P. DAVIS.

Flour Mill.

No. 738.

Patented May 17, 1838.

Fig. 1.

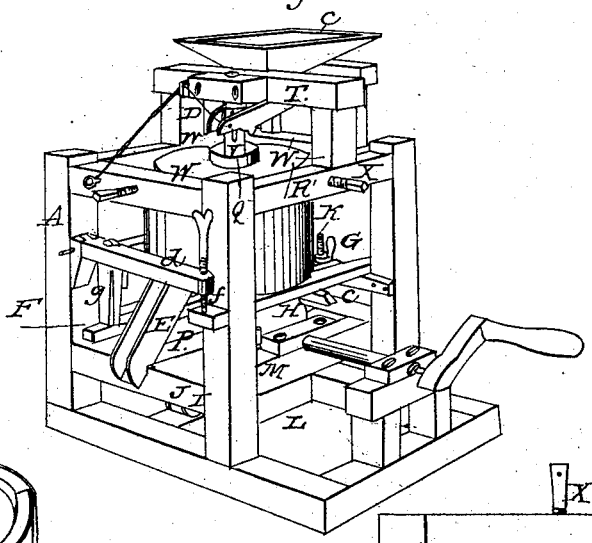


Fig. 4.

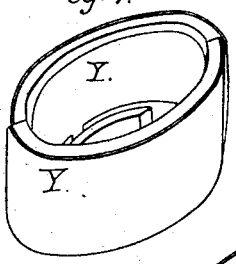


Fig. 3

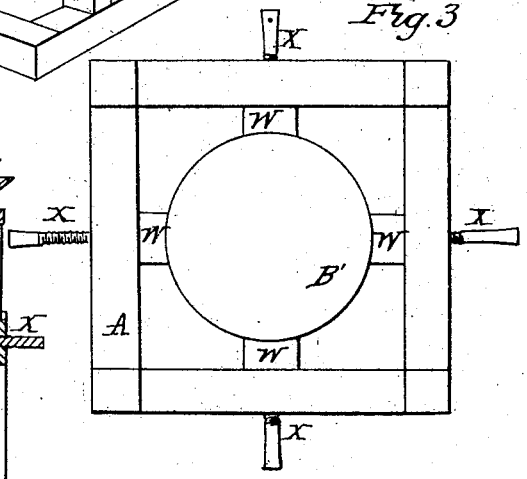
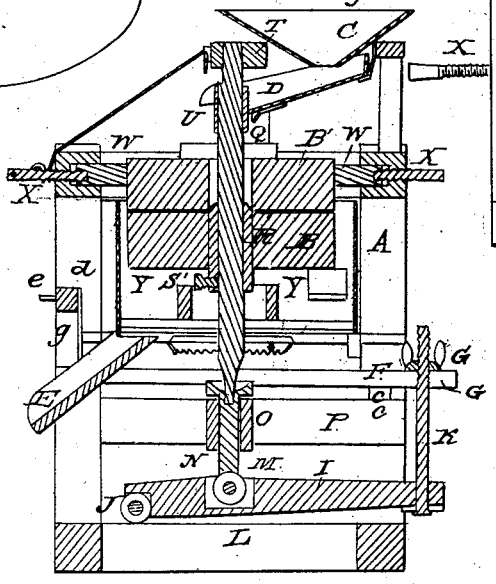


Fig. 2.



N. PETERS. Photo-Lithographer. Washington. D. C.

UNITED STATES PATENT OFFICE.

PERRY DAVIS, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN MILLS FOR GRINDING GRAIN, &c.

Specification forming part of Letters Patent No. **738**, dated May 17, 1838.

To all whom it may concern:

Be it known that I, PERRY DAVIS, of North Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Mills for Grinding Grain, &c., which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

The frame A, stones B B′, hopper C, shoe D, spout E, levers F, screws G, and gearing H are constructed similar to others in use.

The nature of my improvement consists in the combination and arrangement of certain parts, hereinafter described, for hanging and adjusting the upper stone or bed and for raising and lowering the lower stone or runner.

The bridge-tree, I which supports the step of the spindle, has a transverse as well as a vertical movement, in order to cause the spindle to rise and fall vertically without producing much friction, effected in the following manner: In the edge of the bridge-tree opposite to that through which the screw-rod K passes for raising and lowering it is placed an anti-friction-roller J, which moves backward and forward over a sill L of the frame as the other end is raised or lowered, which roller sustains the other end of the bridge-tree upon said sill. Another roller M is placed in an oblong mortise made in the bridge-tree, having an axle passing through the center thereof, on which it turns. On the surface of the last-mentioned roller is placed the lower or concave end of a sliding step N, passing through a circular box O, let into the center of a cross-girt P of the frame. The upper end of this sliding step is also made concave to receive the lower end of the spindle and for containing oil. It will be seen that as the end of the bridge-tree is raised or lowered the spindle will always rise and fall vertically by means of the before-described rollers; whereas, in the old mode, in which one end of the bridge-tree is attached to a permanent post and the step rests upon said bridge-tree, and the other end of it is raised or lowered, that the spindle must move out of a vertical line and create an impingement, for while it lies in a horizontal position it will form the base of a triangle, and when raised at one end it will form the hypotenuse or a lengthened line, and therefore must necessarily, if the other end be fixed, throw the spindle out of a perpendicular line and cause the evil above mentioned. The spindle Q passes through the bushing R of the runner and the eye of the bed-stone. The bushing extends below the under side of the runner in length equal to about half the thickness of the runner, and has a thumb-screw or other kind of screw S, passing through said bushing and turning against the side of the spindle for holding the runner at any position desired. As the runner wears, the screw is loosened and the runner raised on the spindle and the screw again tightened. When it is desired to lower the runner, a reverse operation must take place. The upper end of the spindle turns in a box in the cap T of the frame above the upper or bed stone, and is furnished with cogs or projections U for shaking the shoe. The upper or bed stone B′ is suspended by four blocks W, moving in and projecting from mortises in the four caps or plates of the frame and made to press against the sides of the bed-stone by means of four screws X—one for each sliding block—passing through the plates from the outside thereof, the points turning in cavities in the backs of the blocks, said screws being turned by levers or winches put on the ends thereof. The ends of the blocks bearing against the sides of the bed-stone are made concave, and may be furnished with points to lay hold of the stone. By means of these screws and blocks the bed-stone may be adjusted horizontally or vertically and made fast at any point desired. The curb Y is made in two parts, so that they can be separated conveniently in order to cool the stones. (See Fig. 4.) The screw-rod K, for raising or lowering the bridge-tree, passes through the end of a horizontal lever F, and has a tap G on its screw end turning upon said lever F. A block *c*, secured upon one side of the side girts of the frame near said screw-rod, is the fulcrum of said horizontal lever F. The long end of said lever is borne down by a weighted lever *d*, turning on a joint *e* at one end and resting on a screw *f* at the other end, and the connection between the two levers is effected by means of a short post *g*, placed between them.

The advantages arising from the foregoing construction are that in this mill more work

can be done with less power, and it is more easily managed and less liable to get out of order than any others.

The invention claimed consists—

1. In raising and lowering the spindle vertically without producing impingement by means of the arrangement of the rollers in the bridge-tree, as before described.

2. The method of hanging the bed-stone by means of the sliding blocks and screws, as before described.

3. The method of hanging the runner to the spindle, so as to raise and lower it by means of the bushing and screw.

PERRY DAVIS.

Witnesses:

WM. BISHOP,

C. H. WILTBERGER.