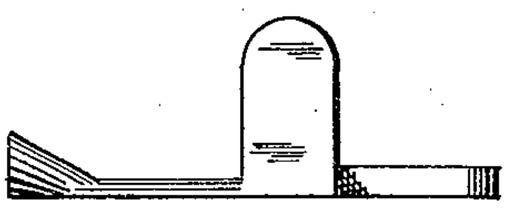


Fig. 9.



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UNITED STATES PATENT OFFICE.

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DIE FOR FORMING CARRIAGE-SHAFT COUPLINGS.

SPECIFICATION forming part of Letters Patent No. 265,431, dated October 3, 1882.

Application filed April 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PEARCE, of Plantsville, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Dies for Forming Carriage-Shaft Couplings; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

My improvement relates to the construction of dies for turning up and forming the ears upon the couplings which are attached to the forward axle of a carriage for the purpose of holding the bolt which passes through the thill-iron. Dies have previously been in use for this purpose, upon which my dies are an improvement.

The object of my invention is to provide dies which shall more easily and efficiently bend up the ears of such couplings and press them more perfectly into their proper shape.

In the accompanying drawings on two sheets, illustrating my invention, Figure 1 is a top view of the lower die or lower part of my improved dies. Fig. 2 is a vertical section on the line *a a* of Fig. 1, looking to one side. Fig. 3 is a cross-section through Fig. 1 on the line *b b*. Fig. 4 is a side view of the upper die, which passes downward between the two parts of the lower die. Fig. 5 is an end view, and Fig. 6 is a bottom view of the same. Fig. 7 is a top view of the blank operated upon before the ears have been bent up and formed by the dies. Fig. 8 is an end view of the blank after the ears have been bent up and formed, and Fig. 9 is a side view of the same.

A is the base-block.

B is a removable and adjustable bed, which can be made of steel or other material and set in the base-block to receive the blow of the upper die. This bed can be adjusted by the introduction of plates of different thickness sliding endwise through the opening in the base-block.

C C′ are the die-carriers. They are set in recesses in the base-block, and are held in position by being clamped by the set-screws D D′. These die-carriers are adjusted to their exact position by shims or thin plates placed behind them to hold them against the pressure of the dies. This adjustment is made before the dies are fastened by the set-screws D D′.

E and E′ are two movable blocks forming the two sides of the lower die. They are movable upon the inclined guides F F′, so that when they are slightly raised, as shown in the drawings, they move apart, so as to make the space between them greater, and when pressed downward they are forced together and are intended to close tightly upon the upper die, which passes down between them. The inclined guides F F′ are formed by dovetailed tongues on E E′ entering corresponding grooves in C and C′, upon which the dies can slide longitudinally in the said grooves and be held in contact with the carriers C C′, upon which they move, and by which they are supported.

G and G′ are sockets in the top part of the dies E and E′, for the reception of the ears of the blank before they are bent upward by being pressed in the dies.

H and H′ are springs for holding the parts E E′ up, but which yield when the upper die descends and presses down the parts E E′.

J J′ are latches, which are pivoted to the base-block A at K and K′ and lock into slots L in the dies E E′. These are for the purpose of limiting the movement of the dies upward when they are drawn by the springs H H′. If it is desired to adjust the dies so as to move upward a greater distance, washers are introduced under the pivots of the latches, so as to raise them farther from the base-block.

M is the upper die. It is held in the block N by means of a dovetailed key, or in any other convenient manner. This is intended to be the movable die, and to be pressed or forced down between the parts E E′ in a drop hammer or press. Its lower side, O, is adapted to fit the blank operated upon, and its sides P are adapted to fit the shape of the finished ears of the shaft-couplings and give them their proper form.

The operation of my improved dies is as follows: The base-block A is fitted upon the

bed of a drop-hammer or suitable press, and securely fastened in position. The upper die-block, N, is attached to the drop or movable part of the press in such a position that when the die descends it will pass exactly midway between the parts E E′ of the lower die. These last-mentioned parts are slightly raised, as shown in the drawings. The blank shown in Fig. 7 is then placed in the lower die, so that the ears rest in the recesses G G′, and the upper die is then forced down upon it. This bends the ears upward, and as the upper die passes downward brings them between the sides of the upper and lower dies. The blank is forced down against the flat bottom plate, B, and lies within the recesses on the bottom of the upper die. As the upper die approaches its lowest position the block N strikes the parts E E′ and forces them down, which presses them inward against the sides of the ears and gives them their final shape. This last operation strikes the blank in three directions at once, and gives the final blow in three directions. By means of this final pressing inward of the sides of the die a more perfect form is given to the coupling than is the case with dies of the common construction, as in the ordinary dies for this purpose the pressure is only downward, which does not permit of the parts of the die being brought so closely together, nor give so perfect a finish to the coupling.

What I claim as my invention is—

1. In dies for forming carriage-shaft couplings, the dies E E′, having the inclined ways F F′, by which they move upon the carriers in both a horizontal and vertical direction, substantially as described.

2. The dies E E′ and the die-carriers C C′, between which are the inclined guides F F′, in combination with the base-block A and the bed-plate B, substantially as described.

3. The latch J, in combination with the die E, the block A, and the spring H, substantially as described.

4. The combination of the vertically-moving die M, the diagonally-moving dies E E′, the die-carriers C C′, and the bed-plate B, whereby the clip is pressed in three directions at the same time, substantially as described.

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MARCUS H. HOLCOMB.