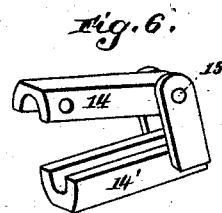
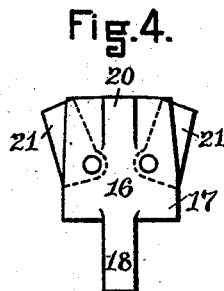
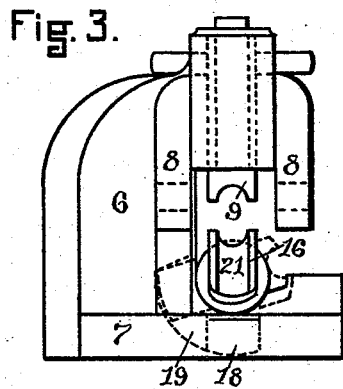
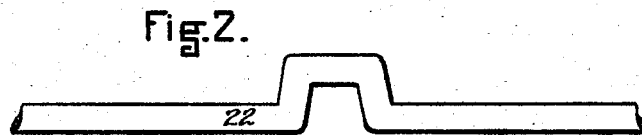
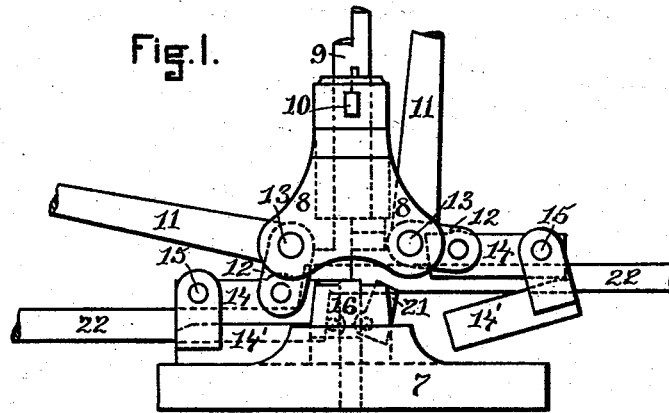


(No Model.)

J. M. BABBITT, 2d.  
MACHINE FOR FORMING LOOM CRANKS.

No. 455,499.

Patented July 7, 1891.



**WITNESSES:**

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# UNITED STATES PATENT OFFICE.

JAMES M. BABBITT, 2D, OF FALL RIVER, MASSACHUSETTS.

## MACHINE FOR FORMING LOOM-CRANKS.

SPECIFICATION forming part of Letters Patent No. 455,499, dated July 7, 1891.

Application filed January 12, 1891. Serial No. 377,572. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES M. BABBITT, 2d, of Fall River, in the county of Bristol and State of Massachusetts, have invented a new and useful Machine for Forming Loom-Cranks; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to an improved machine for bending rods to form cranks.

The object of this invention is to produce a simple machine especially adapted for forming loom-cranks in a more perfect manner than has heretofore been accomplished.

The invention consists in providing the crank-bending machine with mechanism to hold the rod securely while being bent and from which the finished crank may be readily removed.

The invention further consists in the peculiar construction of the die or anvil over which the crank-rod is bent by which the metal of the crank is upset, forming a perfect crank.

Figure 1 is a front view of the improved crank-bending machine with a rod inserted and partially bent. Fig. 2 is a longitudinal view of the finished crank-rod. Fig. 3 is a side view of the crank-bending machine with the arms removed. Fig. 4 is a front view of the die over which the rod is bent. Fig. 5 is an end view of the same. Fig. 6 is a detail perspective view of the grooved die-blocks with the connecting-hinge.

Similar numbers of reference indicate corresponding parts in all the figures.

In the drawings, number 6 indicates the frame of the bending-machine, which is secured to or made in one piece with the base 7, and has the extending projections 8 and a central vertical perforation in which the plunger 9 moves. Through the head of the frame 6 a slot 10 is cut to correspond with a similar slot cut through the upper end of the plunger 9. The levers 11 have the short arms 12 made integral therewith and slightly offset therefrom at the sides to form bell-cranks, which are pivotally secured to the wings 8 by the pivots 13, the arms 12 being also pivotally secured to the hinged die-blocks 14 and 14'.

These hinged die-blocks are secured together by the pivots 15 15, and are provided with longitudinal grooves, each groove being of a depth equal to one-half the diameter of the crank-bar, and at the outer end the die-blocks 14' are chamfered off to allow the inner end of the die-blocks 14' to drop away from the blocks 14. The inner end of the die-block 14 is cut at an angle corresponding to the angle of the proposed outer surface of the finished crank. The anvil 16 has the rounded shoulder 17, fitting a corresponding depression in the base 7, where it is held against side pressure by the shank 18 fitting into the radial slot 19. The upper or wearing surface of the anvil is formed of the central rib 20, and the wings 21 21 pivotally secured between the sides of the anvil by removable pivots. The rib 20 and the wings 21 21 have semicircular grooves on their outer surfaces to receive the lower surface of the crank when bent. The anvil-wings 21 21 may be removed from the anvil by withdrawing the pivots which hold them in place and other wings or dies having their surfaces cut at a greater or less angle substituted.

The process of bending a rod with the improved crank machine is as follows: The levers 11 11 are both thrown upward until nearly parallel with the plunger 9. The rod 22 is now passed endwise through the grooves in the adjoining surfaces of the hinged die-blocks 14 and 14', the chamfered ends of the blocks 14' allowing their inner ends to drop away from the lower surface of the rod. The plunger 9 is now forced down on the rod, and is held by a key passing through the slot 10 and a similar slot in the plunger 9. The rod 22 is now firmly held between the lower surface of the plunger 9 and the upper surface of the anvil 16, the wings 21 of the anvil being in the position indicated in Fig. 4. As the rod 22 is bent downward by the depression of the levers 11, the blocks 14' are brought down on the surface of the base 7, on which they slide inward toward the anvil 16, gradually bending the rod into a crank having a shape somewhat rounded and corresponding to the shape of the anvil-surface with the wings 21 extended. A still greater pressure is now produced on the levers 11, the bent portions of the partially-finished

crank being forced against the extended wings 21, driving them inward. As the wings 21 move inward the upper ends tend to lift the metal of the rod 22 and upset the same into a perfect crank. After the crank has been formed in the machine the key, fitting into the slot 10, is removed, allowing the plunger to be lifted away from the crank. The pins 15, connecting the die-blocks 14 and 14', are now withdrawn and the levers 11 thrown upward, carrying with them the blocks 14. The anvil 16 and blocks 14' may now be turned forward, the anvil-shank 18 moving in the radial slot 19 until they assume a position where the finished crank can be most conveniently removed from the machine.

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

1. In a crank-bending machine, an anvil having grooved wings pivotally secured to the same and rotatable in the base of the machine to allow of the removal of the finished crank, and means for bending the crank, as described.

2. In a crank-bending machine, the combination, with the base 7, having the central radial slot 19, and a recessed seat adapted to receive the rounded shoulder 17, of the anvil 16, having the shank 18 movable in the slot 19, the rounded shoulder 17, central rib 20, and grooved wings 21, pivotally secured to the ends of the anvil, and means for bending the rod to form the crank, as described.

3. In a crank-bending machine, the combination, with a base provided with an anvil and supporting a frame in which a central vertically-movable plunger is carried, of levers pivotally secured to the sides of said frame and having short arms formed integrally with the bases of such levers, to which are pivoted grooved die-blocks and to which are hinged at their outer ends other similar die-blocks constructed to register therewith, as described.

JAMES M. BABBITT, 2D.

Witnesses:

HENRY J. MILLER,  
JOSEPH A. MILLER, JR.