

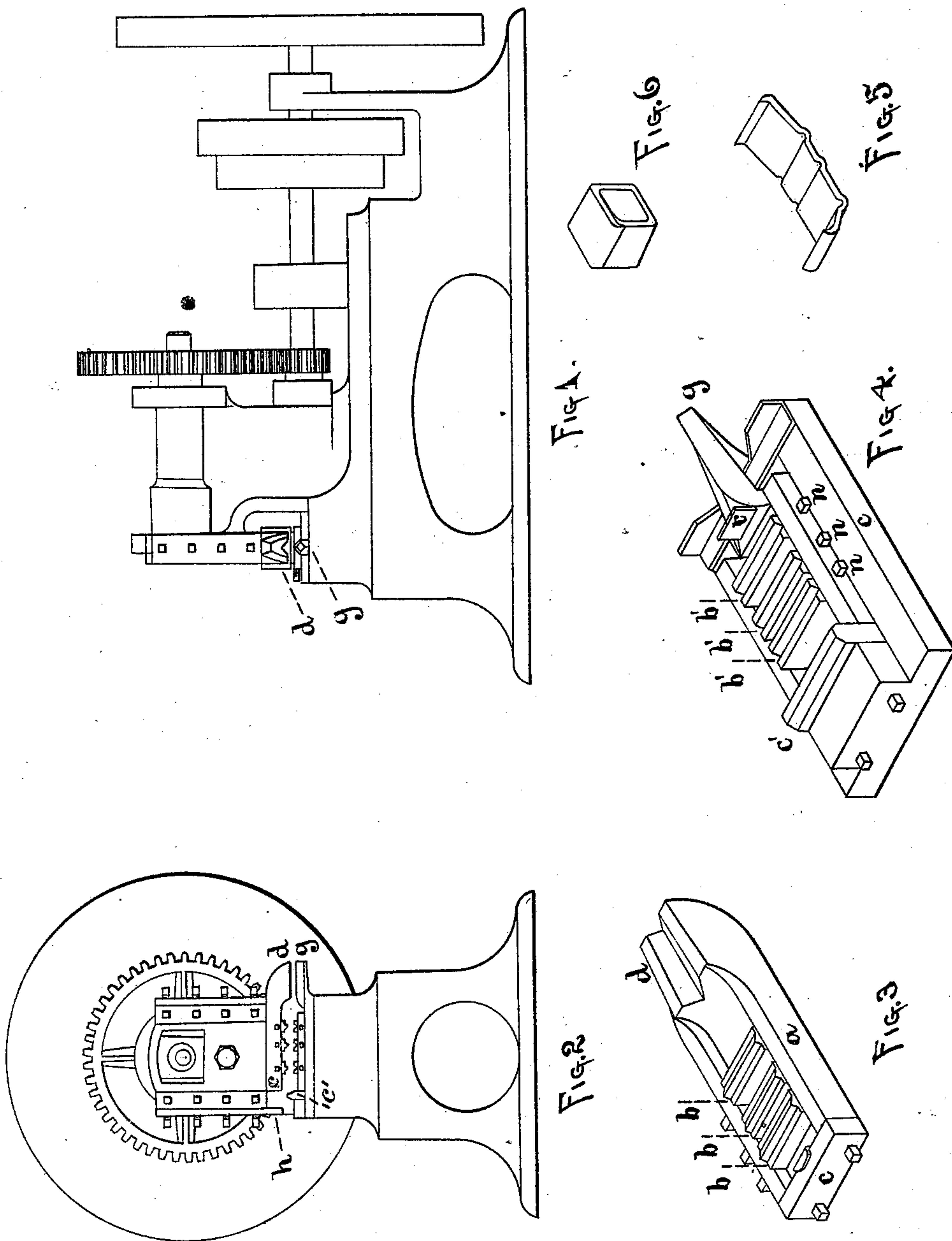
(No Model.)

J. PALMER.

MACHINE FOR MAKING BANDS FOR RAILROAD SPRINGS.

No. 273,302.

Patented Mar. 6, 1883.



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MACHINE FOR MAKING BANDS FOR RAILROAD-SPRINGS.

SPECIFICATION forming part of Letters Patent No. 273,302, dated March 6, 1882.

Application filed August 28, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH PALMER, a citizen of the United States, residing at Concord, in the county of Merrimack and State of New Hampshire, have invented certain new and useful Improvements in Method of Making Bands for Railroad-Springs; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

My invention is designed to facilitate the manufacture of the rectangular bands which encircle the center of sets of railroad-springs to hold the leaves firmly in place.

The ordinary method of making these bands has been to bend them into shape from the straight bar of iron by repeated blows with the hammer over an anvil-former; and my invention is intended to substitute for this slow and laborious operation a means for rapidly and easily bending them into shape and welding the ends by the appliances hereinafter described.

My improvement may be operated by several well-known mechanical devices; but I have chosen a power-press as being the best adapted for all purposes.

In the drawings, Figure 1 is a side elevation of a press adapted to the use of the invention, and to which the devices hereinafter mentioned are applied. Fig. 2 is a front elevation of the press, showing the position of the parts prepared especially for use in the method employed. Fig. 3 is a plan of the under side of the upper die-block as disconnected from the press and turned over, so as to show the dies in position. Fig. 4 is a plan of the lower die-block, showing the lower dies in position. Fig. 5 represents the iron blank in process of manufacture, after receiving the impression of the dies. Fig. 6 shows the blank after being bent into shape by the formers and ready for welding.

The upper die-block, Fig. 3, is a casting of suitable shape, hollowed through its center longitudinally from the end *c* for a sufficient distance to allow the insertion crosswise of suitable dies, the sides of the die-block being left of proper height to secure the dies in place by

means of set-screws or other effective fastening.

The dies *b b b* are made separate, and can be moved within the die-block by loosening the set-screws, so as to be adapted for the size of band required; or, if preferred, the dies may be made in sets suited to the different-sized bands in common use. The dies in the upper die-block are of hardened steel, and are of the kind known as "male" dies, their projections being formed to fit the channels in the female dies in the lower die-block. The end *c*, forming the scarfer of the upper die-block, is of hardened steel, attached to the die-block *a* by screw-bolts or other sufficient fastening, and in working shuts down closely, like a shear-blade, against the inside of the steel scarfer *c'* in the lower die-block. Upon the inside of this scarfer *c* is affixed a projection as a gage for measuring the scarf to be removed, and to the side of the press above is rigidly affixed a downward-projecting guard, *h*, for purposes hereinafter explained. At the other end of the upper die-block a right-angled female die or former, *d*, extends sufficiently to project at one side of the press, as seen in Fig. 2, so as to be conveniently used for finishing the forming of the bands after the blanks have passed between the dies.

The lower die-block, Fig. 4, is preferably cast somewhat broader and heavier than the upper, but is similarly recessed to receive the female dies *b' b' b'*, corresponding in position and arrangement to the male dies *b b b* in the upper die-block. The dies *b' b' b'* are secured by set-screws *n n n* in a similar manner to the dies in the upper die-block, and their relative position can be changed at pleasure; or they may be made in sets, as before mentioned.

The steel scarfer *c'* is beveled on the inside edge, so as to bring the cutting-edge made by the shutting down of the scarfer *c* about one-half inch below its top. A right-angled male die or former, *g*, projects at one end immediately beneath and fitting the female former *d* when in position on the press, and is of suitable size to allow the blanks to be moved around it while forming the angles and during the welding.

A suitable gage, *r*, at the inside end of the former *g* prevents the blank from moving in

that direction when laid upon the dies, and the distance from this gage to the center of the first die measures one side of the finished band, with due allowance for the scarf used in welding.

In operation the upper and lower die blocks are firmly affixed to the press, as shown in Figs. 1 and 2. The dies *b b b* and *b' b' b'* are properly adjusted according to the size of the bands which are to be made, and securely fastened by the set-screws. The press is operated by steam or other power, and is preferably automatic in movement, so that it may work continuously at such rate of speed as will allow the convenient insertion and removal of the blanks between each stroke. The blanks are first cut from flat bar-iron of proper width, and of the right length to form a complete band when bent and welded, and, being properly heated in a furnace, are placed singly between the dies in the press, one end being pressed against the gage *r*. One stroke of the press creases it, as shown in Fig. 5, marking it correctly for three of the corners of the rectangle. It is then taken from the dies and one end placed under the guard *h* and pushed up against the gage affixed to the scarfer *c*. A stroke of the press bends the end downward into the bevel on the scarfer *c'*, and the shearing-edges of the two scarfers *c* and *c'* remove any excess of material, leaving a scarf of proper width and thickness for welding. The guard *h* prevents the throwing up of the other end of the blank while scarfing the end in the press. The opposite end of the blank is then submitted to the operation of the scarfer in the same manner. The blank is then placed across the former *g*,

the first crease being on the uppermost edge. The upper former, *d*, descending, bends the blank and forms two sides of the band. The next crease is then moved forward, and a stroke of the press makes a third side. The third crease is then placed over the center of the former *g*, and the former *d* brings the two scarfed ends together, one within the other, ready for welding, as in Fig. 6. The blank in that form is subsequently reheated, and the welding quickly and neatly completed by slipping the band upon the former *g* and submitting the corner to be welded to the pressure of the upper former; or, if preferred, the welding may be done under a trip-hammer.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. For the manufacture of bands for railroad-springs, the combination of the dies for creasing and marking the blanks, the scarfers for scarfing, and the formers for bending the blanks into the required rectangular form, substantially as described, and for the purpose set forth.

2. In combination, the upper and lower die-blocks, *a c*, male and female dies *b b b*, *b' b' b'*, projecting formers *d g*, and scarfers *c c'*, substantially as described, and for the purposes set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOSEPH PALMER.

Witnesses:

ARTHUR W. SILSBY,

EDGAR H. WOODMAN.