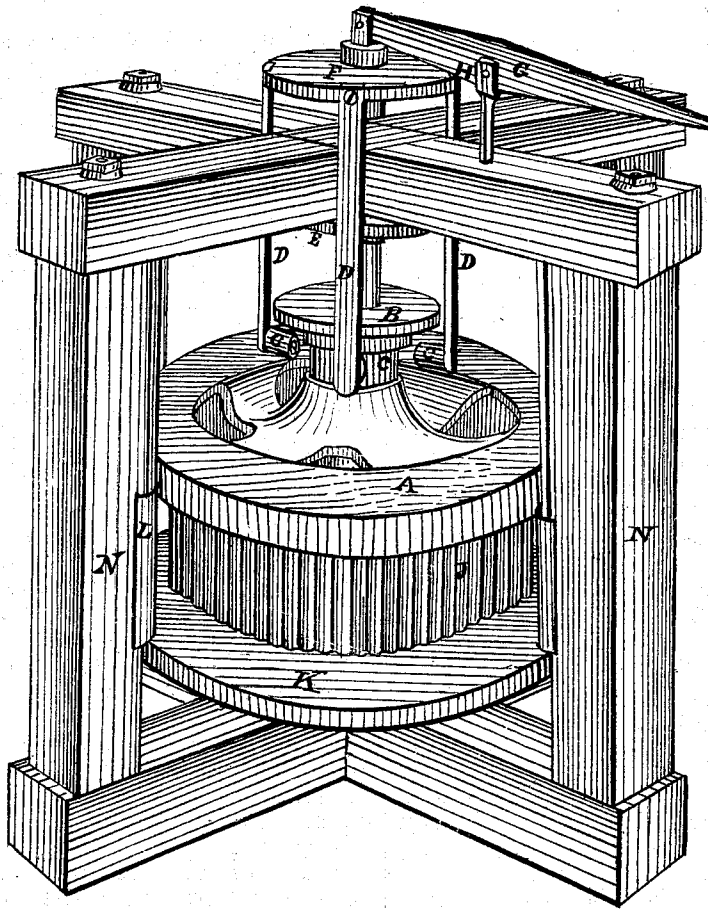


JAMES DANGERFIELD.

Improvement in Machines for Compressing Puddlers' Balls.

No. 125,181.

Patented April 2, 1872.



WITNESSES;

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JAMES DANGERFIELD, OF NEW ALBANY, INDIANA.

IMPROVEMENT IN MACHINES FOR COMPRESSING PUDDLERS' BALLS.

Specification forming part of Letters Patent No. 125,181, dated April 2, 1872.

Specification describing certain Improvements in Machines for Forming Blooms from the Balls of Puddled Iron preparatory to entering the rolls of the mill, invented by JAMES DANGERFIELD, of the city of New Albany, in the county of Floyd and State of Indiana.

This invention consists more especially in the loose adjustable flange or upsetter on the upper edge of the inner roll or crusher. The base-frame of this machine is made of iron, somewhat in the form of a cross or four-armed center, with a large round hub in the center, which is made to answer as a step for the end of the upright shaft. The arms of this last-named base-frame are made very strong, and an upright post is fastened on the extreme end of each arm, extending up above the inner roll or crusher, and connected at the top by means of a cross-frame, made somewhat similar in form to the one at the bottom. This cross-frame has a large hub in the center, which is bored out to fit neatly over the upright shaft, in which it is made to work and by which it is kept in its place. There is also secured to the inside of the upright posts a large heavy cast-iron ring, made open at one side for about two or three feet as a space for the ball to enter and be discharged. One side of this ring is slightly closed in, similar to a scroll, in order to decrease the space gradually from the entrance to the discharge side, so that the bloom may be reduced in size as it passes around, the face or inside of the ring being slightly corrugated to make it take hold of the ball. The inner roll or crusher of the machine is made of cast-iron in the form of a wheel or ring, about four feet in diameter and sixteen inches across the face, which face is slightly corrugated, and has a strong heavy flange cast on the lower edge sufficiently wide to fill up the space between the outside ring and the crusher, which crusher-ring is fastened to a strong center, which is keyed on the upright shaft, but not so shown in the model. This last-named crusher-ring has a strong heavy flange or upsetter on the top, projecting about five or six inches beyond the face, but is made separate from the crusher, and has arms in the center, which are depressed or sunken on the top to make room for the friction-rollers, by which it is held up, and has a large hub in the center, which is bored out so as to fit neatly over the

upright shaft of the crusher in such a manner as to slide up and down easily. The under side of the rim or flange is recessed about two or three inches deep so as to slip over the crusher-ring easily, and has a wide strong flange cast on the top of this center hub, projecting about four or five inches, as a means by which the upsetter is held up and made to work on friction-rollers about four inches long, and four in number, working loose on strong pins in the lower end of hangers made of plain flat bars of iron, with the upper ends bolted to a round plate over the top of the frame, which plate is made large enough to permit the bars to pass the frame below, and are prevented from turning or twisting by a round plate of iron fastened under the frame, with notches cut in the edge for the bars to work in, which keep them firmly in their places as the flange turns on the rollers, by which the upsetter is raised or lowered, which is done by means of a lever fastened to the top of the hanger-plate, working over a stand on the top of the frame, and is operated by hand, while the machine is driven by any kind of power, applied by means of bevel-gearing under the crusher; but, instead of using the hangers, as above described, the upright shaft of the crusher may be made hollow, with slot-openings at the sides above the flange, and a spindle fitted into it so as to slide up and down, with a corresponding slot-hole through the lower end of the spindle, and a strong piece of iron inserted therein, with the ends projecting beyond the flange in such a manner as to be susceptible of having the friction-rollers attached thereto in order to answer the same purpose as the first-described arrangement.

The object of my invention is to provide a machine that is at all times reliable and will most fully answer the purpose for which such machines are usually intended to be used without danger of crushing or tearing the ball to pieces or breaking the machine, which is frequently the case with the style of machines now in use, particularly when a ball of unusual size is introduced, which is frequently the case; and if both flanges of the crusher are stationary without the means of yielding to the excess in size, either the machine must give way or the ball be torn to pieces; but by the use of my invention no such accidents can occur,

from the fact that the upper flange of the crusher is made separate and will yield to the unusual pressure and accommodate itself to the size of the ball without danger of injury.

Having thus fully described the nature and object of my invention, a more thorough understanding thereof may be had by reference to the drawing.

The drawing is a perspective view of the machine, showing the adjustable flange on the crusher and the fixtures by which it is operated.

In the drawing, A is the adjustable flange or upsetter. B is the flange on the hub of the same, by which it is held up. C C C are the friction-rollers, on which it rests. D D D are the hangers, to which they are attached. E is the plate, by which they are kept from twisting as the flange turns on the rollers. F is the plate above, to which the hangers are bolted. G is a lever, by which the whole fixtures are

operated. H is the lever-stand or fulcrum. J is the crusher of the machine. K is the lower flange. L is the outside ring. N is the frame of the machine.

Therefore I make no claim to the inner roll or crusher, or the outside ring, and other fixtures belonging thereto, which constitute the lower part of the machine; but

What I claim as my invention, and desire to secure by Letters Patent, is—

The adjustable flange A with its hub-flange B and hangers D D D with their friction-rollers C C C, plates E and F, and also the lever G with its stand H, when arranged, constructed, and operated substantially as and for the purpose hereinbefore set forth.

JAMES DANGERFIELD.

Witnesses:

E. F. HUYCK,
P. McCANN.