

W. F. COCHRANE.
Millstone-Driver.

No. 214,626.

Patented April 22, 1879.

Fig. 1.

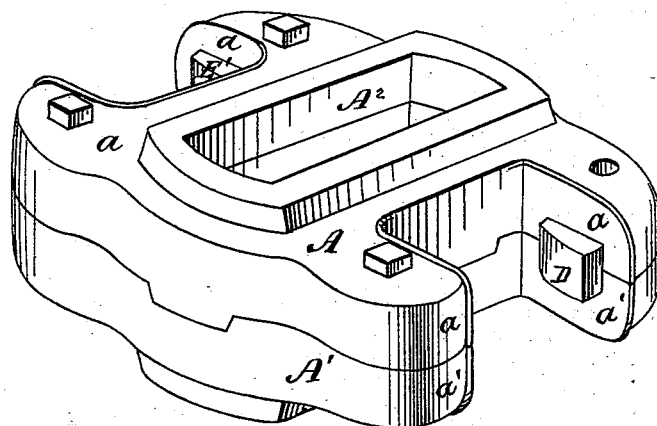


Fig. 2.

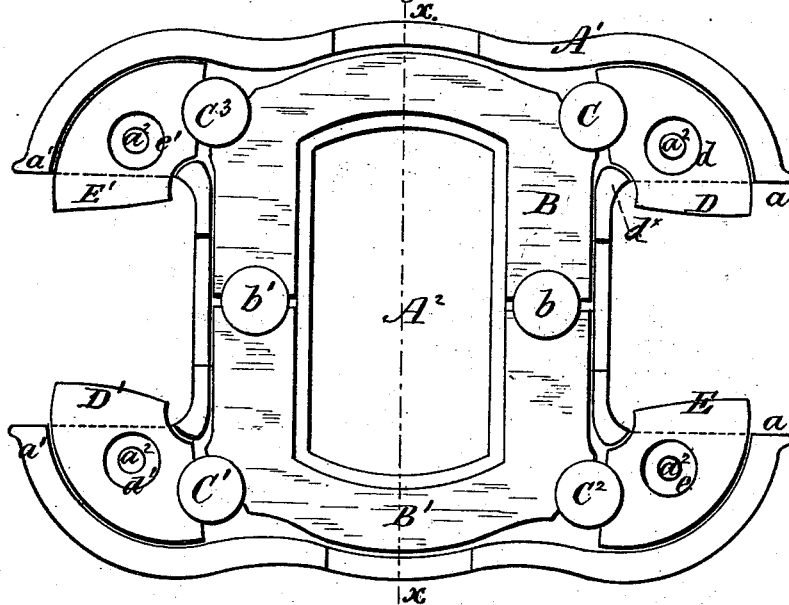
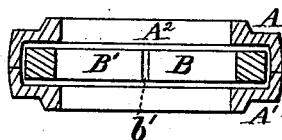


Fig. 3.



Witnesses:

W. B. Masson
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Inventor

William F. Cochrane
by W. H. Doubleday
att'y

UNITED STATES PATENT OFFICE.

WILLIAM F. COCHRANE, OF JACKSON, MICHIGAN.

IMPROVEMENT IN MILLSTONE-DRIVERS.

Specification forming part of Letters Patent No. **214,626**, dated April 22, 1879; application filed March 7, 1879.

To all whom it may concern:

Be it known that I, WILLIAM F. COCHRANE, of Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Millstone-Drivers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 letters of reference marked thereon, which form a part of this specification.

This invention relates to that class of devices known as "equalizing millstone-drivers," the object of the invention being to insure that an equal amount of power shall be applied to each of the horns of the bail upon which the stone is suspended, in order to prevent the driving-power from disturbing the balance of the stone.

Figure 1 is a perspective view of my driver. Fig. 2 is a plan view, with one-half of the shell or casing removed; and Fig. 3 is a section taken on line *x x*, Fig. 2.

In the drawings, A represents the upper part, and B the lower part, of the body of the driver, these parts being provided with interlocking faces, as is customary in this class of devices. The body is made hollow to receive the equalizing devices, and each half of the body is provided with projecting arms *a* and *a'*. The two parts of the body are secured together by means of bolts *a*².

B B' represent two yoke-like parts, connected centrally by means of tumblers *b b'*, which are fitted to recesses or seats formed in the ends of the yokes B B' for their reception. The yokes surround loosely the central opening, A², which is adapted to fit closely upon the upper part of the spindle.

C C¹ C² C³ are circular tumblers, placed at the outer angles of the yokes B B', respectively, as shown in Fig. 2. D D' and E E' are segments, each representing, preferably, an arc of about ninety degrees. The inner ends of each of these segments are recessed to engage with and fit closely the tumblers C C¹, these tumblers being either globular in form or cylindrical. In practice I prefer the latter form. The outer faces of the segments D D' E E'

are, by preference, circular in form, in order that they may properly engage with and bear upon the horns of the bail without creating undue friction by change of position. Each segment is provided with a central opening, as indicated at *e e' d d'*, Fig. 2, each opening being of greater diameter than the bolts *a*², which pass through them, so as to permit the desired freedom of movement of the segments, for a purpose which I will now proceed to explain.

By an examination of Fig. 2 it will be readily understood that if the segment D be thrust inward—that is, into the body of the driver—the segment will, in this inward movement, describe substantially an arc of a circle, of which the point *d*^x is the center, and in so doing will thrust the tumbler C a short distance upon a line diagonal to the sides of the spindle—that is, toward the opposite tumbler C¹—which movement will be transferred by means of the yokes B B' and tumblers *b b'* to the tumbler C¹, which, in turn, will thrust the segment D' out from the shell, thus equalizing the pressure upon opposite sides of the opposite horns of the bail, so that the stone will be rotated without disturbing its balance, as will be readily understood by those who are familiar with this subject.

It will also be understood that the corresponding segments E E' will also adjust themselves through the medium of the yokes B B' and the tumblers, so as to avoid injurious results from backlash.

By an examination of Figs. 2 and 3 it will be seen that yokes B B' are free to move in any direction horizontally within the shell to perform their function.

In practice I prefer to either substitute blocks of rubber for the segments E E', or else interpose rubber or other elastic material between the inner ends of these segments E E' and suitable abutments, in order to provide for backlash, because the driver can be readily inverted when it is desired to drive a stone in the opposite direction, so that a driver with but a single pair of segments, D D', and their connecting mechanism may be made to drive a stone either with the sun or against the sun.

While I prefer to use the yokes B B' and tumblers *b b'* as a means for connecting the

tumblers D D', yet I do not wish to be limited to this precise combination of parts, because other devices might be employed in place of the yokes.

It will be seen that the bolts a^2 serve the purpose not only of securing the two parts A A' of the body of the driver together, but also of preventing the segments D D' E E' from being accidentally displaced from their proper position in the driver. Neither do I wish to be limited to the employment of the bolts a^2 for retaining the segments in proper position, because the body of the driver might be formed with small lugs or steady-pins, either cast with or attached to one or both sections of the body in such position as to enter the slots of the segments.

It is my design that the claims and invention in this case should be construed in connection with the devices contained in an ap-

plication filed by applicant and George T. Smith, January 11, 1879.

What I claim as my invention is—

1. In a millstone-driver, the combination, with the yokes B B', of the segments D D' and tumblers C C'.

2. In a millstone-driver, the combination, with the inclosing-shell and bolts a^2 , of the yokes and tumblers, the segments D D', provided with openings of greater diameter than said bolts, whereby the segments have the desired play, but are retained in working position, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WILLIAM F. COCHRANE.

Witnesses:

J. C. BONNELL,
H. F. HANNON.