

M. BLAKEY.

MACHINE FOR CORRUGATING PIPE-SOCKETS.

No. 191,220.

Patented May 29, 1877.

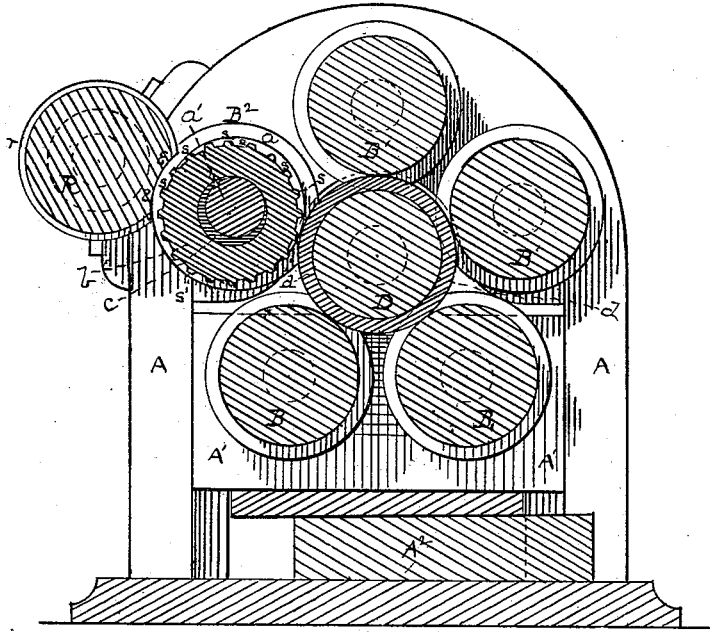


Fig. 1.

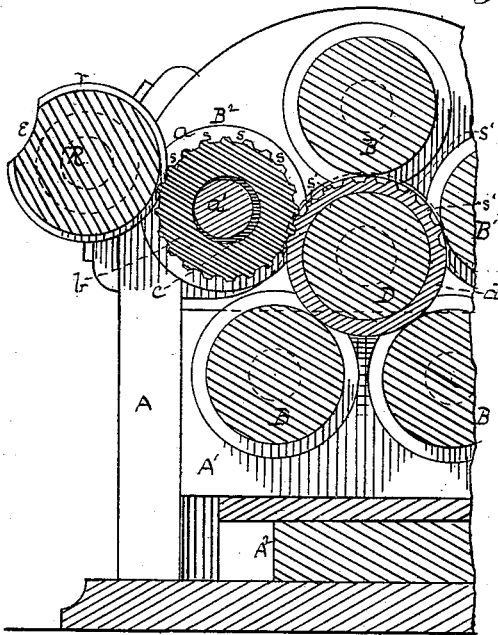


Fig. 2.

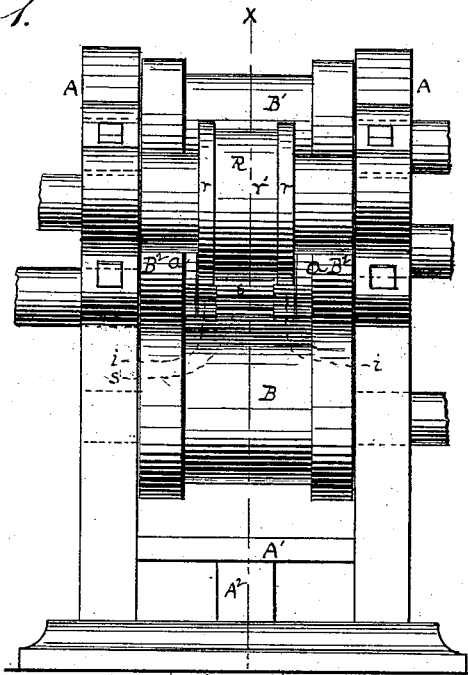


Fig. 3.

Witnesses  
J. J. Lewis  
C. L. Parker

Inventor Mildred Blakey,  
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# UNITED STATES PATENT OFFICE.

MILDRED BLAKEY, OF ETNA, PA., ASSIGNOR TO JOHN L. ROBERTSON AND  
GEORGE A. CHALFANT, OF SAME PLACE.

## IMPROVEMENT IN MACHINES FOR CORRUGATING PIPE-SOCKETS.

Specification forming part of Letters Patent No. 191,220, dated May 29, 1877; application filed  
April 19, 1877.

To all whom it may concern:

Be it known that I, MILDRED BLAKEY, of Etna borough, county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Machine for Corrugating Pipe-Sockets; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which—like letters indicating like parts—

Figure 1 is a vertical sectional view of my machine in the line *xx* of Fig. 3, showing the printing or corrugating die not in operation. Fig. 2 is a like view, illustrating the manner of operation of the same die, and Fig. 3 is an end elevation of the machine.

In Letters Patent No. 175,015, granted to me March 21, 1876, I described a machine for bending, welding, and finishing sockets or comparatively short sections of pipe. In so far as relates to the same elements the present machine has substantially the same construction and operation. The housings or frame is represented at A, and the bearings  $\Delta^1$  of the lower rolls B B are shown as adjustable vertically by means of a wedge,  $\Delta^2$ , though these and other features not herein described and specially claimed may be varied at pleasure.

The removable mandrel, on and around which the socket *d* is bent, welded, and finished, is represented at D, and the series of rolls, two or more in number, which do the bending, welding, and finishing, are represented at B B B<sup>1</sup> B<sup>2</sup>, all, with the exception of B<sup>2</sup>, having the construction and operation described in the said patent. This roll B<sup>2</sup> is made with its end parts *aa* preferably the same as the other rolls, so as to coact with them in giving a good weld and finish to the ends of the socket *d*; but the middle part of the roll consists of a shaft, *a'*, on which I arrange a printing or corrugating annular die, *b*, the eye *c* of which is a little larger than the shaft *a'*. The face or periphery of this annular die comes opposite to the cylindrical face of the socket *d*, and it has on its periphery a series of teeth or projecting ribs, *s*, of any desired order, size, or arrangement, adapted for

imprinting, pressing, or working into or onto the cylindrical face of the socket or some part thereof a correspondingly roughened, ribbed, or corrugated surface, such as to facilitate the bite thereon of a wrench, pipe-tongs, or other tool; and, while I have generally found it desirable to give the socket *d* two, three, or more revolutions on its mandrel in order to do good work, I have also found that more than a single revolution of the socket while operated on by the die, though, perhaps, practicable, is not desirable, since, on the second revolution, the ribs *s* sometimes fail to register accurately with their print, as made in the first revolution. Hence I arrange outside the roll B<sup>2</sup>, and in line, or nearly so, with it and the mandrel D, a bearing-roll, R, cut away on one side, as at *e*. This bearing-roll R has a pair of collars, *r*, which bear against the cylindrical ends *ii* of the annular die *b*, the space *r'* between the collars being depressed, so that such part of the roll R shall clear the teeth *s*, all as more particularly shown in Fig. 3. The bearing-roll R is also so disposed with reference to the annular die *b* as that, when the cut-away side *e* is presented to the die *b*, the latter, being loose on the shaft *a'*, will, as shown in Fig. 1, swing clear of the socket *d*, or engage it with so little force as not to affect it materially; but, when the operator wishes to corrugate or roughen the exterior face of the socket, he turns the roll R till he brings the cylindrical part of the collars *r* into contact with the die *b*. This forces the die *b* into operation, as shown in Fig. 2, so that the teeth or ribs *s* on the die will make a corresponding imprint on the cylindrical face of the socket, as shown at *s'*. As soon as the die *b* has thus operated on or around the entire periphery of the socket, or so much thereof as may be desired, the cut-away part *e* comes around to the position shown in Fig. 1, and the die *b* again turns clear of the socket.

Any suitable means may be employed for giving the motions described. It may be done automatically, or by hand, or by power.

The socket thus made forms the subject-matter of a separate application.

Other suitable known means adapted for shifting an annular die or an equivalent die

roll into engagement with the socket and releasing it from such engagement may be substituted for the roll R as the mechanical equivalent thereof; but the device employed should give to the die a quick, positive motion to, and a quick release from, the socket, as distinguished from the progressive motion of the eccentric or ordinary cam.

I claim herein as my invention—

1. The combination of a rotary mandrel, D, an annular die or equivalent die-roll, having a roughened, ribbed, or toothed surface, and made capable of motion toward and from the mandrel, and suitable devices for giving to such movable die or die-roll a quick, positive motion toward the mandrel, and a quick release, substantially as described.

2. An annular die, *b*, working loosely on its

shaft, in combination with collared roll R and mandrel D, substantially as described.

3. The roll B<sup>2</sup>, as one of the series of rolls described, made with working ends *a* to work the socket ends, a reduced shaft, *a'*, in combination with loose die *b* thereon, substantially as described.

4. The combination of a revolving ribbed die and a revolving mandrel, suitably arranged for the ribbing of the socket while on the mandrel, substantially as described.

In testimony whereof I have hereunto set hand.

MILDRED BLAKEY.

Witnesses:

J. J. MCCORMICK,

C. L. PARKER.