

No. 622,233.

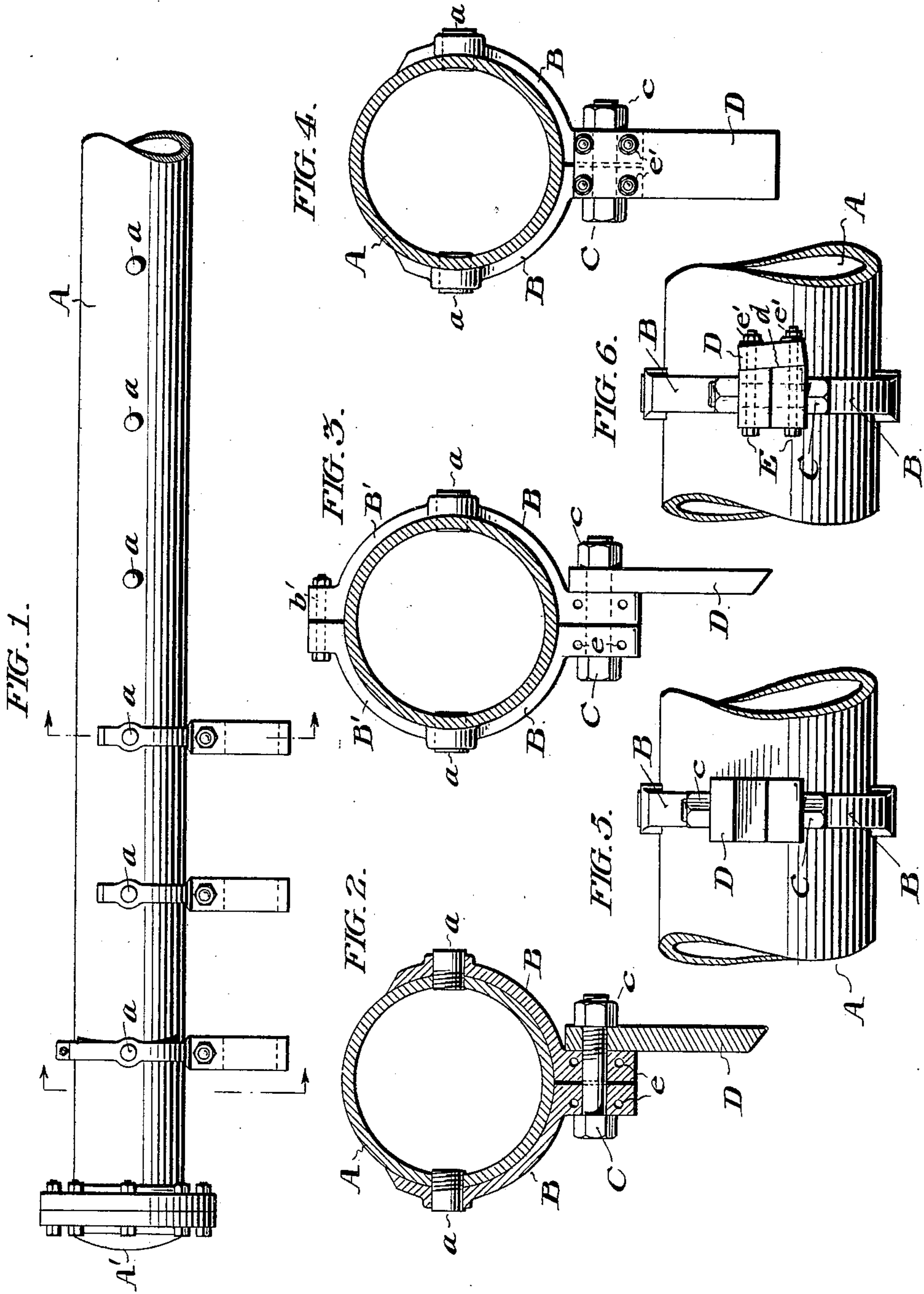
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J. JACOBS.

RABBLE ARM FOR ORE ROASTING FURNACES.

(Application filed June 25, 1898.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

JOHN JACOBS, OF FLORENCE, COLORADO.

## RABBLE-ARM FOR ORE-ROASTING FURNACES.

SPECIFICATION forming part of Letters Patent No. 622,233, dated April 4, 1899.

Application filed June 25, 1898. Serial No. 684,458. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN JACOBS, of Florence, in the State of Colorado, have invented certain new and useful Improvements in Rabble-Arms for Ore-Roasting Furnaces, whereof the following is a specification, reference being had to the accompanying drawings.

In devices of this character at present used it is customary to employ a hollow rabble-arm cooled by a water-current which is caused to circulate through the same, said arm carrying the downwardly-depending plow-points or blades for stirring the ore. Much difficulty has been experienced owing to the defective methods heretofore adopted for attaching these blades to the arm, rivets or bands having generally been used for that purpose. It is found that where rivets are employed the holes are not stopped by a permanently close joint, and there is consequently a leakage of water, while bands or yokes of the character heretofore used are liable to work loose and slip. The purpose of my invention is to overcome these objections and to provide a means for securing the blades to the arm in such manner that they can be readily applied in any desired relation and shall be maintained firmly and accurately in position.

In the accompanying drawings, Figure 1 represents a partial view, in side elevation, of a rabble-arm embodying my improvements. Fig. 2 is a transverse section through the same on the line 2 2 of Fig. 1. Fig. 3 is a transverse section on the line 3 3 of Fig. 1, showing a slight modification of the device. Fig. 4 is a transverse section showing the same type of device as that shown in Fig. 2, but with the blade applied in a different direction. Fig. 5 is a view of the under side of the blade and attaching device applied as in Figs. 2 and 3. Fig. 6 is a view of the under side, showing a modification in the form of the seat for the blade.

The arm A is of the usual hollow type adapted for internal water circulation, and is closed at the end, as shown in Fig. 1, by means of a cap A'. As the general construction of this kind of arm and the method of maintaining the water circulation therein are well understood and in common use, it is not deemed necessary to describe these details. At opposite points, preferably, of the horizontal diameter

of the arm I mount thereon screw-plugs *a*, the outer ends of which project, forming studs, as shown. Although these plugs penetrate the shell of the arm, they may be so applied as to remain perfectly tight during all the conditions of use, and thus leakage is avoided. A two-part yoke composed of the pieces B B embraces the rabble-arm, each part being in the instance shown provided with openings which encircle the projecting studs *a*, thus forming a complete engagement in all directions, which prevents the shifting or slipping of the yoke around or along the rabble-arm. The breadth of the yoke-bands is sufficient to prevent any tendency to tilt sidewise.

In the type shown in Fig. 2 the upper ends of the yoke terminate a short distance above the studs *a*; but in the type shown in Fig. 3 they are prolonged, as indicated at B' B', so as to embrace the entire periphery of the rabble-arm A. The two parts of the yoke are secured together at the bottom by means of a bolt C, passing transversely through their depending lower ends, said bolt serving also as the means for securing the blade D, which is seated against the flat face of the lower end of the yoke. A single nut *c* is therefore not only capable of clamping in position the two parts of the yoke, but also of securing the blade D thereto.

In the type shown in Fig. 3, where the yoke is upwardly prolonged, as at B' B', so as to embrace the entire periphery of the arm, a bolt *b'* may be employed to secure together the upper ends of the parts. The blades D may be arranged with their greatest diameters parallel to the axis of the rabble-arm, as shown in Fig. 1; but in case it should be desirable to place them in other positions I provide the following devices: Bolt-holes *e* are drilled through the downwardly-depending lower portions of the yoke-arms at right angles to the hole which admits the bolt C, being so located as not to intersect the latter and being of smaller diameter. One of the faces formed by the adjacent downwardly-depending portions of the yoke-arm may be beveled, as indicated at *d* in Fig. 6. By applying the blade D against the beveled or inclined face and securing it in position by means of the bolts E and nuts *e'* the relation of the blade to the rabble-arm may be varied,



so as to give it any pitch, the greatest diameter of the blade being at an angle to the axis of the arm. Obviously a pitch in the opposite direction may be obtained by simply reversing the position of the yoke upon the arm.

I have shown in the drawings two forms of blades which may be indifferently employed—viz., those of Figs. 2 and 3, which have a plow-point, while that shown in Figs. 4, 5, and 6 is simply square at the end. These details may be varied at will.

Having thus described my invention, I claim—

1. The combination, with a hollow cylindrical rabble-arm, of studs projecting from the periphery thereof; a two-part yoke embracing the arm and having openings which encircle said studs to form engagement therewith against displacement in any direction; a blade independently mounted upon the

lower portion of said yoke; and means, substantially as described, for securing the two portions of the yoke together, and for holding the blade in position thereon, substantially as set forth.

2. The combination, with a hollow cylindrical rabble-arm, of studs projecting from the periphery thereof; a two-part yoke embracing the arm and having openings to afford engagement with said studs, said yoke having a beveled face upon its lower portion; a blade mounted upon said yoke; and means, substantially as described, for securing the two portions of the yoke together and for holding the blade in position thereon, substantially as set forth.

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