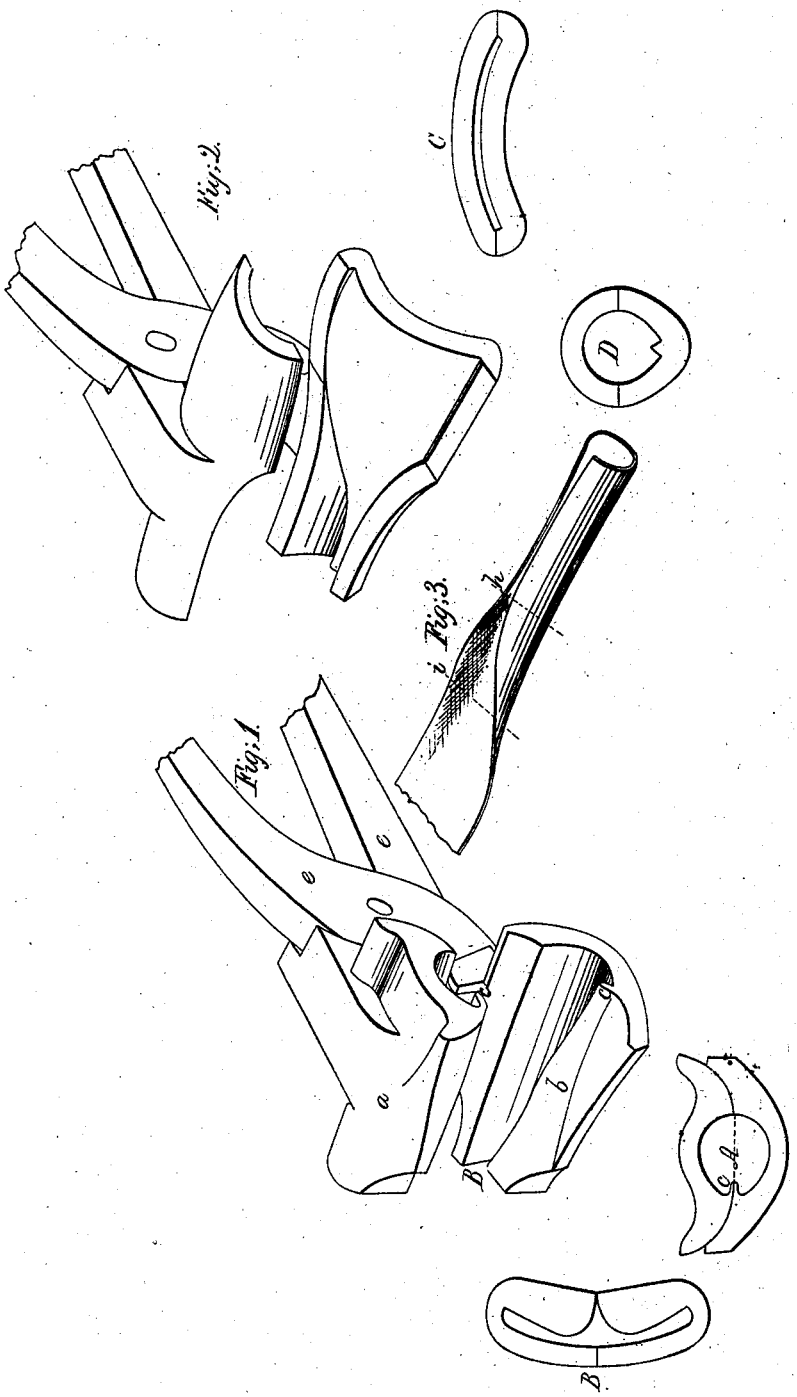
J. Mc Culley.

Making Metal Tubing.

No. 6,017. Patented Jan. 9, 1849.



UNITED STATES PATENT OFFICE.

JOSEPH McCULLEY, OF PHILADELPHIA, PENNSYLVANIA.

DIE FOR BENDING TUBE-SKELPS.

Specification of Letters Patent No. 6,017, dated January 9, 1849.

To all whom it may concern:

Be it known that I, JOSEPH McCULLEY, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Wrought-Iron Pipes, and that the following is a full, clear, and exact description of the principle or character which distinguishes them from all other things before known and of the usual manner of making, modifying, and using the same, reference being had to the accompanying drawing, which is referred to and makes a part of this description, in which—

Figure 1, is a delineation of the first pair of tongs. Fig. 2, represents the second pair of tongs. Fig. 3, is a view of the skelp partly formed into tube.

The nature of my improvements consists in the construction and application of the tongs or dies through which a flat skelp after it has been heated is drawn to turn it into a proper form to be welded into tubing.

The construction and application is as follows, viz: I form a die or mold in two parts (*a. b.* Fig. 1.) the junction between which forms a curved line (see A), these two parts have each a recess in them, which when closed, forms at one end B. a curved cross section of about the same shape as the curvature at their junction, and at right angles to it; at the other end of the die these recesses gradually assume a cylindrical form, as clearly denoted at A. There is a small bead or projection (*c*) on the edges of each half die on one side, to prevent the edges of the skelp from quite meeting, which preserves a greater uniformity in bending, and also leaves the edges in the proper position to weld. The two dies thus constructed, form the part of a large pair of tongs (*e*, *e*) similar in shape to those used by forgemen, and they are thus used: a workman holds them in a proper position, while a second workman, called a fireman, withdraws the skelps from the furnace; when one half of its length has been properly heated, he places the skelp on the tongs, the breadth of it being parallel with the junction of the dies; they are then brought together by the workman, and a curve is given to the skelp in its cross section; the tongs are then opened and the skelp is turned by the fireman at right angles to its former position, the two edges entering the recesses in the dies, and they are again closed, when the heated end of the skelp is drawn through, and it assumes the appearance shown in Fig. 3, when it appears half formed, or in other words, from the center to one end, is completely turned for the process of welding; it is then returned to the fire to heat the other end, for the purpose of being completed in a second pair of tongs, represented in Fig. 2; these are in the form of the dies precisely analogous to the contour of the skelp between the line *h*, and *i*, in Fig. 3, one of the dies fitting the inner curve, and the other die the outer one; the two ends of the closed die are shown at C and D, Fig. 2. When the skelp is heated at the other end, it is placed in the second pair of tongs, being drawn through which, it is completed ready for the welding process. The skelp is drawn through the tong on the ordinary draw bench, with an endless chain, which being a well known apparatus, needs no description.

Having thus fully described my improvements in forming skelps of wrought iron into tubes ready for welding, what I claim therein as new, and desire to secure by Letters Patent, is—

The dies or tongs, formed substantially as herein described, for forming skelps into the proper curve for welding, in the manner set forth.

JOSEPH McCULLEY.

Witnesses:

DAVID L. DONALDSON,

ALEXANDER HAMILTON.