

(No Model.)

W. VON FLOTOW & H. LEIDIG.

METHOD OF DRAWING TUBES.

No. 391,994.

Patented Oct. 30, 1888.

Fig. 1.

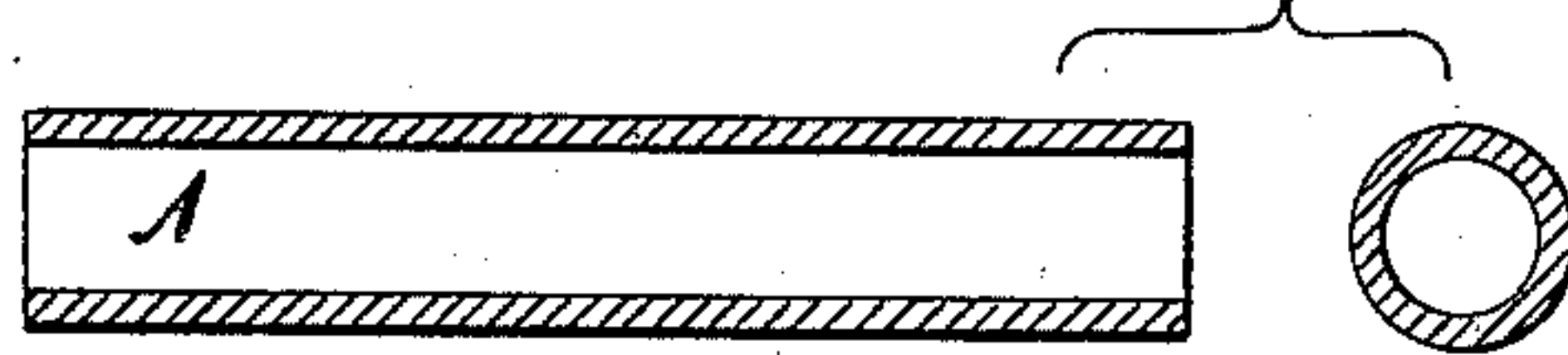


Fig. 2.

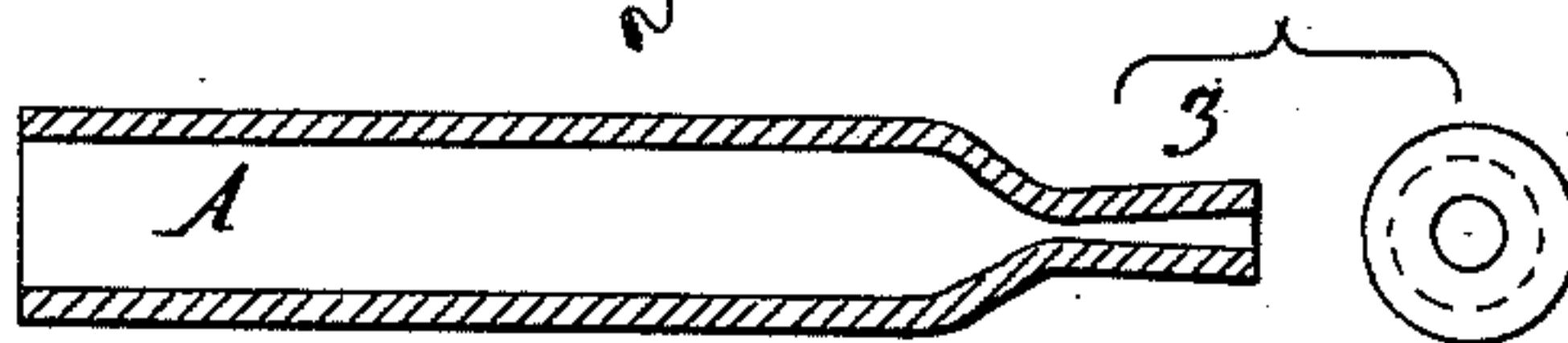


Fig. 3.

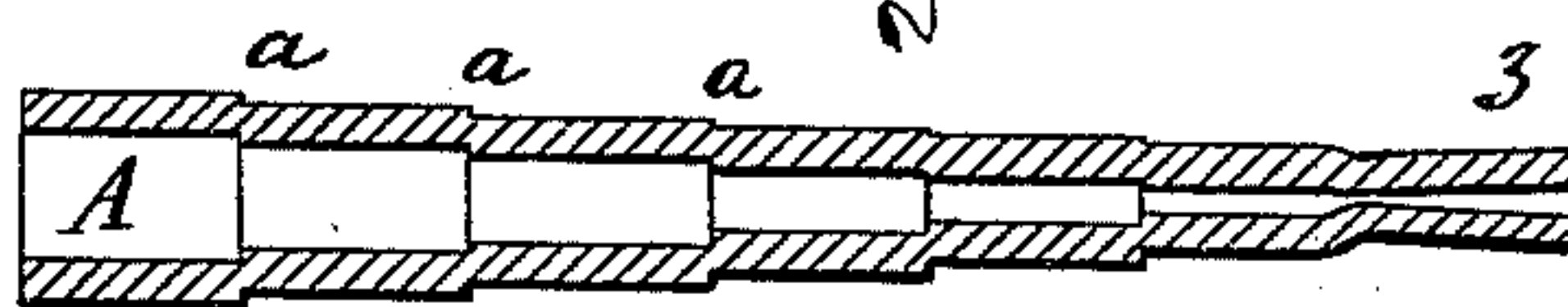


Fig. 4.

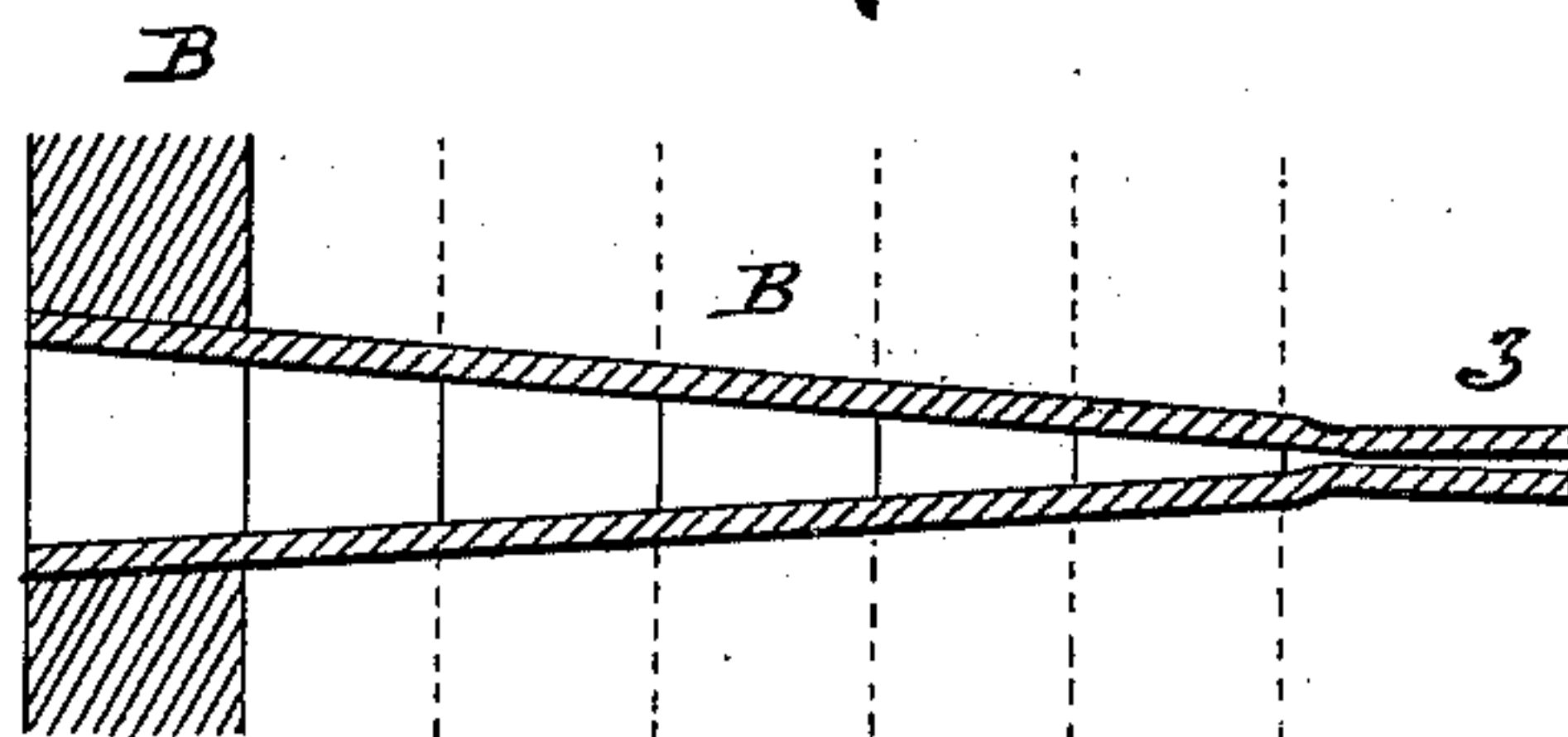
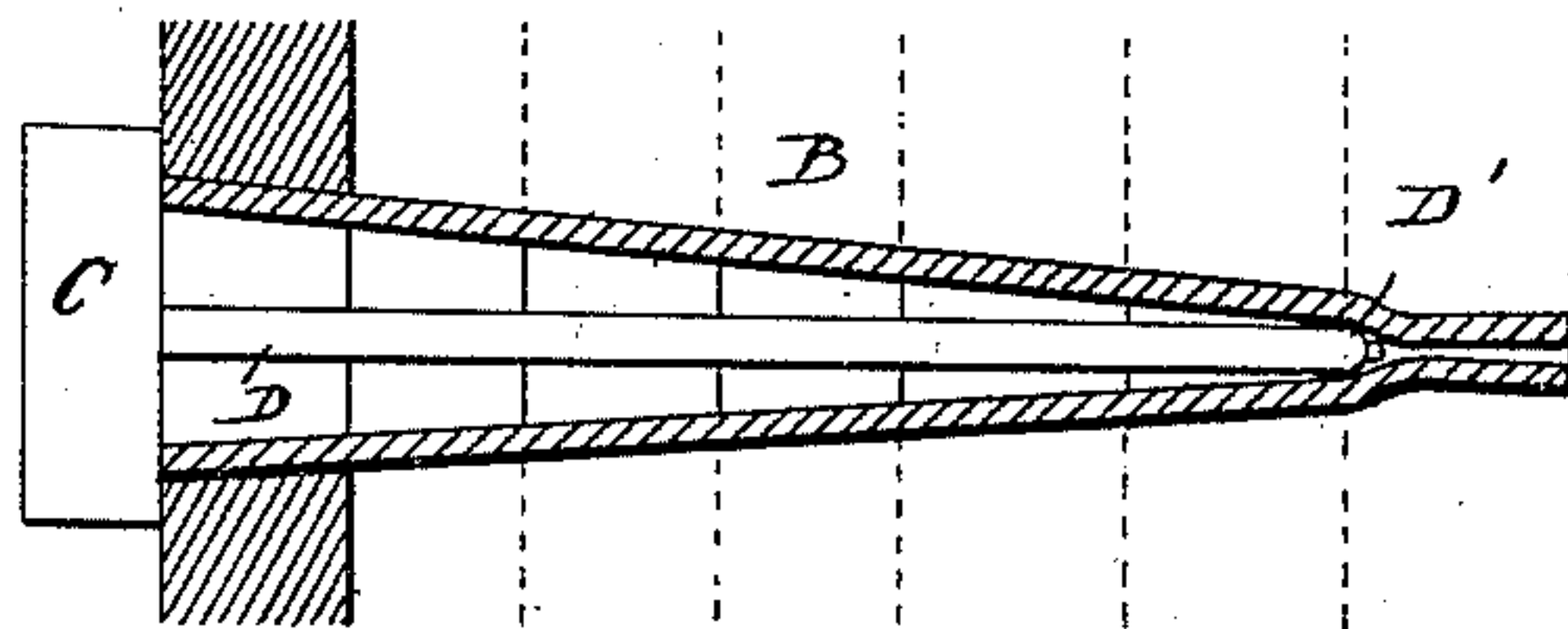


Fig. 5.



WITNESSES:

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WILHELM VON FLOTOW AND HERMANN LEIDIG, OF DANTZIC, PRUSSIA,
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METHOD OF DRAWING TUBES.

SPECIFICATION forming part of Letters Patent No. 391,994, dated October 30, 1888.

Application filed May 7, 1887. Serial No. 237,504. (No model.) Patented in Germany March 15, 1887, No. 42,139; in France April 8, 1887, No. 182,751; in England April 9, 1887, No. 5,268; in Belgium April 12, 1887, No. 77,029; in Italy May 10, 1887, No. 21,508, and in Austria-Hungary August 27, 1887, No. 18,195 and No. 19,235.

To all whom it may concern:

Be it known that we, WILHELM VON FLOTOW and HERMANN LEIDIG, both subjects of the Emperor of Germany, residing at the city of Dantzic, in the Kingdom of Prussia, Empire of Germany, have invented certain new and useful Improvements in Drawing Seamless Metal Tubes, of which the following is a specification.

For this invention we have obtained patents in the following countries: in Belgium, No. 77,029, dated April 12, 1887; in England, No. 5,268, dated April 9, 1887; in France, No. 182,751, dated April 8, 1887; in Italy, No. 21,508, dated May 10, 1887; in Austria-Hungary, No. 18,195 and No. 19,235, dated August 27, 1887, and in Germany, No. 42,139, dated March 15, 1887.

The object of our invention is to draw in a cold state tubes the diameter of which decreases successively in offsets.

The invention consists in drawing a tube in a cold state successively through openings of decreasing diameter.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of the blank for drawing a tube the diameter of which decreases successively in offsets. Fig. 2 is a similar sectional view of the blank tube prepared for the drawing operation. Fig. 3 is a similar sectional view of the tube after it has been drawn. Figs. 4 and 5 are similar sectional views of the tubes, showing the dies used and showing different methods of drawing the tubes.

Similar letters of reference indicate corresponding parts.

One end of the blank tube A is reduced in diameter to form the holding-lug z for the drawing-tool. The tube A is then drawn in a cold state successively through a series of dies, the diameter of the opening of each die being slightly smaller than that of the preceding die,

and so on, whereby a tube is obtained, as shown in Fig. 3, said tube having a series of annular offsets, a , and at each offset the diameter of the tube decreases slightly. The tube is not drawn entirely through each die, but through the first die it is drawn to within a short distance of the larger end. Through the second die it is drawn to within twice this length from the larger end, through the third die to three times the distance from the larger end, and so on. The offsets on the inside and outside can then be turned or ground off.

As shown in Fig. 4, the dies B can be made tapered on the inside, so as to reduce the height of the offsets, or to make a tapered tube without offsets, the inclination of the several dies being alike.

If desired, a rod, D, (shown in Fig. 5,) may be inserted in the tube A in such a manner that the offset D' at its free end rests against the front contracted end of the blank. By means of the head C pressure is exerted on the opposite end of the said rod and thereby the blank is drawn through the several dies.

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

The method, substantially as herein shown and described, of drawing tubes having successively-decreasing diameters, consisting in successively drawing the different parts of the length of the tube through different dies having openings of different diameters, substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILHELM VON FLOTOW.
HERMANN LEIDIG.

Witnesses:

LOUISE KURTZ,
ERDMANN.