J. DANGERFIELD & J. NORTON.

Puddlers' Ball-Squeezers.

No. 151,960. Patented June 16, 1874

Fig. 1.

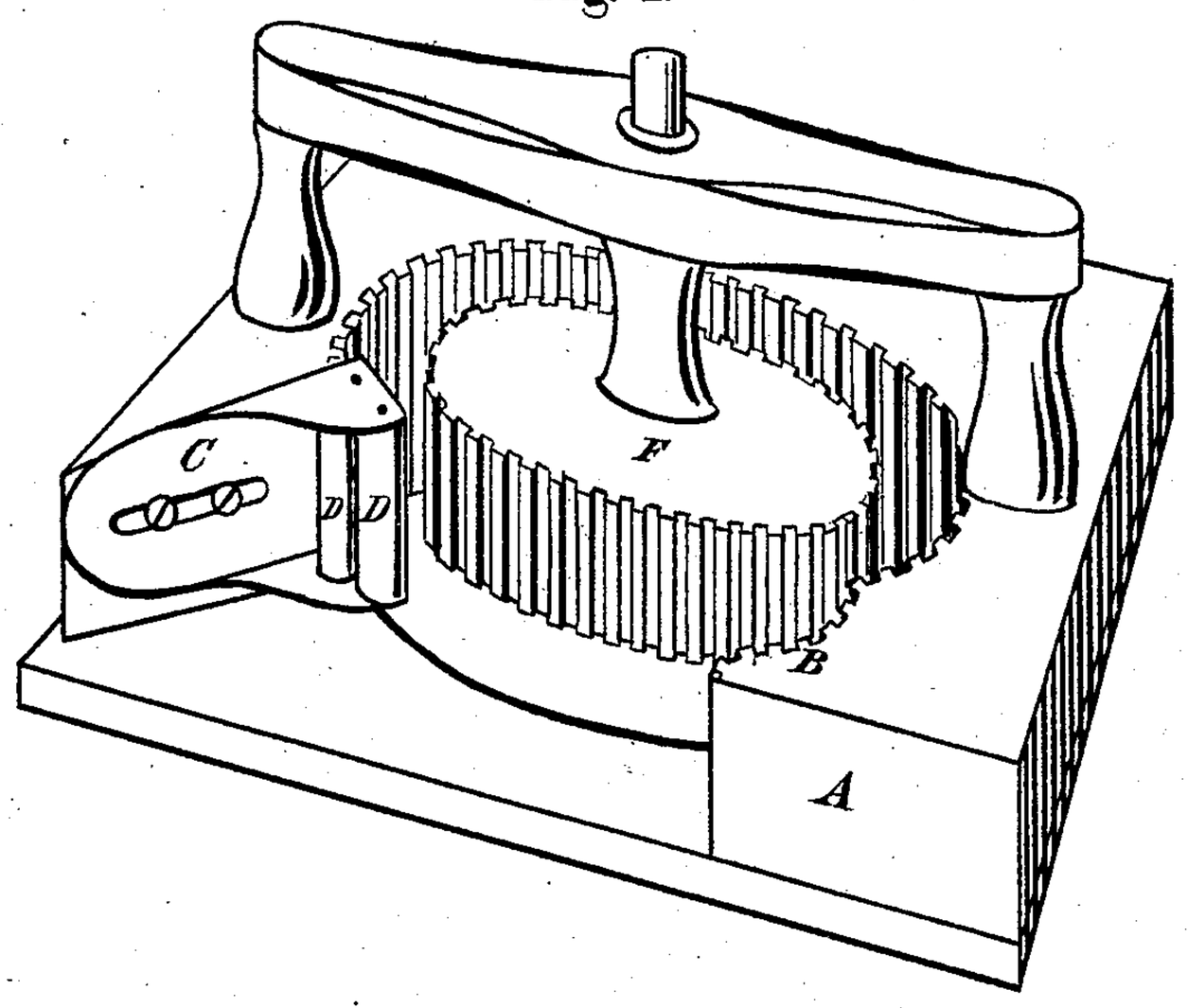


Fig. 2.

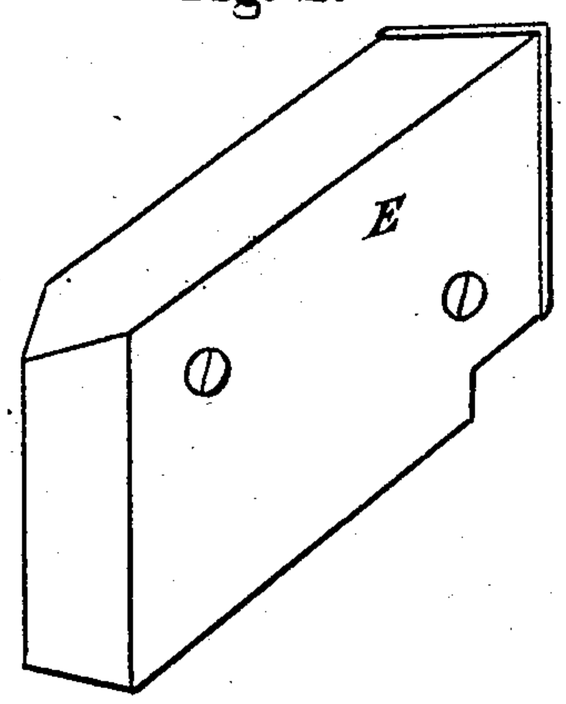
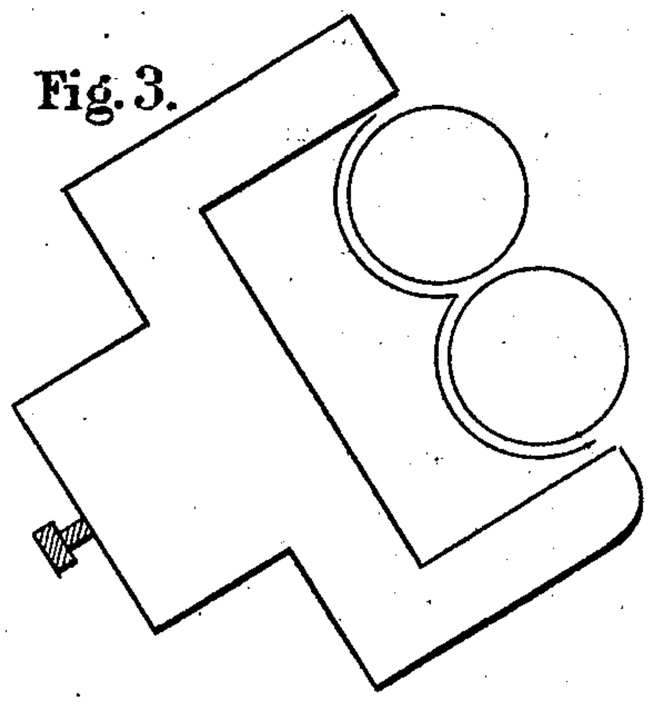


Fig. 3.



WITNESSES.

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JAMES DANGERFIELD AND JOSEPHUS NORTON, OF NEW ALBANY, INDIANA.

IMPROVEMENT IN PUDDLER'S-BALL SQUEEZERS.

Specification forming part of Letters Patent No. **151,960**, dated June 16, 1874; application filed April 21, 1874.

To all whom it may concern:

Be it known that we, JAMES DANGERFIELD and JOSEPHUS NORTON, of the city of New Albany, in the county of Floyd and State of Indiana, have invented a certain new and useful Improvement in a Bloom-Crusher for the use of Mills for Rolling Iron; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings forming part of this specification.

This our invention relates to improvements in a bloom-crusher for the use of rolling-mills, but more especially in a new and novel device, arranged at the discharge side of the crusher, for flattening the bloom as it leaves it preparatory to entering the rolls, by which it is reduced into the form of slabs, by which means much time and labor are saved over and above that required under the old process, where the bloom is discharged in a round form, and therefore must necessarily be passed through the rolls much oftener in order to reduce it to the required thickness. The first part of this our invention consists in a strong bracket, of suitable form, secured to a flange projecting at an angle from the discharge end of the crusher-shell, as shown in the drawings, and is so made as to be adjustable, and is also provided with strong flanges at the top and bottom, in order to answer as the bearings for the journal of two small rolls made to work therein. These rolls may be made of any suitable size or length; but must be made sufficiently strong to resist the pressure required to flatten the bloom, which object may also be accomplished by means of a block with plane surface on the end, forming a wedge or inclined plane, substituted in place of the roll, and fastened in a similar manner. This last-named block is made in form as shown in the drawing; but may be made in any other suitable form. The second part of our invention consists in a peculiar curve in the crusher-shell at the entrance end, in order to give space, and enable the machine more effectually to catch unusually large balls, and cause them to revolve immediately on entering, so as to prevent the machine from tearing them by slipping over them. This peculiar curve is made in form as shown in the drawing; but may be varied to suit the size of balls used, and for other reasons. The object of this our invention is to provide a means of flattening blooms as they leave the crusher, preparatory to rolling them into slabs, in order to obviate the necessity of passing them through the rolls so often to reduce them to the required thickness, and to prevent the machine from tearing the balls on entering, which is accomplished by means of the peculiar curve in the shell at the entrance, as shown in the drawing.

Figure 1 is a perspective view, showing the interior arrangement of an ordinary machine, with the improved attachment, but in other respects imperfect or incomplete. Fig. 2 is a view of the block used to form the wedge or inclined plane when substituted for the rolls. Fig. 3 is a view of the roll-bracket made in another form, showing how the rolls are adjusted by a set-screw.

In the drawing, A is the shell or outer ring of the machine, the outside of which is incomplete, as shown. This ring, when in use, is made of iron, with ribs on the inside, as shown in the drawing, for the purpose of causing the ball to revolve in the machine. B is a peculiar curve in the shell-ring at the entrance end, in order to permit unusually large balls to enter, and assist in causing them to revolve. C is the bracket constituting the roll-bearings, all of which is made of iron in form as shown in the drawing; but may be made as shown in Fig, 3, and adjusted by set-screws behind the bearings. D D are the rolls used for flattening the bloom as it passes out, which may be adjusted to suit any thickness. F is the nut or central part of the crusher, which is also provided with ribs on the face, to cause the ball to revolve. E is a plane-block with a wedge-faced end, to be used as a substitute for the rolls, when required.

Having thus fully described the nature and object of this our invention, its operation is simply that of placing the ball in the machine, which will cause it to revolve around the inner surface, becoming gradually smaller, until it arrives at the point of delivery, where it is suddenly flattened by the rolls as it passes

out. Therefore we do not claim anything as new in the crusher; but

What we do claim as our invention, and desire to secure by Letters Patent, is—

1. The combination, with the crusher, of the rolls D, or equivalent device, located at the point of exit, for the purpose of flattening the bloom as it emerges from the crusher, substantially as described or shown.

2. The curve B in the shell-ring at the entrance, as above described, when arranged, constructed, and operated substantially as and for the purpose hereinbefore set forth.

JAMES DANGERFIELD.
JOSEPHUS NORTON.

Witnesses:
FRANK PARDON,
CHARLES SWETNER.