

F. SIMMONS.
Dressing Millstones.

No. 97,320.

Patented Nov. 30, 1869.

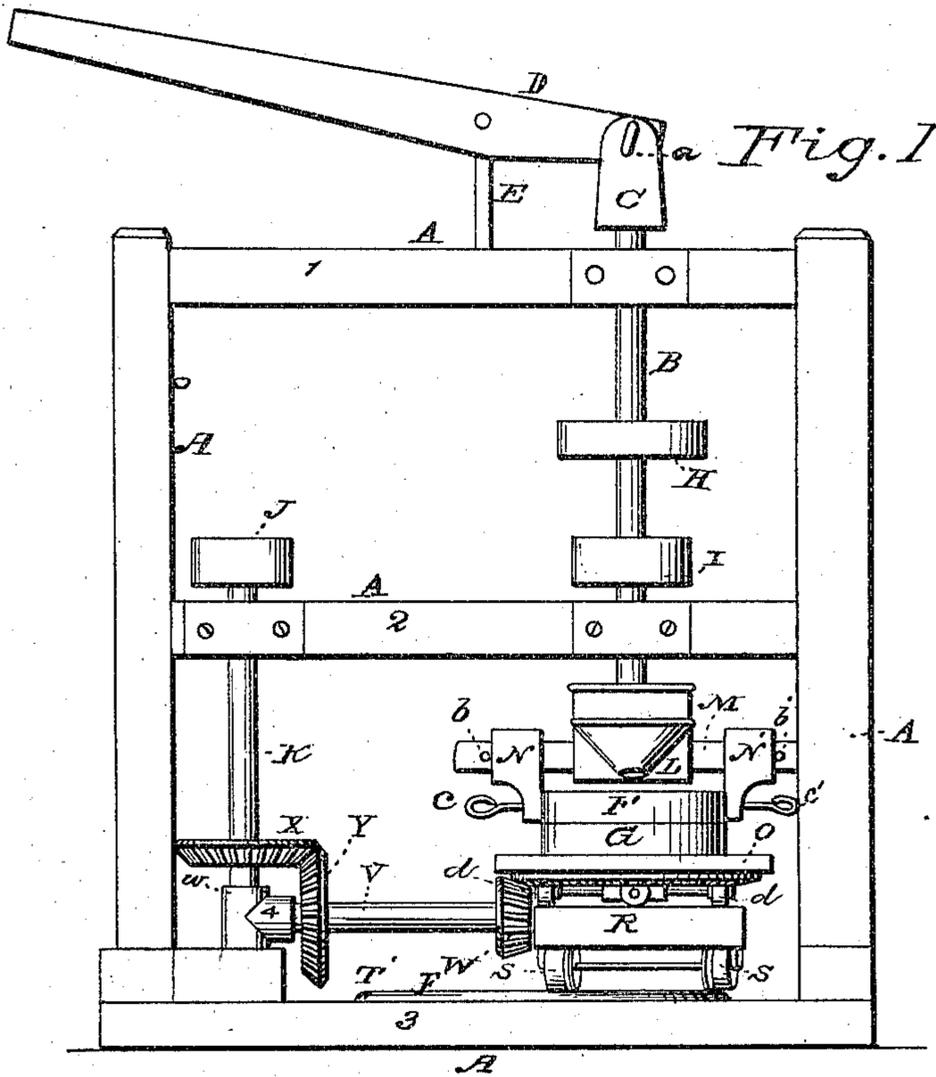
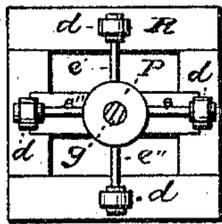


Fig. 2



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FRANKLIN SIMMONS, OF NEW ORLEANS, LOUISIANA, ASSIGNOR TO H. DUDLEY COLEMAN, OF SAME PLACE.

Letters Patent No. 97,320, dated November 30, 1869.

IMPROVED MACHINE FOR DRESSING MILLSTONES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, FRANKLIN SIMMONS, of the city of New Orleans, State of Louisiana, have invented a certain new and useful Improvement in Machines for Dressing Millstones; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the annexed drawing, making a part of this specification, in which—

Figure 1 is a side elevation, and
Figure 2, a sectional view.

The object of my invention is to provide a means for securing perfect uniformity of face-surface on the two stones of grinding-mills, so as to have an exact conformity and adaptation of the one to the other, and in this way to increase the grinding-capacity of any given mill at any given speed, and also an improved quality in the substance ground thereby, whether the same consist of flour, meal, or other farinaceous product.

My invention consists of a mechanical arrangement, by which I am enabled to place and hold both the stones to be dressed in opposition to and in contact with each other, in such manner that there will be an automatic adjustment of the upper one, that will cause the two to bear against each other precisely where a reduction is needed, in order to produce the desired conformity of the face-surfaces, by the attrition resulting from a rotation of the two in opposite directions, with sand and water between them, in combination with a means for changing the relations of the two stones, with respect to each other, so as to have the upper one exactly cover the lower one, or any portion thereof, accordingly as the inequalities in the face of one or the other, or both, may require a reduction throughout the whole or only on a portion of one or both said faces, and also with a means for controlling or regulating the pressure in the operation of dressing the said stones, and for applying the water that is requisite in the process. But my invention will be better understood by referring to the drawing, whereon the same letters denote the same parts at both the figures.

A is a strong frame, in which is mounted a vertical shaft, B, in such manner as to have an up-and-down play within certain limits.

This shaft is provided with jaws C, or some equivalent contrivance, at its upper extremity, so that a lever, D, which has its fulcrum on a standard, E, may be attached to it by means of a pin or bolt, a.

This lever D constitutes a means for elevating the upper stone F above the under stone G, for purposes of examination, &c., and also for regulating the pressure whilst the operation of dressing is going on.

Between the transverse timbers 1 and 2 of the frame A, the pulleys H and I are secured on the shaft

B, the first connecting, by means of a belt, with the motor that drives the machine, and, therefore, being the agent through which this is done, whilst I connects, by means of another belt, with a pulley, J, on the shaft K, for a purpose to be hereafter explained.

To the lower extremity of the shaft B, a hollow transverse arm, L, is firmly secured, through which a bar, M, passes, and is pivoted on a line with the axis of the said shaft.

The hollow in the arm L is sufficiently larger than the bar M, to permit the latter to have a considerable measure of vibration, and the pivot-connection of the two is so arranged that a side vibration or rocking motion is also insured to the bar M, the effect being to give to this bar motion in every direction, precisely as would be the case if the connection between it and the shaft B were effected by what is technically called a universal joint.

On the two extremities of the bar M that project from the arm L, two pendent brackets N N' are secured, by means of pins b b', and between the lower extremities of these brackets the upper stone F is sustained by the pins c c', which pass through them, and take in holes drilled in the said stone for the purpose.

The bar M, in consequence of the mode in which it is attached to the shaft B, causes an automatic adjustment of the stone F to the conditions of its own face, and to the face of the stone G as well, and hence secures an exact conformity of the two, the moment the requisite reduction is effected.

The lower stone G is supported on a circular platform or table, O, which, on its under surface, rests on four small wheels d, that are mounted on four axes, e e' e'' e''', which are secured in a block, P, as shown.

Through the centre of the block P and the platform O, a pintle, g, which projects vertically from a frame, R, passes loosely, and constitutes an axis around which they revolve.

The wheels d rest on the frame R, as shown at both figures, whilst the latter is supported on flanged wheels S, that rest on curved rails T T', which are permanently secured on the floor 3 of the frame A.

The rails T T' represent segments of two circles, drawn from the centre of shaft K, and the wheels S are so adjusted as to traverse the same without friction.

The shaft K is fitted, at its lower end, in a socket-sleeve, U, so as to rotate freely therein, and this socket-sleeve is provided with a branch sleeve-socket, 4, projecting at right angles, and, therefore, horizontally therefrom, in which is fitted the horizontal shaft V, which connects with the frame R, as shown.

A bevel-pinion or friction-pulley is mounted, as shown at W, on shaft V, which gears into an annular bevel-rim of cogs, that is secured to the platform O,

on its under side, and near its circumference, or against a bevel-friction surface in lieu thereof, accordingly as W is a cog-pinion or a friction-pulley, so that when motion is imparted to the shaft B through pulley H, and is transmitted, by means of pulleys I and J, to shaft K, and from the latter, through gears X and Y, to shaft V, the platform O, with the stone G upon it, is rotated, through the agency of W, in reverse direction to the rotation of shaft B and stone F, which is carried by it either at a faster or slower rate, according to the size of the intermediate gearing that gives it motion.

In order to furnish a continuous supply of water, to keep the stones cool, and to wet the sand or other substance that is used to quicken the operation of reduction, I fix a sort of duplex funnel on the arm L, in such manner as to envelop the shaft B for a short space above said arm.

The water, being conducted by a suitable pipe, is poured, in two continuous streams, on the upper stone F, and thence finds its way over the edges and through the central orifice in the same, to the sand between this said stone and the under stone G.

The operation of my invention has been sufficiently manifested by my description of it, and hence I need only further state that I have demonstrated, by actual experiment, that it fulfils the object designed to be

accomplished by it, in the most effective and complete manner, and in a very short period of time, as compared with all other inventions of which I have any knowledge.

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

1. The shaft B, when provided with the hollow arm L, the bar M, the brackets or clamps N N', and the other necessary appliances connected with it, as herein described, in combination with the shafts K and V, when the latter are provided with gears J X Y W, the platform O, block P, axles *e e' e'' e'''*, and wheels *d*, when all the parts are constructed, arranged, and operate substantially as herein specified, for the purpose set forth.

2. The above combination, in combination with the frame R, the wheels S, and the curved rails T T', substantially as herein described, for the purpose set forth.

3. The last above-mentioned combination, in combination with a frame, A, and any suitable motor for operating the machine, as herein described.

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Witnesses:

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