(No Model.)

3 Sheets—Sheet 1.

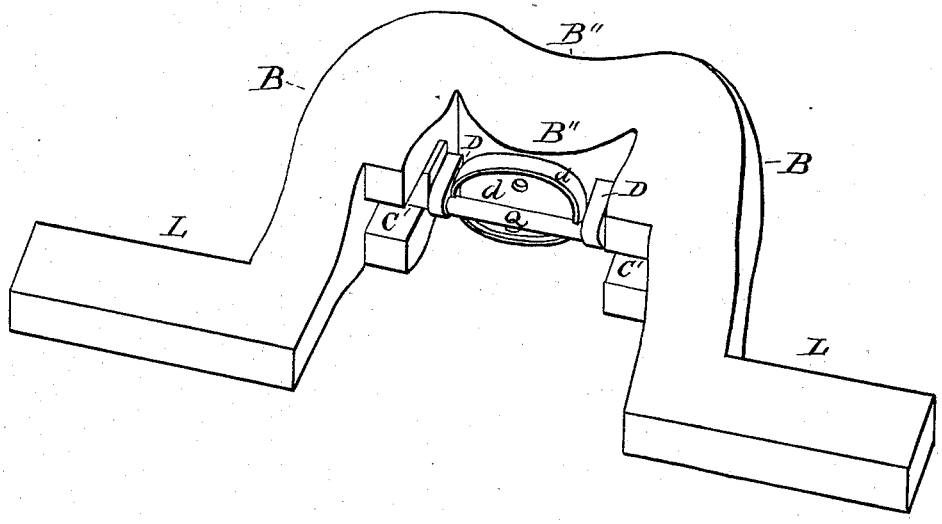
# L. READ.

## MILLSTONE DRIVER.

No. 263,724.

Patented Sept. 5, 1882.

*Fig 1*




Witnesses

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(No Model.)

3 Sheets—Sheet 2.

# L. READ.

## MILLSTONE DRIVER.

No. 263,724. Patented Sept. 5, 1882.

*Fig 2*

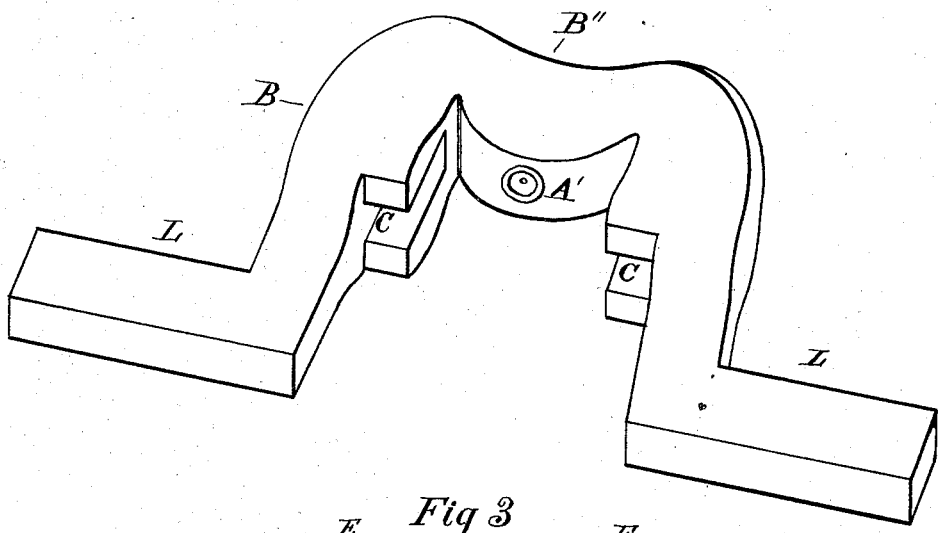



*Fig 3*

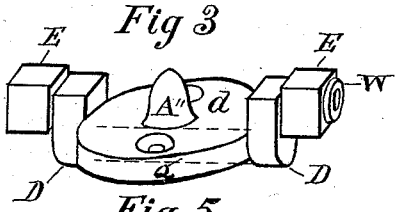
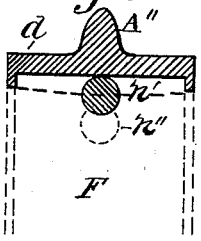



*Fig 5*

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(No Model.) 3 Sheets—Sheet 3.

# L. READ.

## MILLSTONE DRIVER.

No. 263,724. Patented Sept. 5, 1882.

Fig. 4

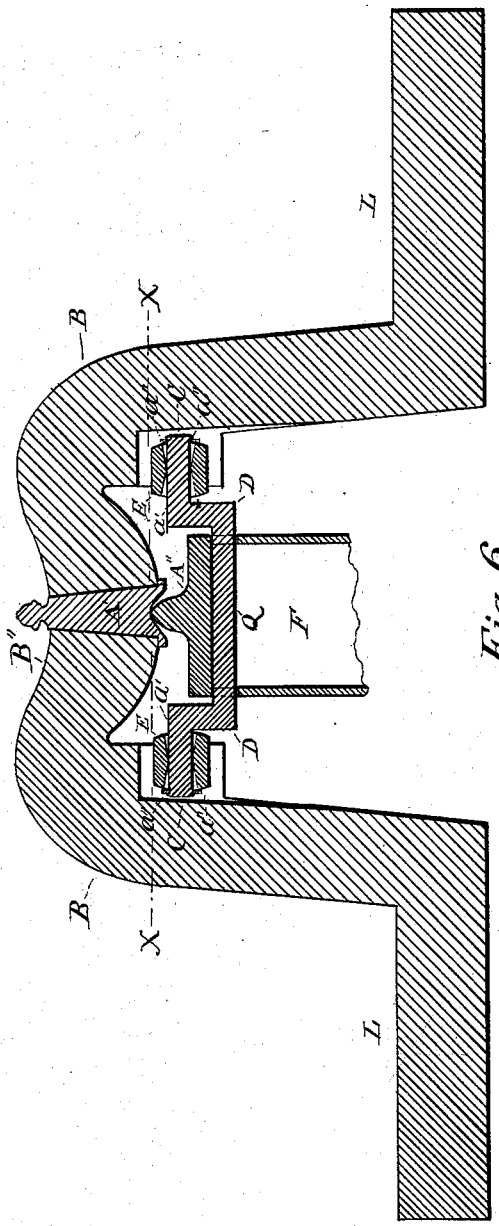
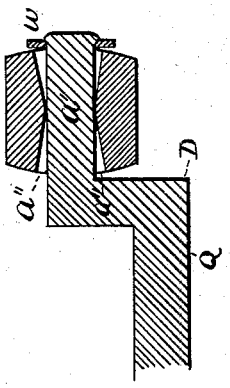



Fig. 6




Witnesses
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atty

# UNITED STATES PATENT OFFICE.

LUTHER READ, OF HENDERSON, ASSIGNOR OF ONE-HALF TO LOUIS S. CRANDALL, OF NEW YORK, N. Y.

## MILLSTONE-DRIVER.

SPECIFICATION forming part of Letters Patent No. 263,724, dated September 5, 1882.

Application filed May 5, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, LUTHER READ, of the village of Henderson, county of Jefferson, and State of New York, have invented a new and useful Improvement in Millstone-Drivers, of which the following is a specification.

This invention relates to improvements in bails and drivers for millstones; and the objects of my improvements are to provide mechanical means which will automatically adjust the driver to the bail when motion is communicated to the stone by the spindle, so that the stone shall run true at all times.

My invention consists in the novel construction and combination of parts, as will be hereinafter more particularly set forth and described.

In the accompanying drawings, forming a part of this specification, Figure 1 is a perspective view, showing the bail, cap-plate, double-crank driver, and bearings in regular order. Fig. 2 is a perspective view of my improved bail. Fig. 3 is a perspective view of the double-crank driver and cap-plate. Fig. 4 is a longitudinal vertical sectional view, showing the parts in connection. Fig. 5 is a vertical sectional view taken through the center of the cap-plate and cock-head; and Fig. 6 is a longitudinal vertical sectional view of a section of the double-crank driver and journal-bearings.

In the accompanying drawings, the letter B represents the bail, formed with its top part, B″, curved downward, substantially as shown in the drawings, and having formed in the center of the top a suitable opening, in which is placed and fitted the cockeye A′. In the inner face of each arm of the bail are formed vertical slots or recesses C C, for the purposes hereinafter set forth.

The letter D represents a double-crank driver, (see Figs. 3 and 4,) formed at its ends with journals fitting in the journal-bearings E E, which in turn fit in the vertical slots or recesses of the bail-arms. These journal-boxes E are formed so that they are choked in the center, and from thence flare in both directions toward the outsides of the box, the object being to produce a contraction in the central portion of the bearings, substantially as shown in Figs. 4 and 6 of the drawings, the journal being designated at $a'$ $a'$ and the contracted bearings at $a''$ $a''$. By this formation and connection of the journal-boxes and crank-bearings the driver will oscillate for adjustment.

The letter *d* (see Fig. 3) represents the cap-plate, provided with suitable connecting means to attach it to the spindle, and preferably formed with a transverse journal-bearing cut across the under side to receive the central long arm, Q, of the double-crank driver, and is also formed with the cock-head A″.

The letter F represents the spindle, formed with a semicircular transverse journal-bearing at the top to receive the long arm Q of the double-crank driver, and the upper half of this arm Q fits in a similar journal-bearing in the cap, which is adjusted on the spindle, as shown at N′ in Fig. 5 of the drawings.

The letters L L represent the legs or extensions of the bail, which are connected with the millstone in the usual manner. The letters *w* *w* are ordinary journal-washers.

If preferred, the journal-bearing for the long arm Q of the double-crank driver may be inserted through the spindle, as shown by the dotted lines at N″ in Fig. 5 of the drawings.

Operation: The driver is rotated by the action of the spindle, and turns the bail and stone by reason of its connections in the recesses in the inner sides of the arms of the bail, and by means of the contracted bearings a longitudinal adjustment is attained, and through the bearings in the spindle a cross adjustment, and thus any lurching tendency of the stone occasioned at starting or occurring while in motion is promptly arrested or corrected.

It will be observed that by means of the bowed top formed, as described, in the bail the cock-head and cockeye are brought down to a line horizontally coinciding with the point where the actuating-power is applied to the bail by the driver, so that the point of suspension and the point of actuation fall horizontally parallel, as shown by the dotted lines *x* *x* in Fig. 4. This feature of my invention is an important one, and it differs materially from the usual methods of making connection where the cock-head and cockeye are placed to operate in the bail above the point where the driver moves the bail.

By actuating the bail to turn the stone at a point horizontally coinciding with the point of suspension a much more steady rotation of the stone is produced than where the swaying and

lurching distance is made greater by the increased distance between the point of suspension and the axis of the driver. This advantage is obtained by my improved construction of the bail with the downward-projecting bow.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with a rotating spindle, a spindle-cap provided with a journal-bearing, and a millstone-driver comprising the bearing portion Q, an upward-projecting crank at each end of the bearing portion Q, and journals and journal-bearing boxes, of the bail provided with arms having vertical slots or recesses in the opposite sides thereof, substantially as set forth.

2. The combination of a millstone-driver having end horizontal bearings with the bearing-boxes having contracted centers for journal-bearings, whereby the driver is rendered adjustable to the bail and stone, substantially as described.

3. The combination of the bail B′, having the downward bow B″, side recesses, C C, and cockeye A′, with the double-crank driver D, the journal-bearing boxes E E, the spindle, and spindle-cap *d*, having cock-head A″, substantially as described.

Signed at Henderson, Jefferson county, New York, this 18th day of August, 1880.

LUTHER READ.

Witnesses:
CHAS. H. SPRAGUE,
FRANK IVES.