

M. VON CULIN.

Machines for Forming Seamless Cans.

No. 143,735.

Patented Oct. 14, 1873.

Fig. 1.

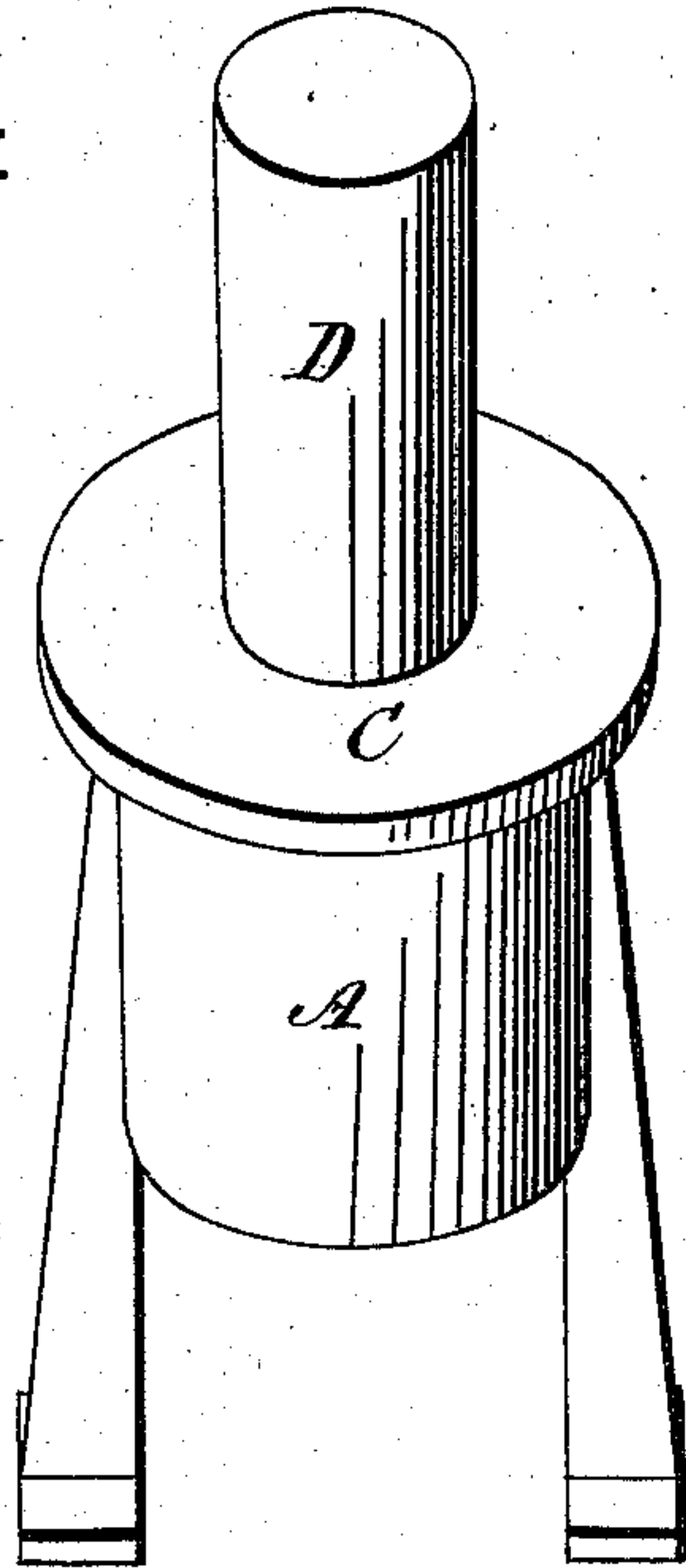


Fig. 3.

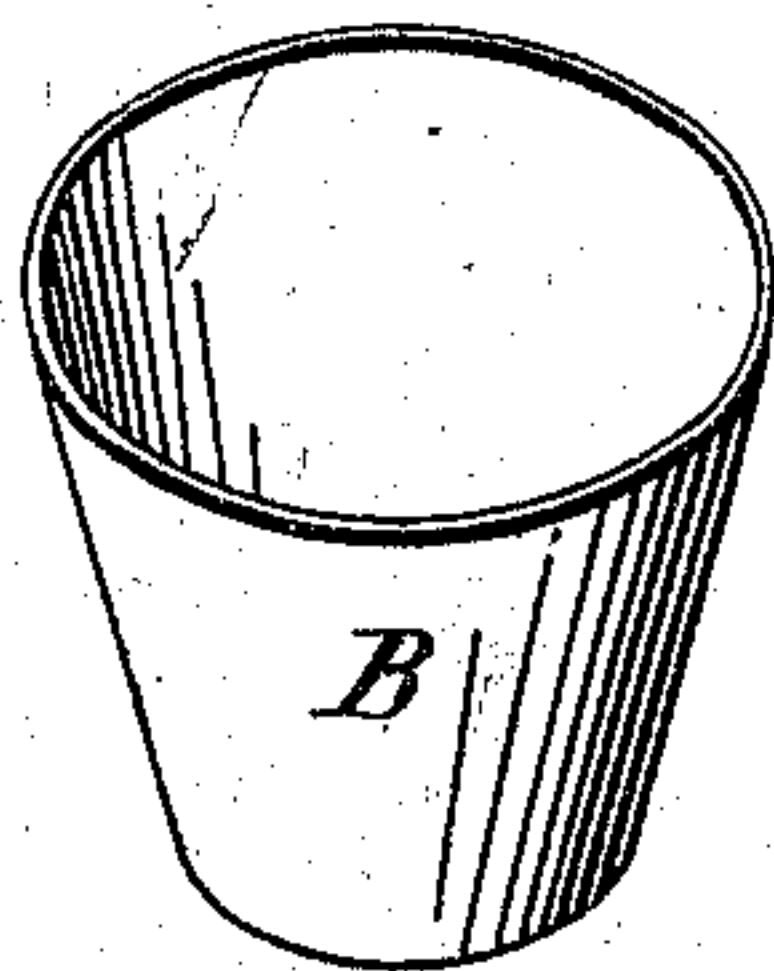
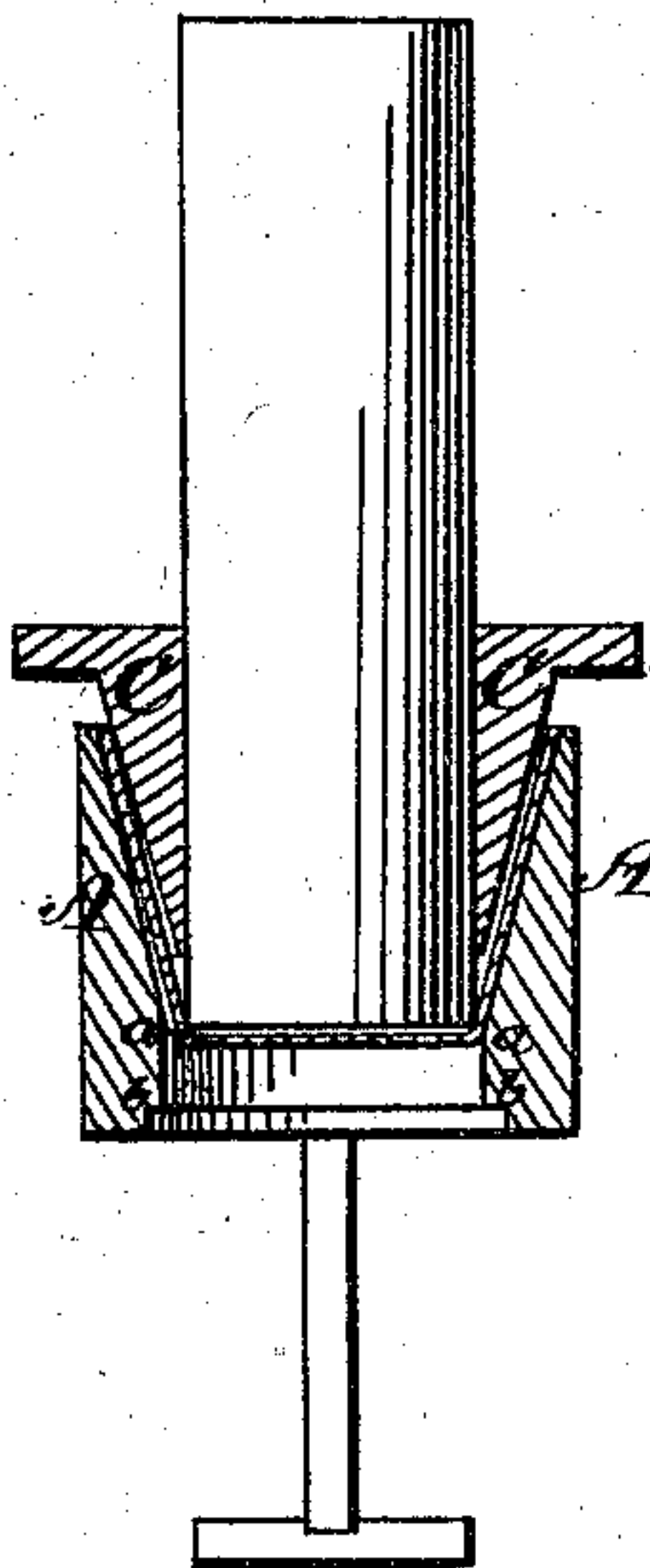


Fig. 2.



Witnesses

Jas. Hutchinson
Chas. C. Opperman

Inventor.

Matthew Von Culin
By J. H. Opperman

Attorney.

UNITED STATES PATENT OFFICE.

MATTHEW VON CULIN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR, BY
MESNE ASSIGNMENTS, TO EWALD RIEDEL AND JOSEPHINE E. ROEBLING,
OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR FORMING SEAMLESS CANS.

Specification forming part of Letters Patent No. **143,735**, dated October 14, 1873; application filed
March 17, 1873.

To all whom it may concern:

Be it known that I, MATTHEW VON CULIN, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Process and Apparatus for Making Seamless Cans; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

The nature of my invention consists in a process and apparatus for manufacturing seamless cans with vertical sides, and of a height less than, equal to, or exceeding, the diameter, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe my process, as well as the construction and operation of my apparatus, referring to the annexed drawing which forms a part of this specification, and in which—

Figure 1 is a perspective view, and Fig. 2 a vertical section, of my apparatus. Fig. 3 represents the blank as it is before it passes through my machine.

My process for making the peculiar cans above mentioned consists of two operations: First, the blank is formed into a vessel with flaring sides, of the form shown in Fig. 3. This is done by a machine now in common use for forming vessels of that shape, and hence I do not claim this part by itself as my invention. Second, the blank or vessel formed as above is placed in a suitable apparatus, and by a single blow of a plunger it is forced through a die, the bend given to the blank in the first step of the process being retained, which draws the flaring sides out, so that when the vessel leaves the die it is, so to say, transformed into a can with vertical sides, and said sides of a height equal to or exceeding the diameter of the can.

The apparatus used by me to carry out this process is constructed as follows:

A represents the die, the interior of which

is made flaring, as shown, except a short portion from *a* to *b* at the lower end, and this portion is made vertical. Below this, at *b*, is formed a rabbet or offset, as shown particularly in Fig. 2, and hereinafter more fully described. The blank B, formed according to the first part of my process, is placed in the die A, and the blank-holder C is set in the blank and held down tight. The exterior surface of the blank-holder corresponds with the flaring sides of the die and blank, and it holds the metal against the die to prevent its wrinkling while it is being pushed through the straight part of the die by the plunger. D represents the plunger, which comes down through the blank-holder, and presses the blank B into the straight part *a b* of the die, and as it passes by the corner *a* the blank becomes straight and forms to the plunger.

When the plunger strikes the blank, it pulls the same gradually from between the die and the blank-holder, and as it comes out and passes over the corner *a* it is perfectly smooth. After it is entirely through past the corner *b*, the plunger rises and the completed can strikes said corner, and is thereby pulled from the plunger.

By this process, and by the use of my apparatus, articles of sheet-iron, or tinned sheet-iron, may be manufactured with sides at right angle to the bottom, as deep as the diameter; and by this I can also make them deeper than the diameter. Furthermore, it is a much more economical way for making shallower goods than any heretofore used, because with other machines making shallow ware many blanks are broken, while with mine none are broken, unless there is a flaw in the metal.

With my machine I can make this class of goods—that is, seamless cans, &c., having vertical sides—from any kind of metal, and of any depth whatever, first having formed the metal in a vessel with flaring sides by the machine now in common use.

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

1. The method herein described for forming

seamless cans or other ware with vertical sides from sheet metal, by first forming a vessel with flaring sides, and then, by one operation of a plunger, forcing the same through a die of the construction described, and retaining the same bend in the blank, substantially as set forth.

2. The flaring-mouthed die A, having the vertical portion *a* *b*, and a shoulder or offset

at the bottom, in combination with the blank-holder C and plunger D, constructed as described, and for the purpose specified.

In testimony whereof I have hereunto signed my name.

MATTHEW VON CULIN.

Witnesses:

JNO. M. McCURDY,

ROBT. McCURDY.