JAMES C. JORDAN.

Improvement in Combined Machines for Cutting, Punching, and Bending Tires.

No. 115,868. *Fig. 1.* Patented June 13, 1871.

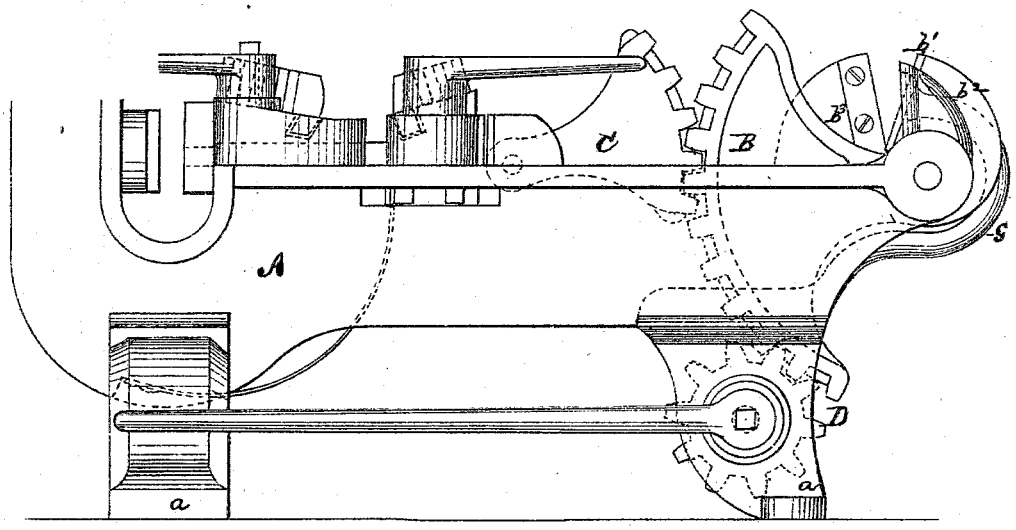
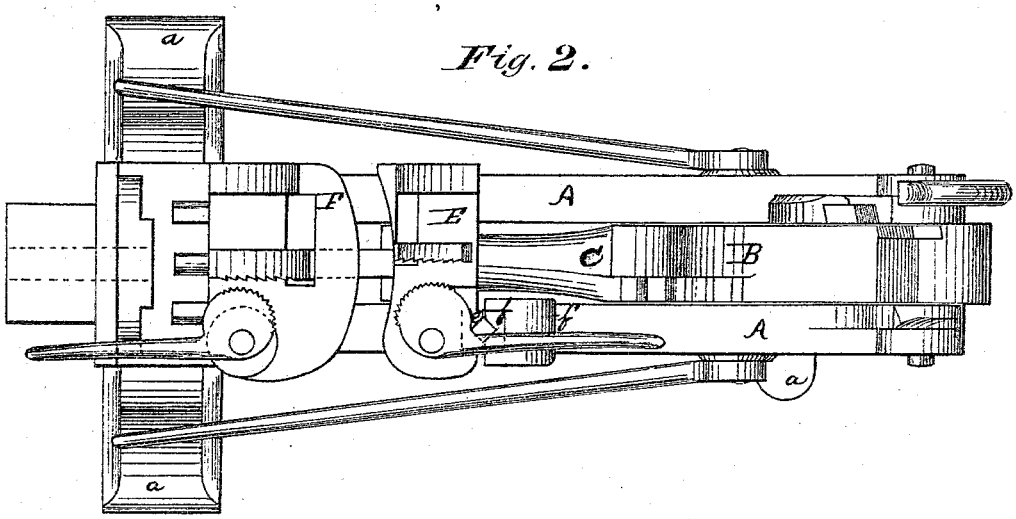


Fig. 2.



Witnesses:

L. J. Noyes
E. Greenhaussass

Inventor

J. C. Jordan by
H. W. Beadle atty.

UNITED STATES PATENT OFFICE.

JAMES C. JORDON, OF WATERTOWN, WISCONSIN, ASSIGNOR OF ONE-FOURTH HIS RIGHT TO THOMAS BAXTER AND ONE-HALF TO J. W. MATHES.

IMPROVEMENT IN COMBINED MACHINES FOR CUTTING, PUNCHING, AND BENDING TIRES.

Specification forming part of Letters Patent No. 115,868, dated June 13, 1871.

To all whom it may concern:

Be it known that I, JAMES C. JORDON, of Watertown, in the county of Jefferson and State of Wisconsin, have invented a new and Improved Combined Machine for Cutting, Bending, and Punching Iron; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

This invention has for its object the production of a machine which shall be capable of being used for shearing, punching, and bending iron, and for heading bolts and shrinking tires; and consists in certain details of construction, which will be fully described hereinafter.

In the drawing, Figure 1 represents a side elevation of my improved machine, and Fig. 2, a plan view of the same.

To enable others skilled in the art to make and use my invention, I will now proceed to describe fully its construction and manner of operation.

A A represent the sides of the machine, constructed in any proper manner and of suitable material, which are provided with legs *a a*, as shown. B C represent a pair of levers provided with curved faces, which have a swinging or partial revolving movement on their fulcrums. The lever B is pivoted between the sides of the frame at one end, and is provided upon the lower portion of its curved face with large and powerful teeth, which gear with the pinion D, the shaft of which latter turns in suitable bearings in the legs, as shown. The upper portion of its face is also provided with teeth, arranged upon one side, which engage with corresponding teeth upon the face of the lever C, they being so arranged as to work together without preventing the faces of the levers from bearing against each other. For the purpose of enabling some parts of the machine to move longitudinally, in order that it may be adapted for the desired purposes, the lever C is provided with a fulcrum capable of a sliding movement upon the frame, and the faces of both levers are made to curve outward from the center as they curve upward—that is, the upper ends of the curve are further from the fulcrums than the lower ends. The result of his construction is that the lever C is caused to move longitudinally upon the frame when the lever B is actuated by means of the pinion D. E represents the sliding block or frame, on which the lever C is pivoted. Upon its side opposite from the lever it is provided with a face curved to correspond with the adjacent face of the stationary block F secured to the top of the frame. To it is also attached a shaft which extends rearward through suitable bearings, and is provided at its end with a punch, which operates against a suitable punch-block or table. The sliding block E is also provided upon one side with a suitable recess and die, *e*, which corresponds with a similar recess and die, *f*, upon a stationary block, *f'*, as shown. The upper surface of the block E is also provided with a vertical pin, which forms the fulcrum of an eccentric serrated lever, as shown, and it has also a recess for the reception of a serrated iron, which is used in connection with the serrated lever, and a similar iron held and arranged in a corresponding manner upon the block F. b^1 represents one of the knives of the shears, which is attached to a projection, b^2, upon the pivoted end of the lever B, the corresponding knife being suitably attached to a stationary block, b^3, upon the frame. G represents a guide to assist in holding the metal to be cut in proper position.

The operation is as follows: Motion is communicated to the pinion D by a lever or other suitable means, and through it to the levers B and C. The partial revolving movement of the projection b^2 upon the pivoted end of the lever B causes the knife attached thereto to cut against the corresponding knife upon the sliding block, and thus shear any metal which may be presented to it. The longitudinal movement of the lever C being communicated to the block E, the latter is caused to bear against the curved face of the block F, and it is thus enabled to give a corresponding face to any bar subjected to the pressure. The return movement of the block E brings the die *e* against the opposite die *f*, and thus forms into proper shape any suitable object presented.

The movement of the block E also causes the punch to operate, as will be clearly understood from the drawing. By means of the eccentric levers and the serrated iron any tires or other bars can be securely griped and

lengthened by the moving block, or pressed together, as may be desired. The curved faces of the blocks E and F are especially designed for elliptic springs, and the dies *e f* for heading bolts. It will be observed that the faces of the levers B C bear against each other, so that no great strain is borne by the teeth. This machine is adapted for use either in a horizontal or perpendicular position. In practice it is proposed to use it horizontally during the seasons for setting tires, and perpendicular at other times, it being then securely bolted to any suitable support. It is an exceedingly strong machine, as the power is always exerted in a straight line from the point of resistance. By means of this construction a single machine is adapted to manipulate iron in all the ordinary ways.

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

The combination described of the frame A, levers B C, pinion D, and blocks E F.

This specification signed and witnessed this 17th day of March, 1871.

Witnesses: JAMES C. JORDON.

CALVIN CHENEY,

A. CLEVELAND.