No. 813,658. PATENTED FEB. 27, 1906.

W. S. MATHER.

CRUCIBLE SHAKER.

APPLICATION FILED MAR. 30, 1905.

3 SHEETS—SHEET 1.

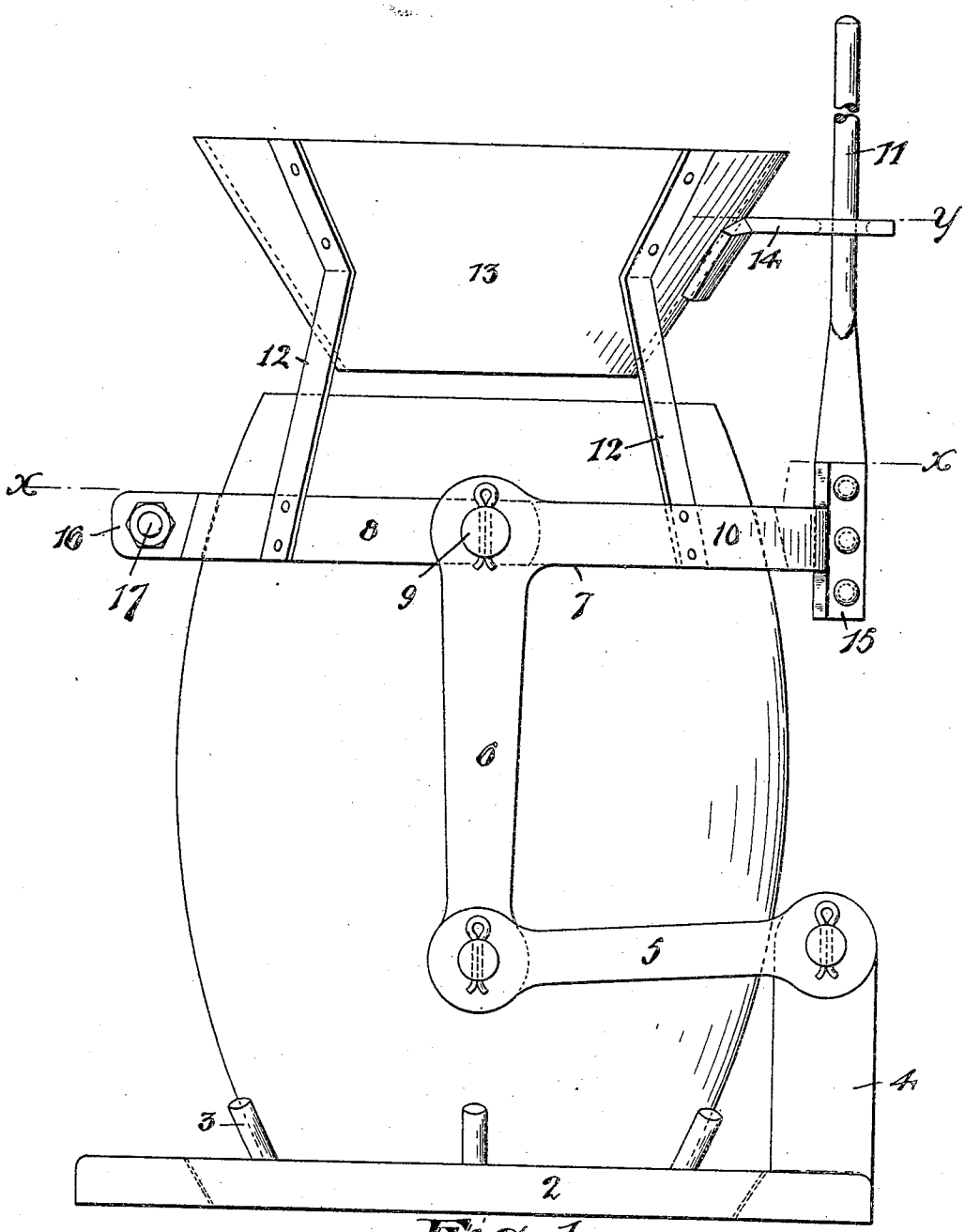

Fig. 1

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3 SHEETS—SHEET 2.

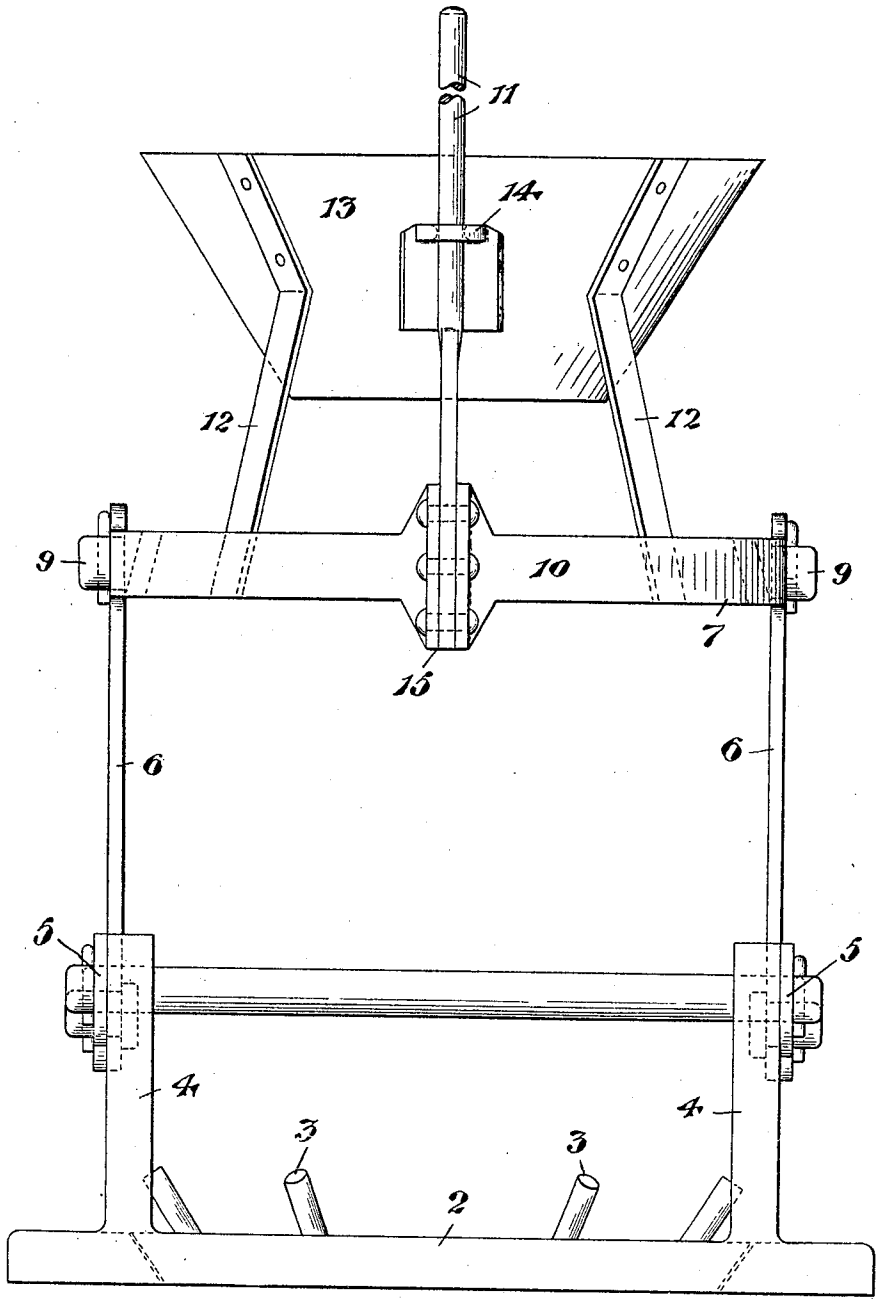

Fig. 2.

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3 SHEETS—SHEET 3.

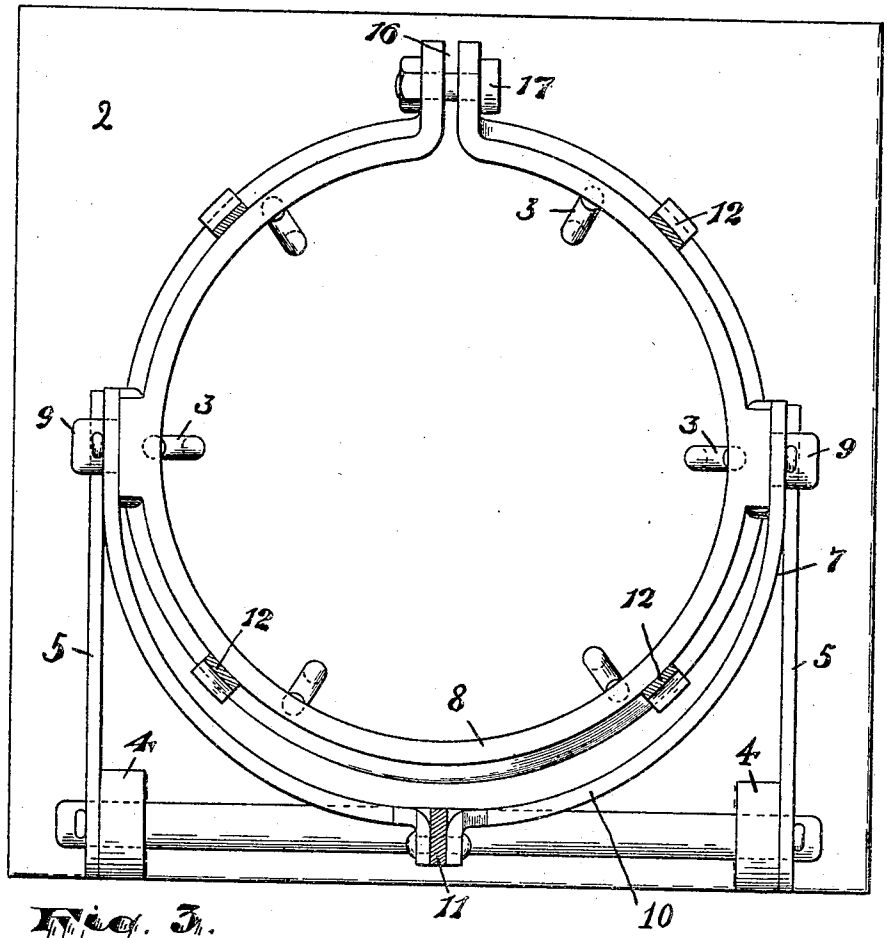

Fig. 3.

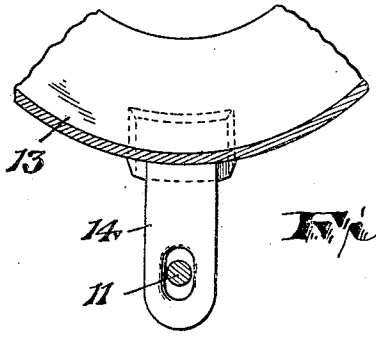

Fig. 4.

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UNITED STATES PATENT OFFICE.

WILLIAM S. MATHER, OF NEWARK, NEW JERSEY.

CRUCIBLE-SHAKER.

No. 813,658. Specification of Letters Patent. Patented Feb. 27, 1906.

Application filed March 30, 1905. Serial No. 252,847.

To all whom it may concern:

Be it known that I, WILLIAM S. MATHER, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Crucible-Shakers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to numerals of reference marked thereon, which form a part of this specification.

The objects of this invention are to secure a crucible-shaker which can be lifted off of or swung away from the crucible without disturbing the connection of the shaker with its base-plate; to provide upon the shaker an independently-pivoted ring for engaging the top of the crucible; to make said ring, and thereby the shaker, adjustable to different-sized crucibles; to provide in connection with said ring a funnel for filling the crucible; to secure improved handle means for shaking, and to obtain other advantages and results, some of which may be hereinafter referred to in connection with the description of the working parts.

The invention consists in the improved crucible-shaker and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like numerals of reference indicate corresponding parts in each of the several figures, Figure 1 is a side elevation of a crucible having my improved shaker applied thereto. Fig. 2 is a rear elevation of the shaker with the crucible removed. Fig. 3 is a horizontal cross-section upon line x x, Fig. 1; and Fig. 4 is a detail of a certain guiding-arm upon the funnel to receive the shaking handle or lever, said view being in horizontal section upon line y, Fig. 1.

In said drawings, 2 indicates a base-plate upon which the crucible is adapted to stand, pins or studs 3 projecting upward from said plate to receive the bottom of the crucible and hold it in place. Upon the rear of the said base-plate 2 are standards 4, to the top of each of which is pivoted a link 5, which extends horizontally forward at the side of the crucible to pivotally receive the lower end of an arm 6 of the main shaking-band 7.

A ring 8 is adapted to fit loosely over the upper end of the crucible, and at the opposite sides thereof said ring has ears or trunnions 9 adapted to pivotally receive the shaking-band 7 above referred to. Said shaking-band 7 comprises a semicircular portion 10, adapted to lie around the rear side of the crucible and at its extremities pivotally receive the said ears or trunnions. Furthermore, from the said pivoted ends of the shaking-band the arms 6 project downward to receive the ends of the links 5. Preferably said arms 6 are made integral with the band 10, and said band is divided at its middle for convenience in manufacture and to receive an upright shaking handle or lever 11.

From the ring 8 supports 12 extend upward above the top of the crucible and are bolted to a conical funnel 13, which serves to guide material into the crucible when filling the same. An arm 14 preferably projects from the back of the funnel horizontally and is slotted to receive the shaking handle or lever 11.

By the construction thus described it will be understood that the ring 8 always retains its position upon the top of the crucible in shaking and that the funnel 13 preserves a permanent relation to the crucible. Movement of the shaking lever or handle 11, however, is communicated to the said ring to move the same and the crucible back and forth in shaking, the said lever and band 10, fixed thereto, swinging upon the pivotal links 5 at the lower ends of the arms 6 of the said band.

When a crucible is to be removed, the ring 8 is lifted upward off the top of the crucible, the links 5 permitting such movement, and the entire device carried upwardly and rearwardly far enough to permit the crucible to be readily taken out and another put in place. The ring is then dropped down again in position upon the crucible. When thus lifted away to permit a change of crucibles, the shaker is most naturally and conveniently hung by the angle between its band 10 and arms 6 upon the shield (not shown) which protects the operator. The downward extension 15 of the handle or lever 11 beyond the band 10 prevents any slipping off when so supported, and thus the operator does not have to hold the shaker while a change of crucibles is being made. Furthermore, the ring 8 is preferably split, as at 16, and its ends adjustably connected, as by a bolt 17, so that

the size of said ring may be changed to more perfectly fit different crucibles. The shaker is thus adjustable to different-sized crucibles.

Obviously any suitable and well-known form of handle or lever can be used upon the shaking-band 7 and perhaps other forms of connection between said lever and the funnel 13. In fact, I do not wish to be limited to the specific forms of any of the details of my invention which I have positively described for purposes of clear illustration, except as the state of the art may require.

Having thus described the invention, what I claim as new is—

1. In a crucible-shaker, the combination with a base-plate having standards thereon, of a ring adapted to fit over the top of a crucible, a semicircular shaking-band pivoted at its ends to said ring, downward extensions upon said ends of the shaking-band, links connecting said extensions to the standards, and a lever upon said band.

2. In a crucible-shaker, the combination with a base-plate upon which a crucible may stand, of a ring adapted to fit over the top of the crucible, a funnel supported on said shaking-ring, a semicircular shaking-band pivoted to said ring at diametrically opposite points thereof, arms extending downward from said shaking-band and being pivotally connected to the base-plate, and a lever or handle upon said shaking-band midway between its extremities and secured to said funnel.

3. In a crucible-shaker, the combination with a base-plate having at the opposite ends of its rear edge upright standards, a ring adapted to fit over the top of the crucible, a semicircular shaking-band pivoted at its ends to opposite points of said ring, an upwardly-extending lever or handle upon said band, arms extending downward from the pivotal points of said shaking-band, and substantially horizontal links connecting said arms with the said standards on the base-plate.

4. In a crucible-shaker, a base-plate for a crucible to stand upon, a shaking-ring adapted to fit over the top of the crucible, a curved shaking-band pivoted at its ends to said ring, downward extensions from said ends adapted to be pivotally connected to the said base-plate, and a lever or handle upon said shaking-band.

5. In a crucible-shaker, a base-plate for a crucible to stand upon, a shaking-ring adapted to fit over the top of the crucible, a funnel supported upon said ring above the top of a crucible, and handle means pivoted to said ring, connected to the funnel and fulcrumed to the said base-plate.

6. In a crucible-shaker, supporting means for the base of a crucible, a ring adapted to fit over the top of the crucible, a curved shaking-band pivoted at its ends to opposite points of said ring and being extended beyond said points of pivoting to fulcrumally engage the said crucible-supporting means, a funnel supported upon said ring, a slotted arm upon said funnel, and a lever or handle upon said shaking-band extending through the slot of said arm.

7. In a crucible-shaker, base-supporting means for a crucible, a ring adapted to fit over the top of the crucible, a curved shaking-band pivoted at its ends to opposite points of said ring and being extended beyond said points, links connecting said extensions to the said crucible-support, a handle or lever at the upper side of the said shaking-band, and a projection 15 at the opposite side of said shaking-band from said lever or handle.

8. In a crucible-shaker, a base-support for the crucible to stand upon, a shaking-ring adapted to fit over the top of the crucible, handle means pivoted to said shaking-ring and having downward extensions, and links pivotally connecting said extensions to the base-support and normally forming with said extensions angles whereby the ring may be raised and lowered without detachment from the base-support.

9. In a crucible-shaker, a base-support for the crucible to stand upon, a shaking-ring adapted to fit over the top of the crucible, handle means pivoted to said shaking-ring, and having downward extensions and links connecting said extensions to the base-support while permitting the shaking-ring to be raised and lowered with respect thereto.

10. In a crucible-shaker, the combination of a base-support for a crucible to stand upon, a shaking-ring adapted to fit over the top of the crucible, a band connected at its ends to said ring and having downward extensions from said ends, links connecting said extensions to the base-support, and a handle.

In testimony that I claim the foregoing I have hereunto set my hand this 15th day of March, 1905.

WILLIAM S. MATHER.

Witnesses:
RUSSELL M. EVERETT,
M. V. DOYLE.