

(No Model.)

W. A. McCool.

DIE FOR FORMING GROOVED METAL BARS.

No. 364,125.

Patented May 31, 1887.

Fig. 1.

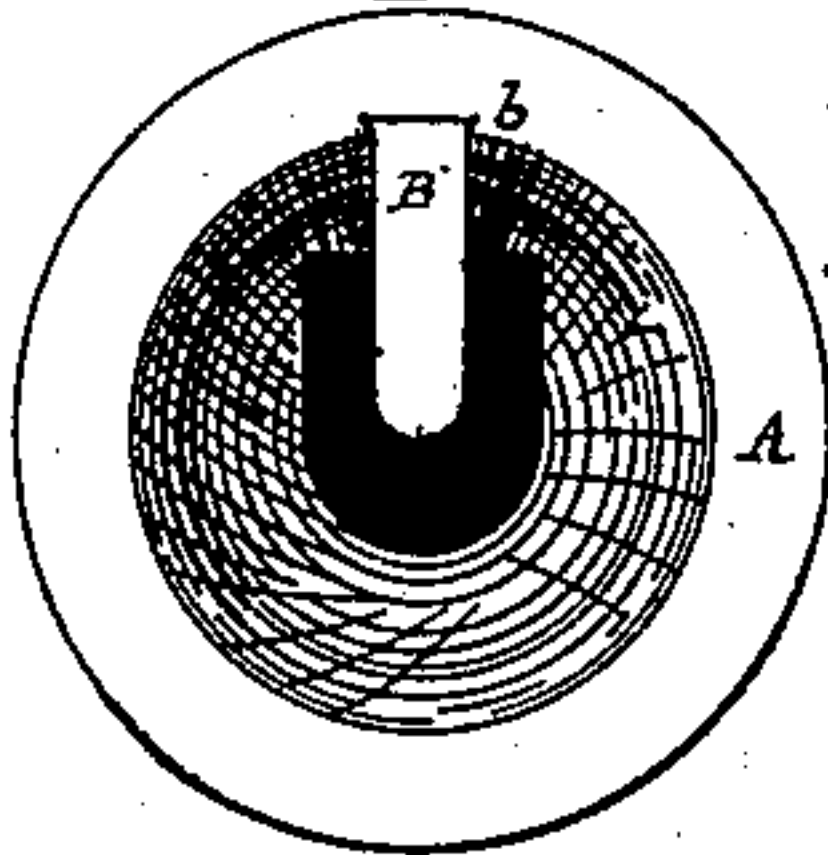


Fig. 2.

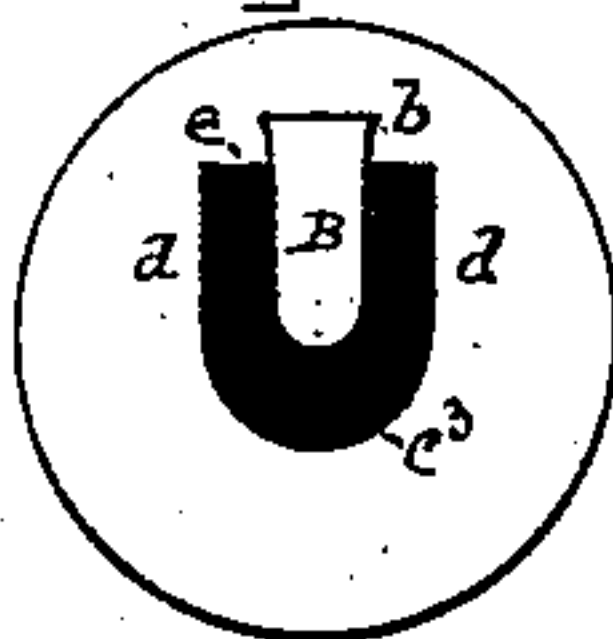


Fig. 6.



Fig. 7.



Fig. 3.

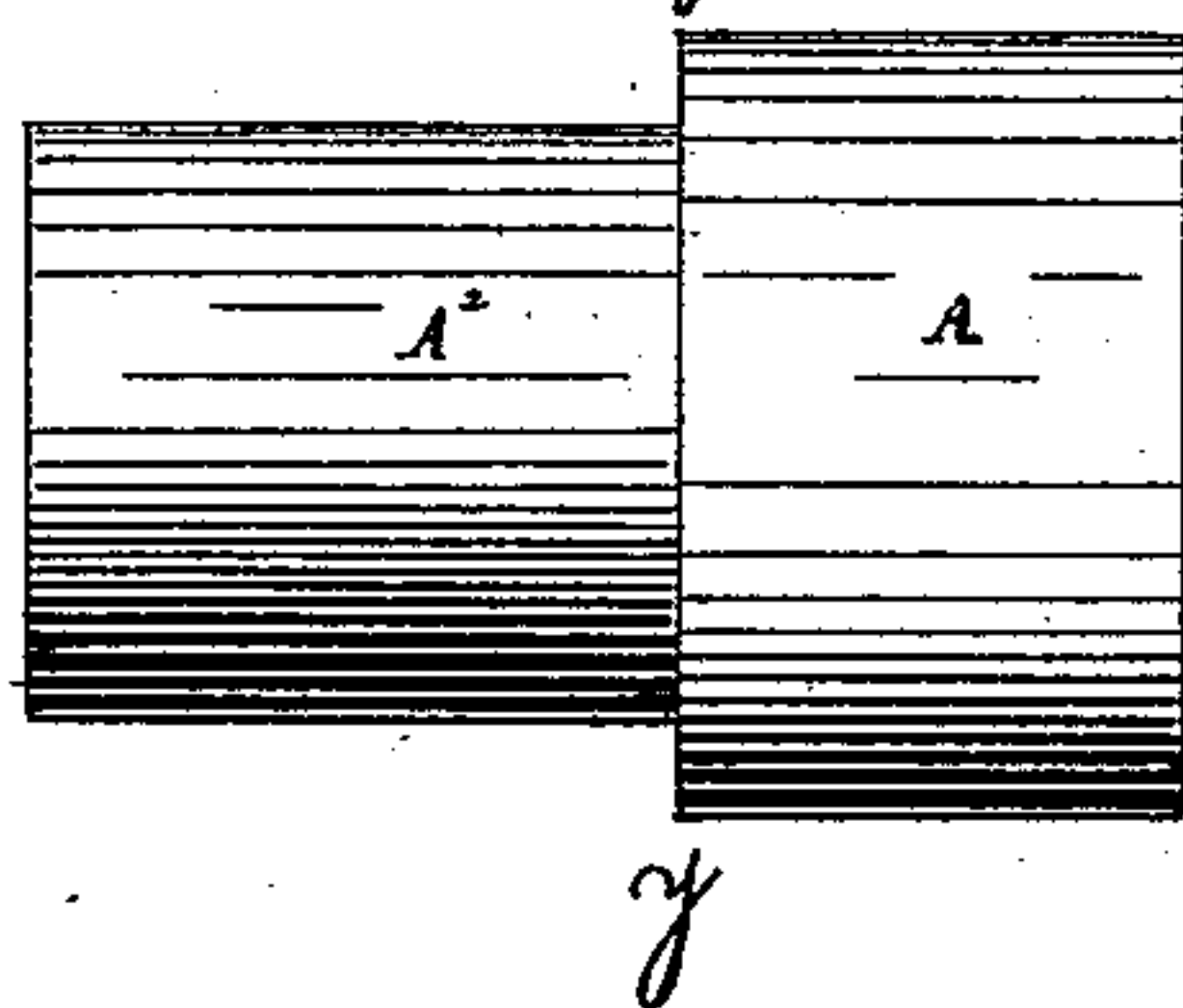


Fig. 4.

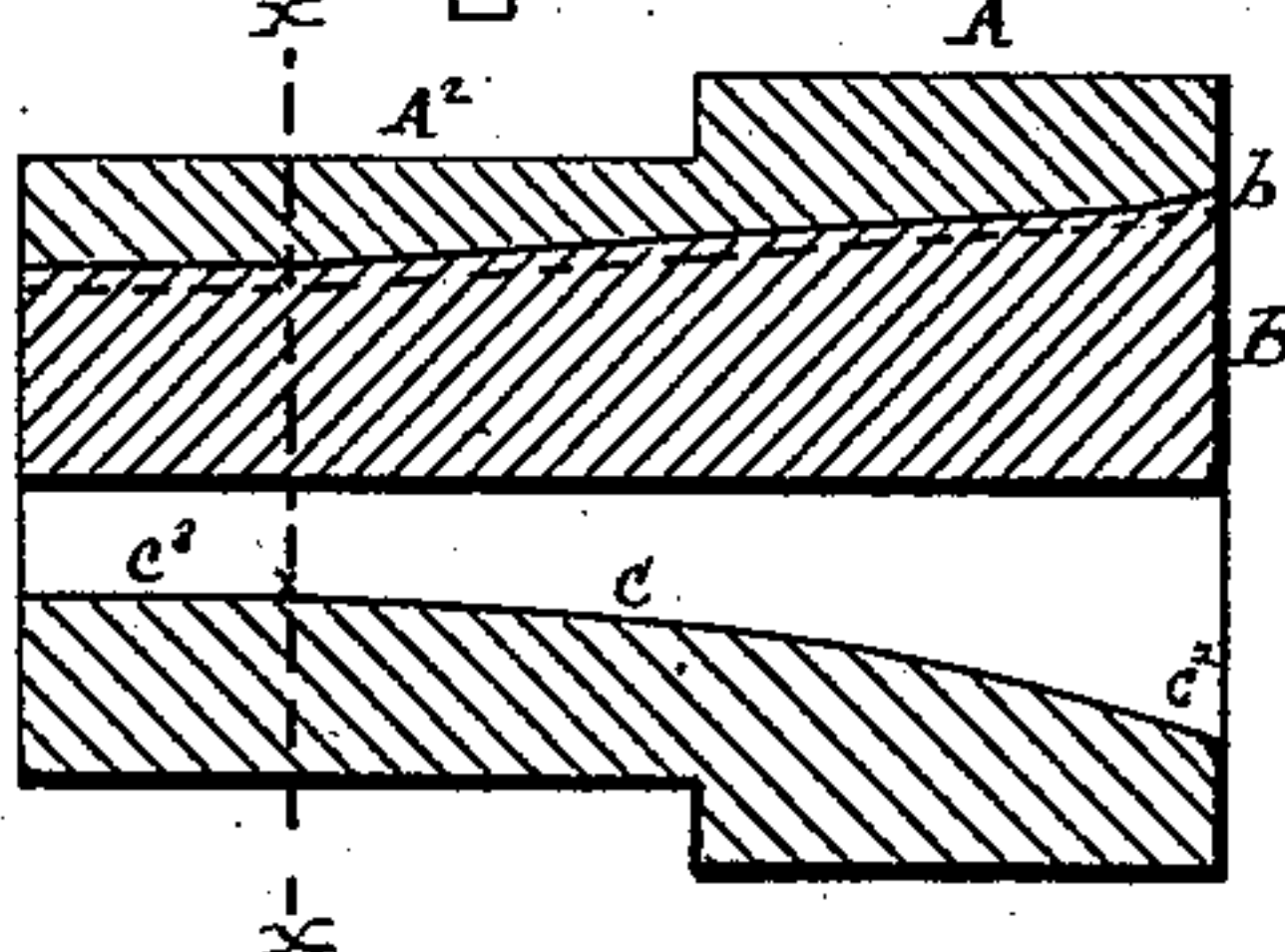
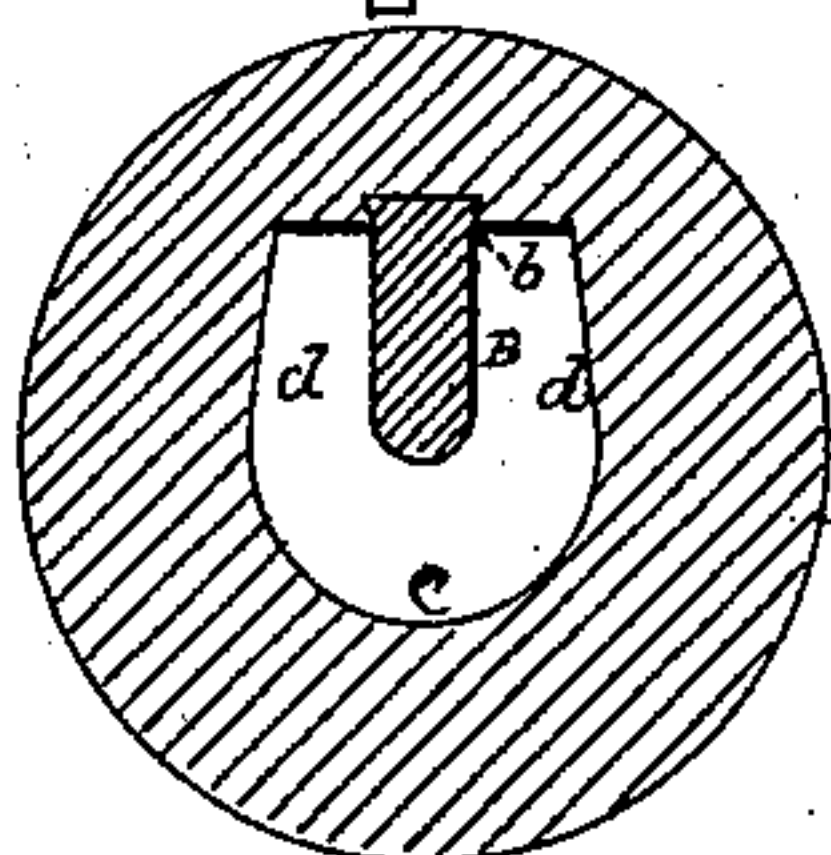


Fig. 5.



WITNESSES:

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INVENTOR

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# UNITED STATES PATENT OFFICE.

WILLIAM A. MCCOOL, OF PERRYSVILLE, OHIO.

## DIE FOR FORMING GROOVED METAL BARS.

SPECIFICATION forming part of Letters Patent No. 364,125, dated May 31, 1887.

Application filed September 29, 1886. Serial No. 214,827. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. MCCOOL, a citizen of the United States, residing at Perrysville, Ashland county, State of Ohio, have invented a new and useful Improvement in Dies for Forming Grooved Metal Bars, and more especially adapted to the manufacture of the peculiar form of grooved metal rod shown in Letters Patent No. 328,797, granted to me October 20, 1885, of which the following is a specification.

The object of my invention is to provide a die that will turn up the edges of a strip of metal drawn through it and form therefrom a grooved rod of perfect uniformity and finish with the least possible friction and wear upon either die or rod. I accomplish this result by constructing my die or former as shown. The interior is convexly curved, terminating at the exit end in a small portion with sides which have become parallel lines, a tongue with a rounded edge being inserted in the upper part of the opening and held securely by a dovetail or otherwise. This die may be constructed in numerous forms involving the same principle.

In the drawings, Figure 1 is a front view of the die or former, the portion in full block indicating the opening at the exit end. Fig. 2 shows the exit end. Fig. 3 is a side elevation. Fig. 4 is a vertical longitudinal section. Fig. 5 is a section on the line  $y y$  of Fig. 4. Fig. 6 is a cross-section of the metal strip before drawing, and Fig. 7 is a cross-section of the finished grooved rod.

A is the body of the die at the entrance end.  $A^2$  is the body of the die at the exit end. There is an offset to hold it in the drawing-block of the machine.

B is the tongue, held by the dovetailed edge  $b$  to the body  $A^2$ .

$c$  is the curved inner surface of the die at the bottom, beginning at  $c^2$ , with an entrance curve reaching the true acting portion at  $c$  and becoming a portion of a cylinder at  $c^3$ .

$d$  indicates the vertical sides, which begin curved at the entrance and gradually flatten out until they reach the exit end as plane surfaces. The top is flat almost immediately after leaving the entrance end of the die.

The piece of metal to be shaped is tapered and bent, so as to be easily drawn through the die by hand. It is then seized by the jaws of the grip and pulled through. As it passes, the sides are gradually and easily caused to take the form of a trough, until in passing out at the exit end the form is made perfectly uniform. The curves are so designed that comparatively little friction results, as is evident to all acquainted with the art of metal-drawing.

I claim—

The die for shaping or forming grooved metal rods, provided with a large opening at the receiving end, the flat top, sides, and bottom gradually converging to form the exit end, and provided with a tongue hanging vertically from the top of the die and extending longitudinally therein the full length of the die to form the groove, the sides and bottom of the die and the suspended tongue coacting to form the grooved metal rod, as described, and for the purposes specified.

WM. A. MCCOOL.

Witnesses:

J. F. MERRIMAN,  
J. P. STEWART.