W. L. McNAIR

Manufacture of Metal-Tubing.

No. 164,497. Patented June 15, 1875.

Fig. 1.

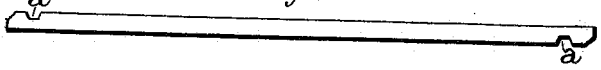


Fig. 2.

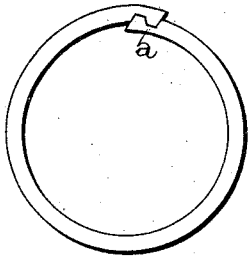
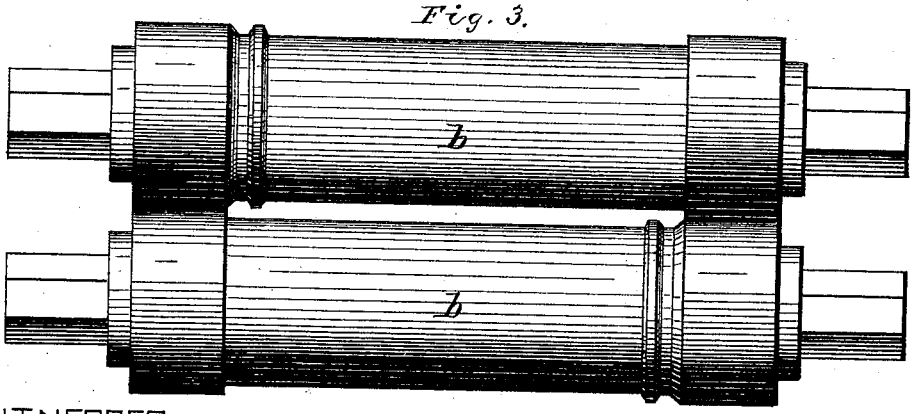


Fig. 3.



WITNESSES.

C. M. Lemon.
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INVENTOR.

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per
F. A. Lehmann, Atty.

UNITED STATES PATENT OFFICE.

WILLIAM L. McNAIR, OF ALLEGHENY, PENNSYLVANIA.

IMPROVEMENT IN THE MANUFACTURE OF METAL TUBING.

Specification forming part of Letters Patent No. **164,497**, dated June 15, 1875; application filed March 20, 1875.

To all whom it may concern:

Be it known that I, WILLIAM L. McNAIR, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Pipe, Tubing, and Sockets; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is an edge view of a blank out of which the pipe is formed. Fig. 2 is an end view of a piece of tubing before it is passed through the rolls for the purpose of closing the joint. Fig. 3 is a side elevation of the rolls for forming the blank.

My invention relates to the improved construction of tubing for water and gas pipes; and it consists in forming a suitable groove near the edge of the blank, on opposite sides, heating the blank to a welding heat, and then bending it into a circular shape, passing the tube thus partly formed over a mandrel, and then passing it through a pair of rolls while still on the mandrel, so as to weld the overlapping edges together, as will be more fully described hereinafter.

I take a perfectly straight sheet of metal of the required width and thickness, according to the size of pipe required, and pass it through the rolls *b*, so as to form the groove *a* in each surface of the blank near its edges, as shown. These rolls *b* also bevel the edges of the blank, so that when passed through the welding-rolls the joint will be closed better and more evenly than could otherwise be done. After the grooves have been formed the blank is bent into a circular shape, the edges being made to overlap each other, so that the ridge along one edge will fit in the groove in the other, as shown. As these grooves are not quite as deep as one-half the thickness of the metal, these overlapping edges will make the pipe thicker at this point than any other, so as to give the welding-rolls material upon which to work. After the blank has been bent into this circular shape a mandrel is passed into it from one end, and the blank then passed between the welding-rolls, so as to close the joint, when the pipe is complete. The number of heats that may be given the blank while going through the above-described process will be governed by circumstances.

I am aware that attempts have been made to form pipes by rolling the blank so as to form the grooves and ridges, as above described, and then lapping the same in a spiral direction, and this I disclaim.

Where the lap is made spirally, a great length of metal is required, the rolls tear the joint asunder, as it runs at an angle to the plane of motion, and then but very short lengths of pipe can be made, while gas-pipes cannot be made at all. My joint is perfectly straight, runs with the plane of motion, and enables me to make pipe of any size and length.

Having thus described my invention, I claim—

The method described of forming pipes by taking a blank the length of the pipe to be formed, rolling grooves in its edges, bending it into a circular form, and passing it through suitable welding-rolls, the joint being perfectly straight, so as to run with the plane of motion in welding, substantially as specified.

In testimony whereof I, the said WILLIAM L. McNAIR, have hereunto set my hand.

WILLIAM L. McNAIR.

Witnesses:
T. B. KERR,
JAMES I. KAY.