

J. W. TRUAX.
MILLSTONE.

No. 176,252.

Patented April 18, 1876.

Fig. 4

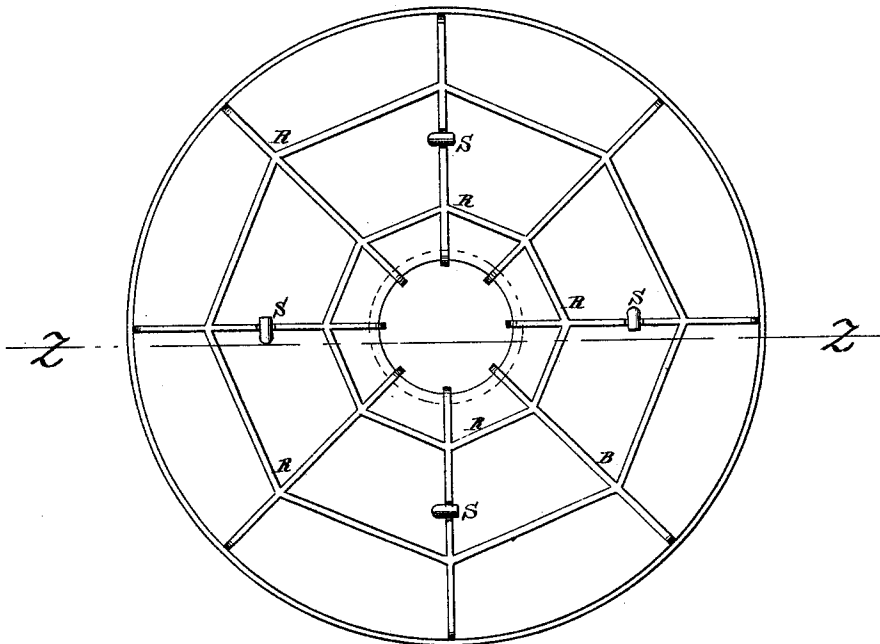
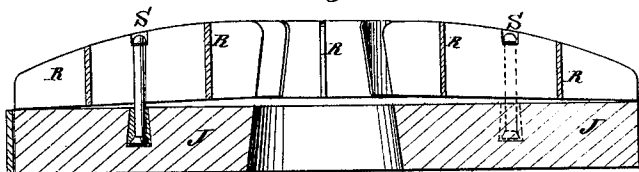


Fig. 5



WITNESSES:

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UNITED STATES PATENT OFFICE.

JACOB W. TRUAX, OF ESSEX JUNCTION, VERMONT.

IMPROVEMENT IN MILLSTONES.

Specification forming part of Letters Patent No. **176,252**, dated April 18, 1876; application filed February 21, 1876.

To all whom it may concern :

Be it known that I, JACOB W. TRUAX, of Essex Junction, in the county of Chittenden and State of Vermont, have invented a new and useful Improvement in Millstones for Grinding Grain, of which the following is a specification:

Figure 1, Sheet 1, is a top view of the upper stone, showing the bail in dotted lines. Fig. 2, Sheet 1, is a vertical section of a run of stones, taken through the line *x x*, Fig. 1. Fig. 3, Sheet 1, represents the lower stone, partly in face view and partly in section through the line *y y*, Fig. 2. Fig. 4, Sheet 2, is a top view of the shell or frame for backing the upper stone. Fig. 5, Sheet 2, is a vertical section of the same, taken through the line *z z*, Fig. 4.

Similar letters of reference indicate corresponding parts.

The object of this invention is to improve the construction of millstones, to enable them to be more readily adjusted and balanced, and to make them more effective in operation.

The invention will first be described in connection with drawing, and then pointed out in the claims.

A is the lower or stationary stone, which is bound with bands B, in the usual way. The eye of the stone A is made circular, and into it is fitted a cylindrical bush, C, in which are formed four radial boxes, *e'*, to receive the wooden bearing-blocks D and the metallic wedges E, by which said bearing-blocks D are forced out against the spindle F, that passes up through the said bush C. The lower ends of the wedges E have bolts *e'* formed upon or attached to them, which pass out through holes in the bottom of the bush C, and have nuts *b²* screwed upon their outer ends, so that the wedges E may be adjusted from the lower side of the stone A, and without removing the upper stone. The bush C is provided with a double-walled cover, G, the edges of which project a little beyond the case C, to enter a rabbet in the stone A, and to which the bush C is secured by bolts *g¹*, as shown in Figs. 2 and 3. The lower wall of the cover G is flat, and its upper wall is convex, so as to form a cavity to receive and retain tallow or other lubricating material. The edge of the top

plate of the cover G, around the hole through which the spindle F passes, has an upwardly-projecting flange, *g²*, formed upon it, which enters a cavity in the under side of the driver H, to prevent anything from coming in contact with the spindle. The upper part of the spindle F is made polygonal in form to fit into a polygonal socket formed in the said driver H, so that the said spindle may carry the said driver with it in its revolution. The ends of the driver H enter recesses in the opposite sides of the inner surface of the bail I, so as to carry the said bail with it in its revolution. The bail I rests upon the end of the spindle F, and has four projections formed upon the opposite sides of its lower part, which enter notches in the sides of the eye of the upper stone or runner J, so that the said bail may carry the said stone with it in its revolution. The bail I is made conical in its general form, and has four spiral grooves formed in its outer surface, which grooves increase in width as they pass downward, so that they cannot become clogged with grain. The upper part of the eye of the runner J is straight, and its lower part is made flaring or bell-shaped, as shown in Fig. 2, to receive the bail I. In the upper part of the runner J, at its outer edge, and equally distant from each other, are formed recesses or holes to receive the pockets K, which have outwardly-projecting lugs formed upon the upper edges of their ends, to receive the screws that pass through the lugs formed upon the end edges of the covers L, and which lugs are let into the upper surface of the stone. M are the weights, which are placed in the pockets K, and have screw-holes formed through their centers to receive the screws N, the forward ends of which rest against the bottoms of the pockets K, and their upper ends are swiveled to the covers L of said pockets, so that the weights M can be adjusted by turning the said screws N. This construction adapts the weights M to serve as a standing balance and as a running balance. The upper ends of the screws N project through the cover L, and are squared off, so that they may be readily operated with a wrench. The runner J is bound with the main band O and the edge band P, in the usual way. Around the runner J, between

the bands O P, are placed a number of narrow bands, Q, which are cut away, one at a time, as the stone wears, and the edge band P is driven up.

When the runner J is to be backed a skeleton shell, R, is placed upon the runner J, and secured to it by the rods S, which have hooks formed upon their upper ends, to hook into notches in the upper edges of the radial bars of the said shell R. The lower ends of the hook-rods S are leaded into holes in the stone J. The plaster is then poured upon the shell and turned down true, the radial bars of the shell R being made of such a length at their inner ends that the eye may be turned out to the proper size and form without uncovering the said ends.

The peculiar construction of the eye of the stone enables me to put in a dress with one-and-a-quarter-inch draft for each foot of the diameter of the stone, or thereabout, and twenty-four furrows, T, at the eye, and two furrows, U, in each quarter, or seventy-two in the stone, which number, however, may be varied as the texture of the stone may require. The main furrows T are on a draft of about one and a quarter inch from the eye for about two-thirds of their length. The outer parts of the furrows T and the furrows U are on a draft of one and three-fourths inch per foot of the diameter of the stone. The furrows T are about three-eighths of an inch deep at the eye, and gradually decrease in depth and width toward the skirt, being about three-sixteenths of an inch deep at the two-thirds point, where the draft changes. The furrows U also gradually decrease in depth and width from their inner to their outer ends. The furrows T U at

the skirt should not be more than five eighths of an inch wide, and for grinding corn and other coarse grain not more than one-eighth of an inch deep, and not more than one-thirty-second or one-twenty-fourth of an inch deep for wheat. This dress gives an almost unbroken skirt, and good full lands from the eye to the skirt, and produces an even grade of meal or flour, and more flour to the bushel than the ordinary dress.

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

1. The combination of cover G, having flanges g^2 , and a driver, H, having subjacent recess, with the spindle of a millstone, as and for the purpose described.

2. The combination of spindle F, cover G, driver H, bail I, and runner J, constructed and arranged as and for the purpose set forth.

3. The cover G, made hollow, with flat bottom plate and convex top plate, flanged around its inner edge, made a little wider than the bush-case C, and provided with bolts g^1 , passing through said bush-case, substantially as herein shown and described.

4. The skeleton shell R, secured to the stone J by hook-rods S, to receive the plaster backing, substantially as herein shown and described.

5. The dress formed of the furrows T and U, made and arranged substantially as herein shown and described.

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