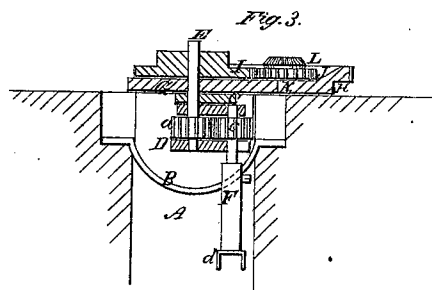
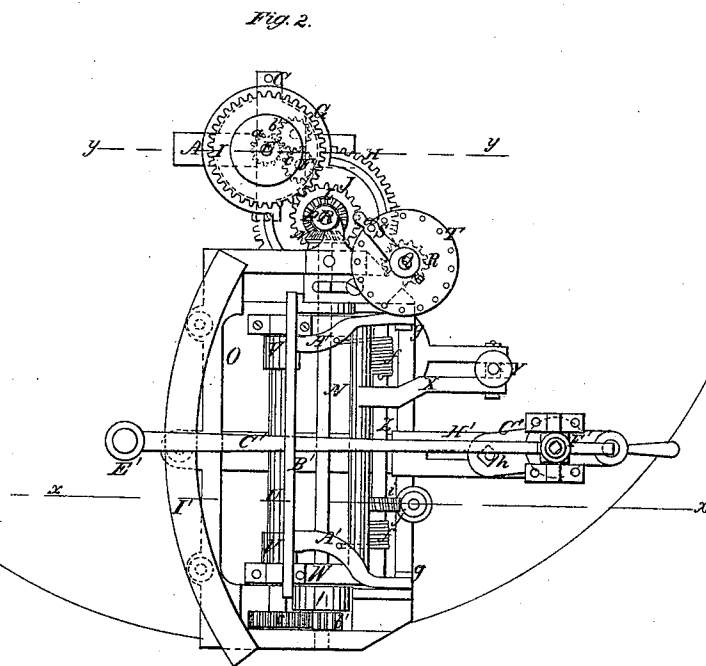
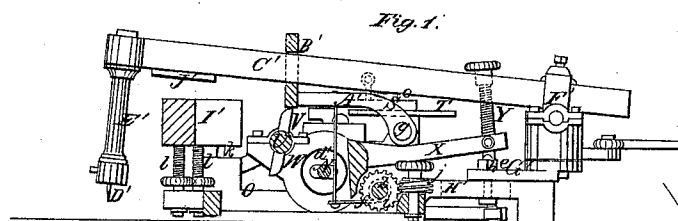


R. D. Nesmith,
Dressing Millstones.

N^o 14,109.

Patented Jan. 15, 1856.



UNITED STATES PATENT OFFICE.

R. D. NESMITH, OF LAKE VILLAGE, NEW HAMPSHIRE.

MACHINE FOR DRESSING MILLSTONES.

Specification of Letters Patent No. 14,109, dated January 15, 1856.

To all whom it may concern:

Be it known that I, R. D. NESMITH, of Lake Village, in the county of Belknap and State of New Hampshire, have invented a new and Improved Machine for Dressing Millstones; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, making part of this specification, in which—

Figure 1, is a vertical section of my improvement (*x*) (*x*) Fig. 2, showing the plane of section. Fig. 2, is a plan or top view of ditto. Fig. 3, is a vertical section of the gearing within the eye of the upper stone or runner (*y*) (*y*) Fig. 2, showing the plane of section.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists in a peculiar means employed for lengthening or shortening the pick arm.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A, represents the eye of the upper mill stone which is of course inverted in order that its face may be picked or dressed.

B, is the bail fitted within the eye A, see Fig. 3.

C, is a metallic plate which is secured across the eye A, at the face of the stone in any proper manner, and to the under surface of the plate C, a small framing or box D, is secured. Through the center of the plate C, there passes a vertical arbor E, the lower end of which is stepped in the lower part of the framing or box D, and a pinion (*a*) is placed upon the lower end of the arbor E, which pinion gears into a corresponding pinion (*b*) in the framing or box D. The pinion (*b*) gears into a pinion (*c*) also placed in the framing or box D, and attached to the upper end of an arbor F, the lower end of which is provided with a fork (*d*) see Fig. 3. The fork (*d*) is fitted over the upper part of the mill spindle which has its bearing at the center of the bed or lower mill stone, and the object of the gearing (*a*) (*b*) (*c*) and arbors E, F, is that the machine, by which the upper stone is dressed, may be hung or work upon an arbor at the center of the eye of said stone, as the arbor E, just described. In dressing the lower mill stone, the machine may of course be hung upon the spindle

which is at the center of the stone, but the spindle cannot be passed through or placed at the center of the eye A, of the upper stone on account of the bail B, which crosses the center of the eye A.

G, represents a circular plate having a hole at its center through which the arbor E, passes. This plate G, has a circular rack plate H, attached to it, and a toothed wheel I, is also placed on the arbor E, said toothed wheel I, resting upon the plate G, see Figs. 2 and 3.

J, represents a pinion which is hung loosely upon a rod K, the lower end of which is fitted or stepped in the center of the rack plate H. The pinion J, gears into the toothed wheel I. To the upper side of the pinion J, there is attached a bevel pinion L, which gears into a bevel pinion M, on the end of a horizontal shaft N, which is fitted in a rectangular frame O. This frame O, has a socket P, at one end, which socket fits on the rod K. To the same end of the frame to which the socket P, is attached there is placed a vertical shaft Q, which has a pinion R, on its lower end, said pinion gearing into the circular rack H. The upper end of the shaft Q, has a crank S, attached to it, which is placed over a circular plate T, attached to the frame O, the plate T, having holes made through its edge for the purpose of allowing the crank to be secured at desired points by a pin (*a'*) which passes through the end of the crank and through either of the holes in the plate. See Fig. 2. One end of the shaft N, has a pinion (*b'*) upon it, which pinion gears into a pinion (*c'*) on the end of a shaft U, which has two cams V, V, upon it. The shaft U, works in bearings placed at the front end of a vibrating frame W, which works on circular projections (*d'*) attached to the inner sides of the frame O. The back end of the frame has an arm X, attached to it, through the outer end of which a screw Y, passes, the lower end of said screw bearing or fitting in a step (*e*) attached to the back part of the frame O.

Z, represents a shaft placed in the back part of the frame O. This shaft has two spiral springs (*f*) (*f*) placed upon it. The inner ends of these springs are attached to the shaft Z, and the outer ends are attached to arms A', A', the back ends of which are attached by pivots (*g*) to the frame O. The front ends of the arms have a slotted bar

B', attached to them, said bar being equal in length to the frame O.

C', represents the pick arm which passes through the slotted bar B'. The pick D', is attached to the front end of the arm C', the pick being secured in a socket E', attached vertically to the arm, see Fig. 1. The back end of the pick arm is secured in a head F', which is attached to a plate G', said plate having a set screw (h) passing through it, said set screw fitting in a slot in a plate H', attached to the back part of the frame O. The head F', is allowed to turn on the plate G'.

The shaft Z, has a pinion (i) upon it, in which a screw (j) attached to the frame O, gears.

I', represents a curved bar attached to the front part of the frame O. The ends of this bar are fitted on vertical pins (k) attached to the ends of the frame O, and set screws (l) are placed in the frame O, underneath the bar I', for the purpose of raising and lowering the bar I', as desired.

J', represents a piece of india rubber or other suitable elastic material attached to the under side of the pick and directly over the bar I'.

The spindle which passes through the center of the lower mill stone gives motion to the arbor F, and the arbor gives motion to the arbor E, at the center of the upper mill stone or runner by means of the pinions (a) (b) (c). The upper stone being inverted and placed upon the lower or bed stone. The toothed wheel I, rotates the pinion J, and bevel pinion L, and motion is consequently communicated to the shafts N, U. The cams V, V, raise the slotted bar B', and also the pick arm C', which passes through said bar, and when the slotted bar is relieved from the cams it is brought down by the springs (f) (f). The pick operates upon the stone with a force proportionate to the strength of the springs (f) and the force of the blow of the pick may be regulated by turning the shaft Z, by means of the pinion (i) and screw (j) as the strength of the springs is increased and diminished thereby. The pick arm C', also may be raised higher or lower by adjusting the frame W, by means of the screw rod Y, so that the front end of said frame may be

elevated or depressed to cause the cams V, to act more or less upon the slotted bar B', and by fully depressing the front end of the frame W, the cams will be thrown beyond the reach of the slotted bar, so that the pick arm will not be operated and the pick may be adjusted in the socket E', without stopping the other parts of the machine. The pick arm C', may be moved by the hand of the operator either to the right or left the whole length of the slotted bar, and the pick arm may be lengthened or shortened by adjusting the sliding plate G', upon the plate I I'. The frame O, may be made to turn radially with the arbor E, or tangentially with it, by turning the crank S. By the above invention the machine is made to turn on an arbor at the center of the eye of the upper mill stone, this has not heretofore been done. They have been adjusted directly to the spindle which in consequence of the bail B, as previously stated, cannot be placed at the center of the eye A, of the upper stone, and consequently the machine requires continual adjustment as it can only work as it is set. My improvement, viz, the gearing in the eye A, of the upper stone obviates this objection. My machine may also be employed for any style of dress, as the pick arm C', may be lengthened or shortened with the greatest facility, and the force of the blow of the pick graduated as desired.

I do not claim the method shown for adjusting the machine radially or tangentially with the arbor E, neither do I claim the method of operating the pick arm C', for these devices have been previously used, but

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

I claim securing the back end of the pick arm C', to a head F', attached to a sliding plate G', the head being allowed to turn on the sliding plate, whereby the length of the pick arm may be increased or diminished as desired, and also the position of the pick arm varied in the machine as set forth.

R. D. NESMITH.

Witnesses:

JOHN BLAISDELL,
ALFRED BEAN.