W. McKENZIE.

ROLLS FOR REDUCING TUBES.

No. 191,875. Patented June 12, 1877.

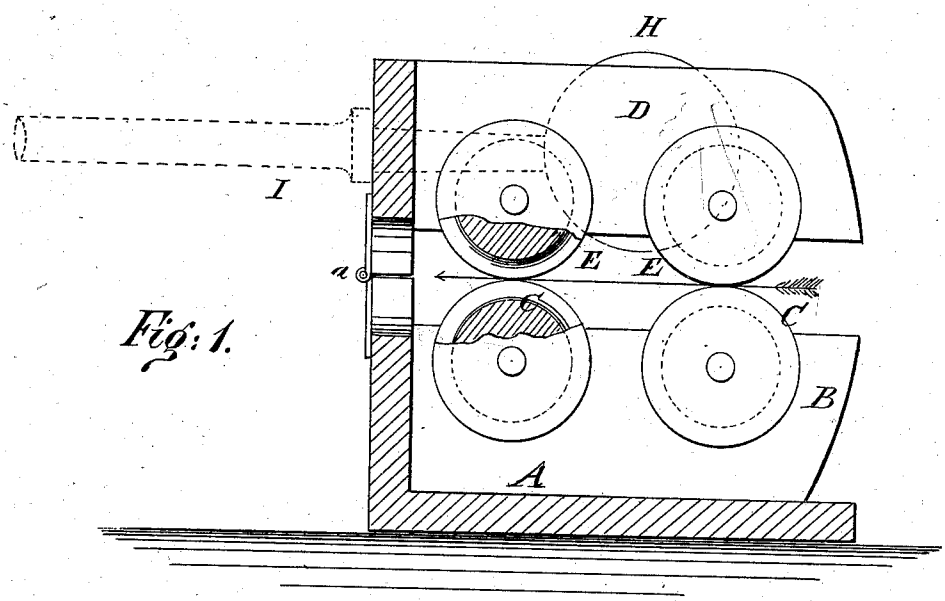


Fig: 1.

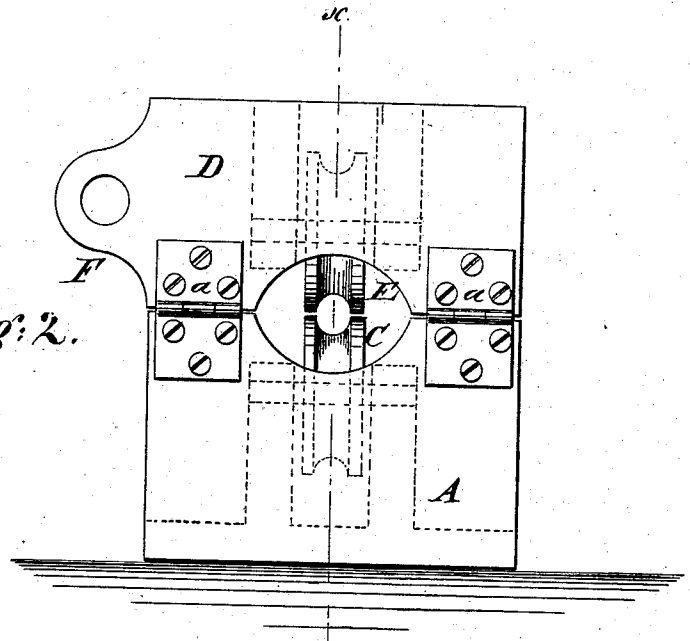


Fig: 2.

WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM McKENZIE, OF NEW YORK, N. Y.

IMPROVEMENT IN ROLLS FOR REDUCING TUBES.

Specification forming part of Letters Patent No. **191,875**, dated June 12, 1877; application filed December 9, 1876.

To all whom it may concern:

Be it known that I, WILLIAM McKENZIE, of the city, county, and State of New York, have invented a new and useful Improvement in Rolls for Reducing Tubing, of which the following is a specification:

Figure 1 is a side elevation, in part section, on line *x x*, Fig. 2. Fig. 2 is a front elevation.

Similar letters of reference indicate corresponding parts.

The object of my invention is to reduce the size of tubing by drawing it between loose rollers while hot; and it consists in the arrangement of one or more pair of rollers in a hinged frame, which is capable of adjusting itself so that the distance between the rollers may be varied to accommodate pipes of different sizes.

In the drawing, A is the fixed bed-piece, which is provided with the supports B, in which the rolls C C are journaled. D is a frame hinged to the front of the bed-piece A at *a*, and in which the rolls E E are journaled. An ear, F, is formed at one side of the frame D, through which a lever, I, passes. The outer end of the lever is formed into a handle, by means of which the upper rolls are moved. The inner end is provided with a weight, H, which assists in bringing the rolls down upon the pipe. The rolls C and E are provided with semicircular grooves in their peripheries, the size of which is equal to the semi-circumference of the finished tube. Two or more of the grooved rollers may be used in the machine.

The tubes to be reduced in diameter are heated to a welding heat, and are placed between the rolls and drawn through by means of tongs, the rolls being forced together by the lever I. The tube is passed through the rolls a number of times, being each time shifted on its axis until it assumes a cylindrical form, and is of the desired size.

The machine herein described is particularly adapted to reducing old and worn boiler-tubes. The rolls upset the material of the tube, not only making it thicker, but also improving the quality of the iron, making it finer and more homogeneous.

The tube may be heated and reduced a part at a time, or it may be heated throughout its entire length, and reduced at one operation without reheating.

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

The combination of two or more grooved rollers, C E, the fixed support B, and the hinged frame D, substantially as herein shown and described.

WILLIAM McKENZIE.

Witnesses:

C. SEDGWICK,

ALEX. F. ROBERTS.