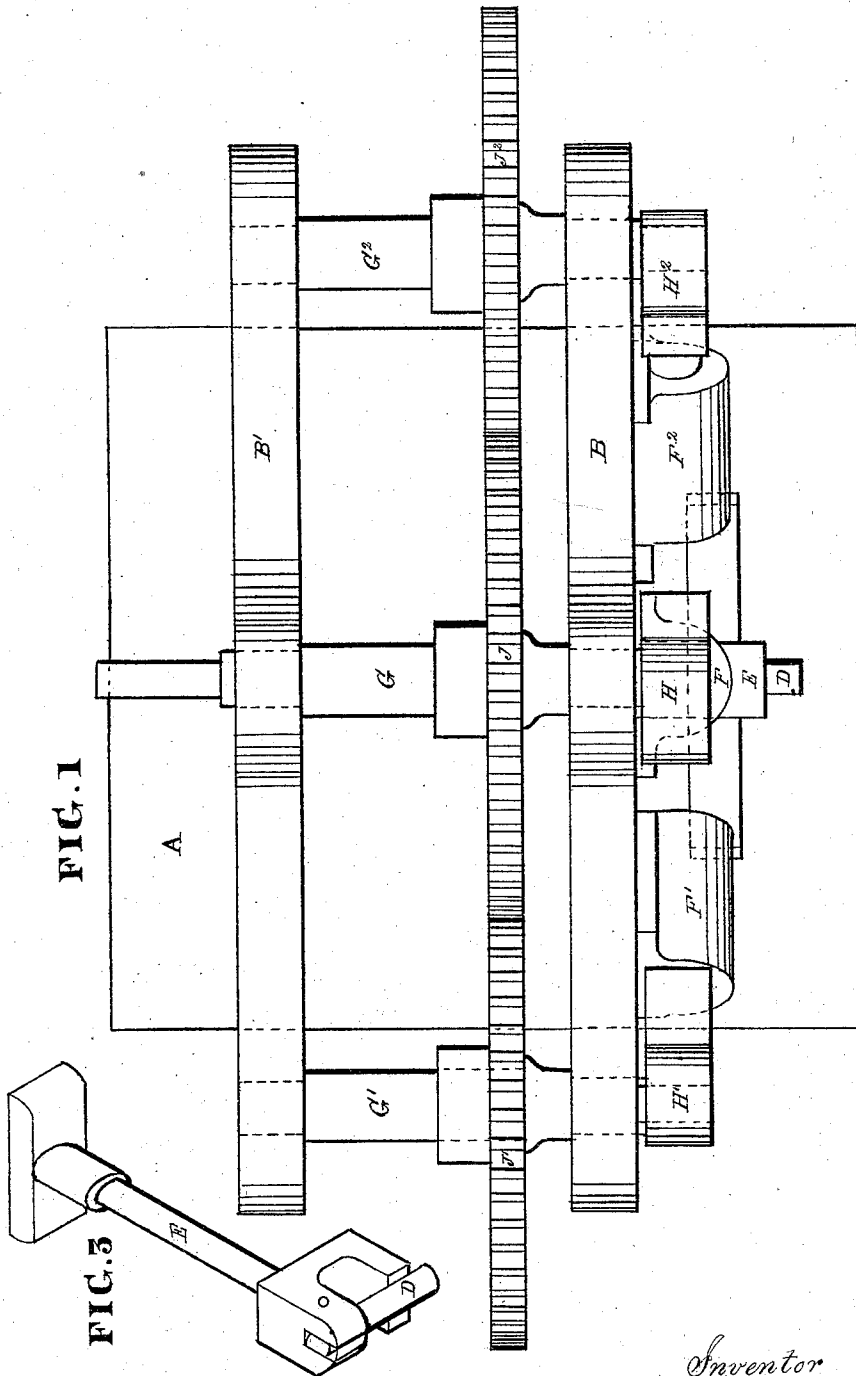


W. L. NEWSHAM.

Machines for Bending Tube Sockets.

No. 137,792.

Patented April 15, 1873.



Witnesses.
Thomas C. Dewley.
W. R. Wright

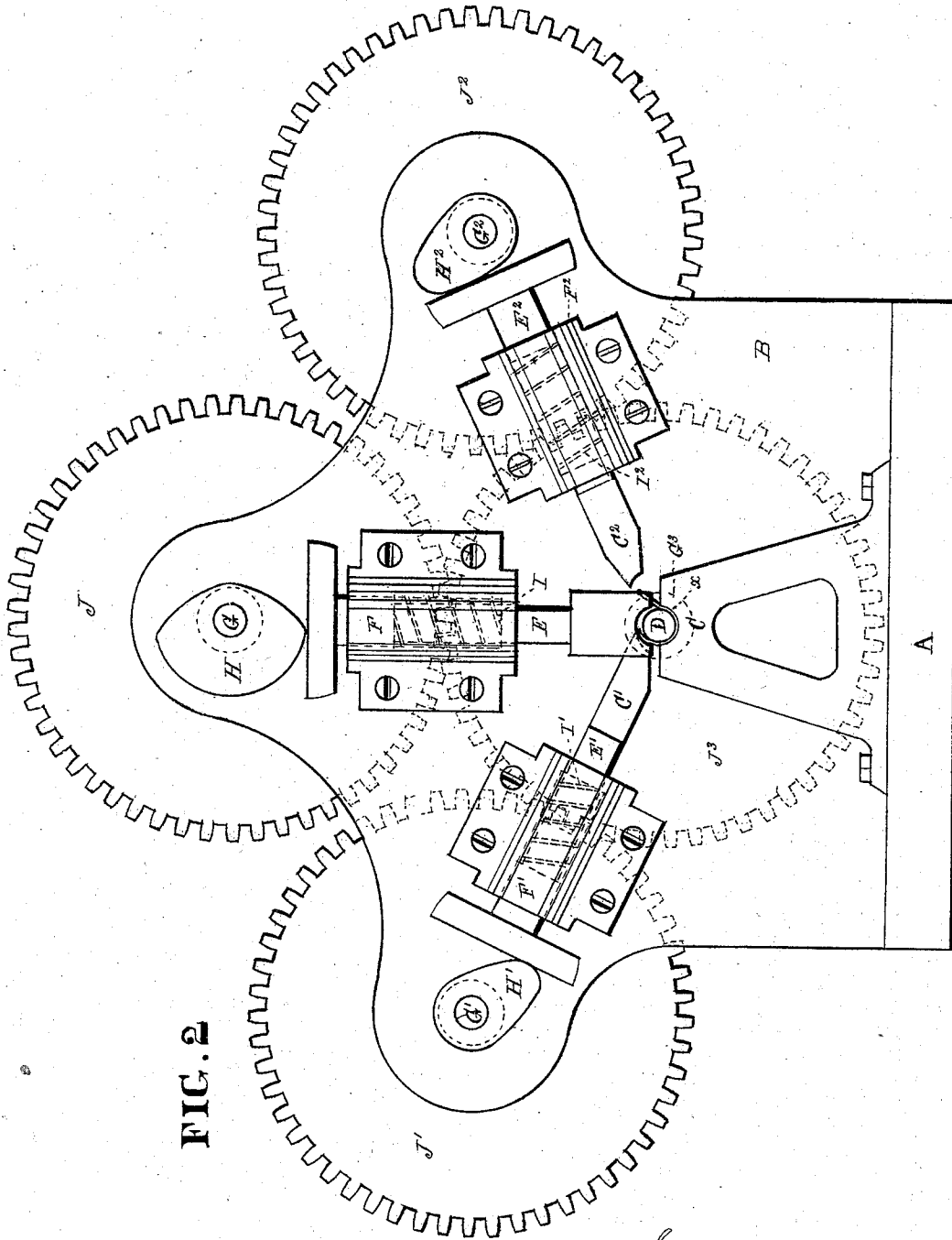
Inventor
William L. Newsham.
By His Attorney
Stephen Ustick.

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UNITED STATES PATENT OFFICE

WILLIAM L. NEWSHAM, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
MORRIS, TASKER & CO., OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR BENDING TUBE-SOCKETS.

Specification forming part of Letters Patent No. **137,792**, dated April 15, 1873; application filed
December 31, 1872.

To all whom it may concern:

Be it known that I, WILLIAM L. NEWSHAM, of the city of Philadelphia and State of Pennsylvania, have invented certain Improvements in Machines for Bending Metal-Tube Sockets, of which the following is a specification:

My invention relates to the combination of an articulated mandrel for bending the middle portion of the skelp with the lower die and two other dies, in combination with the said die and mandrel for bending the remaining parts, the mandrel being tilted in its upward movement for the discharge of the socket, as hereinafter fully described.

Figure 1 is a plan view of the improved machine. Fig. 2, Sheet No. 2, is a side elevation of the same. Fig. 3 is an isometrical view of the slide E and mandrel D.

Like letters in all the figures indicate the same parts.

A is the bed-plate, and B and B¹ the housings. C is a stationary die, into which the middle portion of the skelp *x* is bent by means of the mandrel D, connected at its inner end with the radial slide E, which moves in the bearing F on the front of the housing B. C¹ and C² are movable dies, arranged at angles with the die C, for bending the outer portions of the skelp. These dies are provided with stems or slides E¹ and E², which are caused to move in the bearings F¹ and F². I have represented on the front ends of the shafts G, G¹, and G² cams H, H¹, and H², for giving an inward motion to the mandrel D, and the dies C¹ and C² for bending the skelp, and springs I, I¹, and I² for returning them to their outer position.

I do not confine myself to this mode of operating the mandrel and dies, as eccentrics, or other suitable mechanism may be used. When eccentrics are used the springs are dispensed with.

On the shafts G, G¹, and G² there are gear-wheels J, J¹, and J², which gear into the wheel J³ on the driving-shaft G³. The slides E, E¹, and E² are so arranged in relation to each other and to the die C, that the mandrel D receives its downward motion to press the middle portion of the skelp into the die C first; then the die C¹ commences moving somewhat in advance of the die C², so that one of the outer portions may be bent down on the mandrel and the other so as to overlap it for the welding process. The mandrel D is pivoted at its inner end to the slide E, as seen in Fig. 3, so that when the slide assumes its upward position the mandrel is thrown on a descending angle for the discharge of the bent skelp.

I claim as my invention—

1. The combination of the articulated mandrel D, die C, and slide E, operated by means of the cam H, or other suitable mechanism, in such a manner that by the downward movement of the slide the skelp is pressed by the mandrel into the die and bends the middle part of the skelp, and in the upward movement of the same, after the completion of the bending process by the other dies, the mandrel is tilted to discharge the socket from the mandrel, substantially as described.

2. The combination of two movable dies C¹ and C² for bending the outer portions of the skelp, in combination with the die C and mandrel D, either movable or stationary, the said dies moving one a little in advance of the other and in different planes with each other, and at angles with and above the horizontal plane of the lower die C, substantially in the manner set forth.

WILLIAM L. NEWSHAM.

Witnesses:

JOS. W. HARRISON,
STEPHEN USTICK.