J. PEDDER & G. ABEL

MACHINES FOR BEVELING CIRCULAR PLATES.

No. 180,915. Patented Aug. 8. 1876.

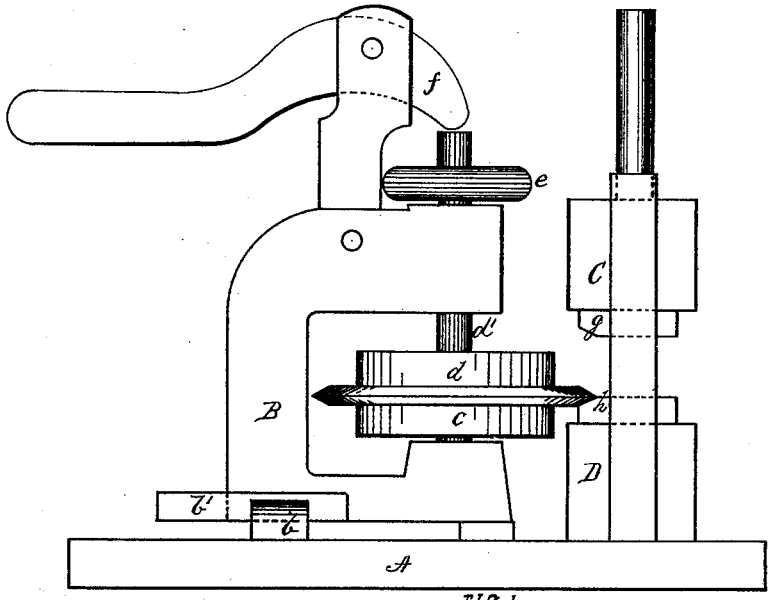

FIG. 1.

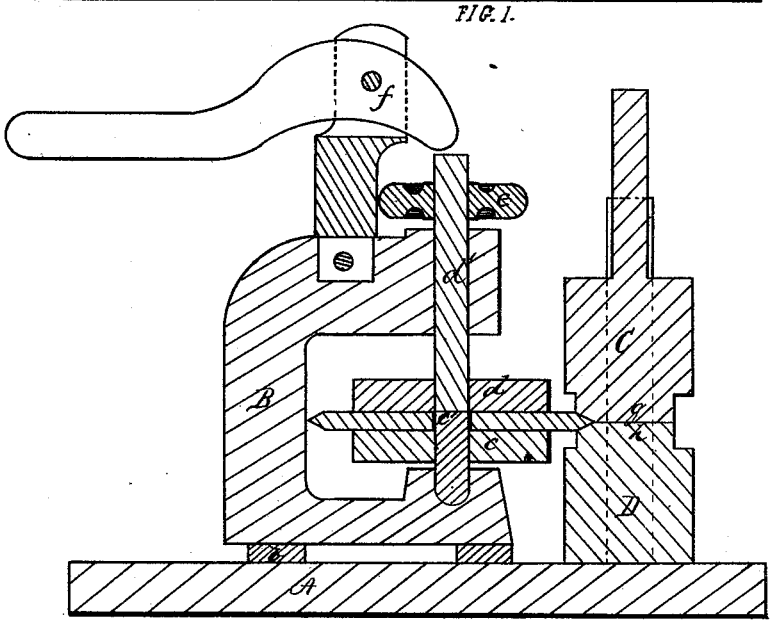

FIG. 2.

WITNESSES.

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UNITED STATES PATENT OFFICE.

JOHN PEDDER AND GEORGE ABEL, OF BEAVER FALLS, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR BEVELING CIRCULAR PLATES.

Specification forming part of Letters Patent No. **180,915**, dated August 8, 1876; application filed July 28, 1876.

To all whom it may concern:

Be it known that we, JOHN PEDDER and GEORGE ABEL, of Beaver Falls, in the county of Beaver and State of Pennsylvania, have invented a new and useful Improvement in Machines for Beveling Circular Metallic Blanks; and we 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 elevation, and Fig. 2 is a longitudinal section, of a machine embodying our invention.

Like letters of reference indicate like parts in each.

Our invention relates to the construction of machinery for beveling the peripheries of circular metallic blanks, such as rotary cutters or colters; and consists in combining a holder, having a fixed center for preserving the relative position of the blank, with a set of swaging beveling-dies, which act upon the blank without displacing or distorting it.

The methods heretofore adopted for beveling rolling cutters and other similar circular blanks are as follows: First, by submitting the edge of the blank to be beveled to the action of dies in a hammer or press, the blank being held in position and guided by the operator with tongs or pinchers; secondly, by the continuous passing of the edge of the blank between beveled rollers; and, thirdly, by grinding the periphery of the blank.

The first method is objectionable, for the reason that only a portion of the blank can be heated and beveled at one time, and as it is held and guided by the operator in tongs or pinchers the resultant bevel is very irregular, and the body of the blank is left warped and crooked. In the second method it has been found impracticable to provide any devices which will hold the blank in its proper relative position with the rolls. In case a center-pin is used the instant the rollers begin to act the blank is driven against the pin with such force as to elongate or otherwise deform the hole in the center of the blank, and thus so to disturb the relative position of blank and rolls that the bevel will be thick and short where the rolls first commence to operate upon the blank, and long and thin upon the opposite side thereof, much increasing the labor and difficulty of grinding and finishing the blank. Another objection to this method is that the action of the rollers cannot be regulated so as to gradually produce the proper bevel, and therefore many blanks are broken and otherwise injured by the process. The third method, that of grinding the bevel, is the most objectionable of all, on account of the time required, the metal lost, and the amount of grinding material used, all of which combined render it too expensive and tedious to be adopted by manufacturers. Our object, therefore, has been to obtain such a construction and combination of the devices employed as would present the blank uniformly to the beveling-dies, and relieve the blank from any thrust or strain.

We will now proceed to describe our invention, so that others skilled in the art to which it appertains may apply the same.

In the drawing, A indicates a suitable bed, upon which is erected a housing, B, movable and adjustable in guides *b*, and secured by a key, *b'*, or like device. Stepped in the lower arm of the housing is a disk, *c*, having a central pin or projection, *c'*, said disk and pin serving to center and support the blank to be operated upon. Directly over disk *c* is a second or clamping disk, *d*, secured to the end of a sliding shaft *d'*, which is journaled in the upper arm of the housing, the upper end of shaft *d'* being provided with a pulley, *e*, pinion, or like device, for rotating the disks, and is controlled by a lever, *f*, pivoted to the housing B, used to force down the shaft and upper disk, when a blank is in position. *g h* are a set of beveling-dies secured to a hammer and anvil, or a suitable press, C D, and arranged off the center of the holder, so as to act by a vertical drop motion upon the periphery of the blank, so as to avoid any thrusting of the blank against the holder.

The operation of our devices is as follows: The movable housing B having been adjusted, so as to bring the blank-holder in proper relation to the dies to accommodate a blank of the size to operated on, the circular blank to be beveled is heated and placed between the disks on the center-pin, and the lever *f* operated to force the clamping-disk down on the blank. While the blank is thus held, the bev-

eling-dies are caused to act vertically upon the edge of the blank projecting beyond the disks, the disks and blank being revolved during the beveling process, so that the entire projecting edge is acted upon by the dies alike, thus securing a uniform and regular bevel.

The revolving motion of disks and blank may be caused by the rise and fall of the dies, or the dies may be caused to travel around the fixed blank, if preferred.

The essential feature of the machinery employed must, however, be such that the blank is held with a fixed center, and the beveling-dies act vertically (or in line parallel to the axis of the blank) and continuously on the entire periphery of the blank.

The advantage derived from our invention is the rapidity and facility with which a circular blank may be beveled without distorting or injuring the blank.

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

The combination of the blank-holder, having a fixed center, with the beveling-dies, arranged to operate in line parallel to the axis of the blank-holder, substantially as and for the purpose specified.

In testimony whereof we, the said JOHN PEDDER and GEORGE ABEL, have hereunto set our hands.

JOHN PEDDER.
GEORGE ABEL.

Witnesses:
JAMES I. KAY,
F. W. RITTER, Jr.