W. J. LEWIS.

Machines for Bending Wire for Fence-Pickets.

No. 155,657. Patented Oct. 6, 1874.

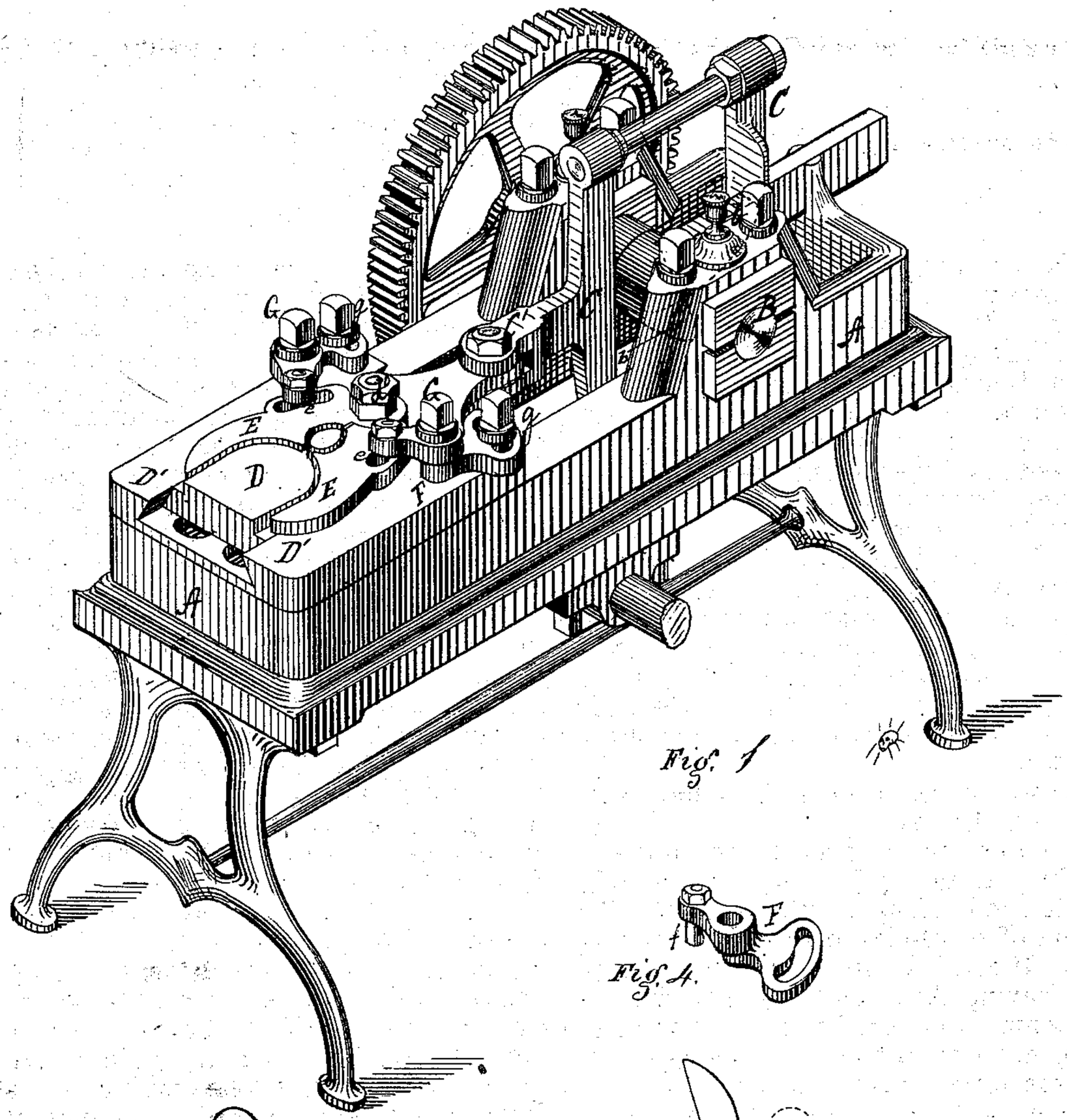

Fig. 1

Fig. 4.

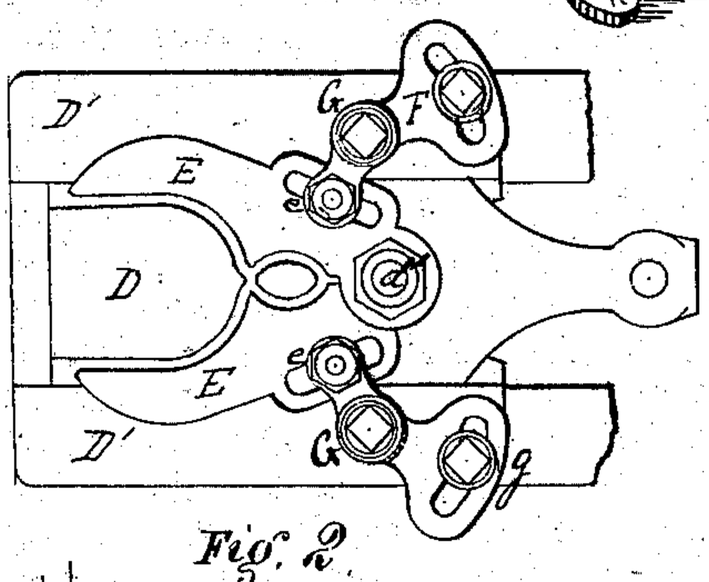

Fig. 2.

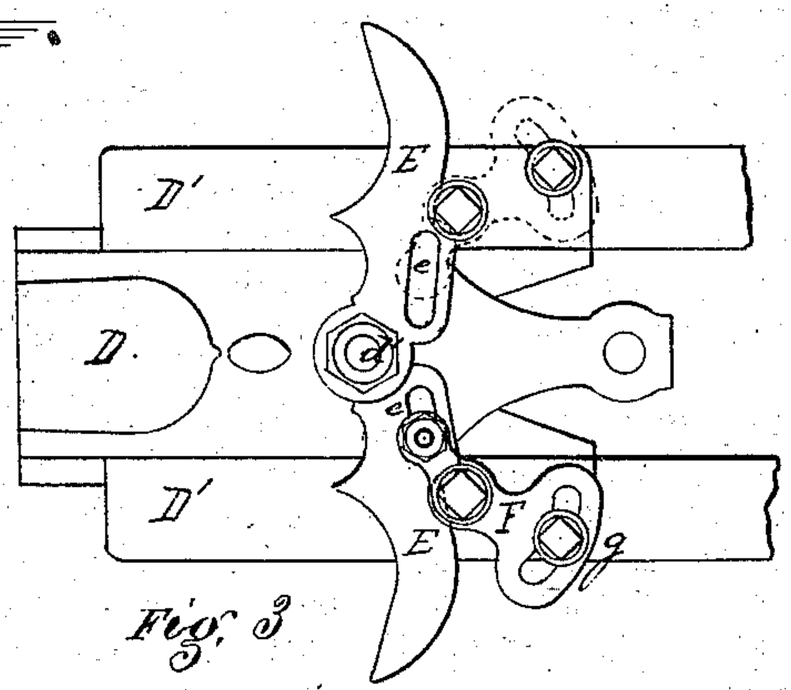

Fig. 3

Witnesses { F. W. Ritter Jr. / James E. Kay

Inventor William J. Lewis / by Bakewell & Kerr / Atty's.

UNITED STATES PATENT OFFICE.

WILLIAM J. LEWIS, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR BENDING WIRES FOR FENCE-PICKETS.

Specification forming part of Letters Patent No. **155,657**, dated October 6, 1874; application filed April 17, 1874.

To all whom it may concern:

Be it known that I, WILLIAM J. LEWIS, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Machine for Bending Metal; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is an isometrical perspective of the apparatus embodying my improvements. Fig. 2 is a plan view of that portion of the machine which contains my improvements, the jaws being closed upon the former. Fig. 3 is a plan view of the same with the jaws extended; and Fig. 4 is an isometrical perspective of the fulcrum-arm.

Like letters of reference indicate like parts in the several figures.

My invention relates to machines employed for bending metal, and is more especially adapted to the bending of rods or bars in the production of fence-pickets of various configurations. It consists, first, in a set of clamping-jaws, having their fulcrums upon the bed of the machine, and attached to the former so as to be operated therefrom, whereby the movement of the former causes the jaws to alternately open and close about the former, so that bars or similar articles may be bent into irregular forms; and, secondly, in adjustable fulcrum-arms combined with a set of bending-jaws pivoted to a movable former, whereby the bite of the jaws upon the former is regulated.

A represents the bed of this machine, having journals for the shaft B, said shaft being provided with the usual cog-wheels for gearing with the power-shaft. It is also provided with cams *b*, (shown in dotted lines,) for operating the cross-head C. These devices are of the ordinary construction, and need not be specifically described.

I will now proceed to describe the devices embodying my invention, of which D represents a former, movable in the guides D′, secured to the bed A. This former D is attached to the cross-head by the bolt C′, or in any other suitable manner, and receives its motion from said cross-head. This former D may be of the shape shown in the drawing, or of any other desirable configuration. E represents a pair of jaws, pivoted to the movable former at *d′*, and of such configuration as the article to be produced or the shape of the former shall require. These jaws are provided with slots *e*, which receive the fulcrum-pins *f*, Fig. 4, on the fulcrum-arms. F F represent the fulcrum-arms, of the form shown more clearly in Fig. 4, although another form may be adopted, provided such form permits of being pivoted to the guides or bed, and moved so as to adjust the fulcrum against which the jaw E works. In the present instance this fulcrum-arm is pivoted at its middle to the guide D′, and is provided with a fulcrum-pin, *f*, at one end, projecting downward into the slot *e* of jaw E, the other end of the arm having an elliptical slot, through which passes a set-screw, so as to change the position of the fulcrum-pin. G indicates the screw forming the pivot for the arm F, and G the set-screw controlling the position of the fulcrum.

The operation of these devices is as follows: The forward movement of the cross-head carries with it the movable former, which causes the inclined slot *e* upon the outer portion of the jaw to move down the fulcrum for a short distance until the point *d′* of pivoting of the jaw E to the former comes in line with the fulcrums. The point of pivoting continues to move, so as to change its relative relation to the fulcrums, changing the line of direction of the force, and causing the jaws to expand or open. While in this position the bar or other article to be bent is placed across the former in a line parallel with the open jaws, and at right angles to the former. The backward movement of the former causes the incline upon the upper surface of the jaws to move up upon the fulcrum-pins, bringing the jaws together, forcing the bar around the former, and giving it the shape required. When it is desired to change the bite of the jaw upon the former, set-screw *g′* is loosened, and the fulcrum-arm moved so as to bring the fulcrum nearer to or carry it farther from the pivot of the jaws, accordingly as greater or less bite of the jaws is required. If the fulcrum-point is

brought nearer to the point of pivoting, then, of course, the bite of jaws upon the former will be greater.

It is evident that the former and jaw must correspond to produce the shaped article desired, but need not necessarily be of the form shown in the drawing, as it is evident various forms may be employed, the form being no part of the invention.

Having thus described my invention, what I claim is—

1. The combination of the movable jaws relatively to the bed and "former" hereinbefore described, each jaw having its fulcrum on the bed of the machine, while it is also connected with the former so as to be moved thereby, substantially as and for the purpose specified.

2. The adjustable fulcrum-arms, combined with a set of bending-jaws pivoted to the movable former, substantially as and for the purpose specified.

In testimony whereof I, the said WILLIAM J. LEWIS, have hereunto set my hand.

WILLIAM J. LEWIS.

Witnesses:

T. B. KERR,

F. W. RITTER, Jr.