7039X

W. G. JOHNSTON.

MILL.

Patented May 3, 1832.

Fig. 2.

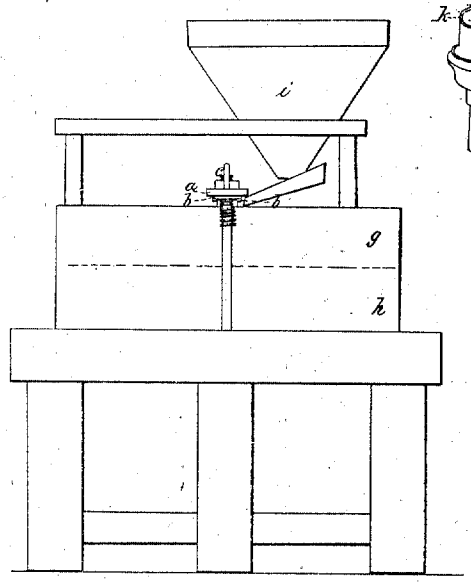


Fig. 6.

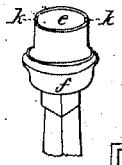


Fig. 1.

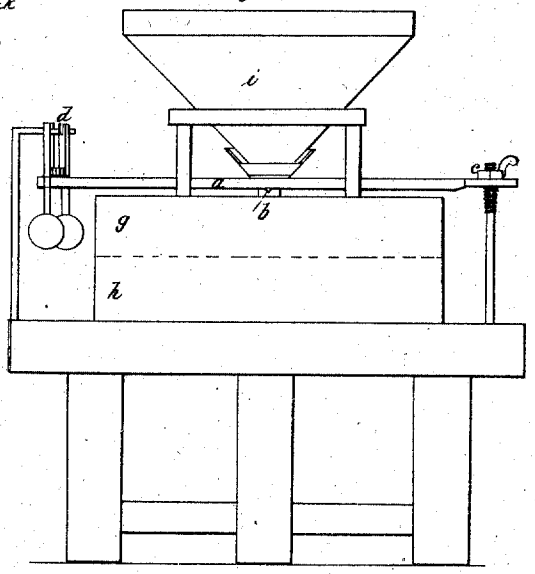


Fig. 4.

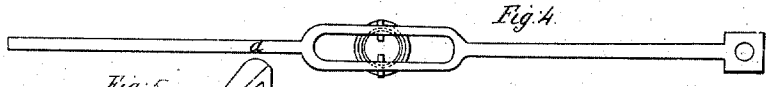


Fig. 7.

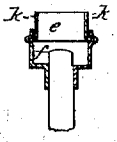


Fig. 5.

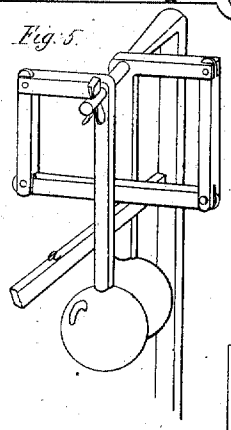
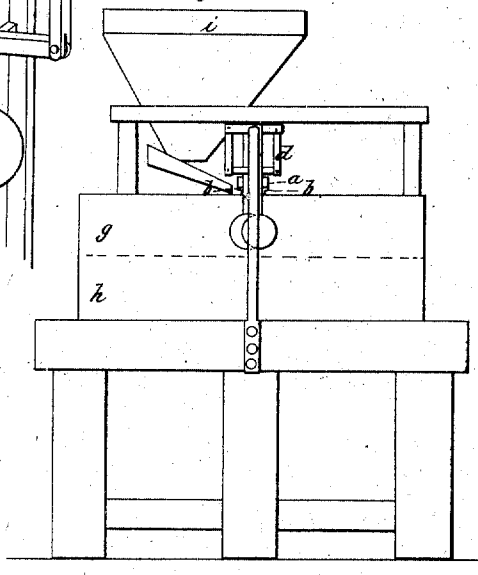


Fig. 3.



7039X

May 3, 1832

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William G. Johnston, Philadelphia Pa.

Letters Patent.

The Schedule referred to in these Letters Patent and making part of the same, containing a description in the words of the said William G. Johnston himself of his improvement in Mills for grinding wheat, Rye and other grain for flower, feed and other purposes, and for grinding paints, dye stuffs, plaster &c.

Be it known that I William G. Johnston of the City of Philadelphia, in the County of Philadelphia and State of Pennsylvania, have invented a new and useful improvement in Mills for grinding wheat, Rye, and other grain for flower, feed and other purposes; and for grinding paints, dye stuffs, plaster &c. which is described as follows

The Mill and gearings, with its fixtures may be constructed in the usual, or in any other convenient manner; excepting the apparatus for holding or pressing the stones together. The improvement relates solely to the plan of holding or pressing the upper stone (when that is the moving stone) down on the other or on the substance to be ground, when the stone is made so small that its specific gravity, or weight, is insufficient for that purpose; and when the lower stone is the moving stone, to the plan of raising, or pressing it up against the other or stationary one. —

The apparatus consists (when the upper stone is the moving stone) of the following parts, viz. a horizontal lever; a regulating screw; Compound Levers, and weights; a moveable and affixed collar.

The Horizontal Lever is made of Iron or any suitable ma-

material and of a size adapted to the purpose intended about the length of the width of the frame of the mill and has an opening formed in its center from one end to a little beyond the point where it rests on the collar hereafter described, being in the form of two parallel bars, or it may be formed in any convenient manner, so that the lever may rest on the collar on each side of the spindle. The fulcrum or bearing point of the lever is on its underside and is made in the form of two points, pivots, or edges one on each bar of the lever, coming to a point or edge at the lower extremity where they rest upon the collar, so that the bearing shall be at the same point, whether the lever be in a horizontal position, or one end elevated, or depressed.

One end of the lever is held in its proper position at the end of the frame and regulated by a screw, wedge or in any convenient manner so as to be moved up or down in order to increase or diminish the effective power of the weights on the compound levers at its other end to be hereafter described. The regulating screw is made of a proper size and strength for the use intended, having a square head resting against the under side of one of the upper rails of the frame through which and the end of the lever it passes; with a nut on its other end by which the lever is regulated. The compound levers and weights are constructed in the following manner. There are two bars of the same dimensions each bent near one end, so that one part shall form an angle with the other of about 90°. These bars are placed in a perpendicular position with the end near which the bend is, placed up, and the convex sides placed towards each other with their fulcrums fixed at the angles, and attached to a spindle, which may be placed in the center of the com-

compound levers; or to a cross bar attached to said spindle; or to some other permanent object, in such manner that the ends of the levers may move towards from each other. — There are three short bars attached at the ends by joints like hinges so that they will bend at the joints; one end of this connexion of bars is attached to the upper end of one of the bent levers, and the other end to the upper end of the other bent lever, in such manner that the middle bar of the three above mentioned is in a horizontal position, and placed on top the end of the above described horizontal lever. A ball or weight is attached to the lower end of each bent lever.

The moveable and fixed collars. A metallic cylindrical collar is fixed permanently to the spindle. Immediately above this and resting upon it is a moveable collar so fixed, that the spindle may turn freely within it having two small indentations on its upper surface on which rests the points, pivots, or spurs on the underside of the lever first described.

Operation

The mill being put in motion in the usual manner by water, steam, or any convenient power, the operation of the before described apparatus for holding the stones together will be as follows.

When the upper stone is raised or lifted up from the other by any cause whatever, the balls or weights are forced apart and raised, increasing their effective weight or power, and when the upper stone settles towards the other, the balls or weights settle and approach each other by which their effective weight or power is diminished; the apparatus resembling in construction and operation the governor of a steam engine, the effective weight

weight of the ball is also increased or diminished by the operation of the regulating screw or wedge; depressing the end of the horizontal lever, that which the screw passes when increased to, raising it when decreased, the former movement extending the ball or weight, and the latter contracting them; the horizontal lever resting or bearing at or near its centre on the moveable collar around the spindle on the pivots, pivots or spurs on its under side. If the Mill be constructed with the lower stone to turn and the upper one to remain permanent, the apparatus for forcing the stones together is similar to that above described, with this difference; that the permanent collar on the spindle, which turns the runner is placed above the loose collar; and the horizontal lever rests on a fulcrum fixed at or near its centre, with one end under the loose collar, and the compound levers fixed at the other end.

or instead of using the collars on the spindle as before described the horizontal lever may be placed under the oil box in which the lower end of the spindle turns.

or it may be fixed in any other convenient manner so that the principle of regulating the runner by the compound levers and weights be retained.

What I claim as my Invention and desire to secure by Letters Patent is the mode of increasing or diminishing the weight ~~of~~ of the runner by a self regulating compound power so that fast and good grinding may be performed with small stones instead of large ones; thereby lessening the expense in constructing Mills and so regulating the runner as to prevent any danger of the Mill being shorten or injured from any hard substances getting between the runner and bed stone as before mentioned.

For a further illustration of my invention

7039x May 3, 1832

I refer to the Model and drawing of the same as deposited in the Patent office.

In witness whereof I have hereunto subscribed my name this 28th day of April 1832.

Witnesses
William P. Elliott
William Webb

William G. Johnston

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