M. H. Bacon,

Dressing Millstones.

No. 29,047. Patented July 10, 1860.

Fig. 1.

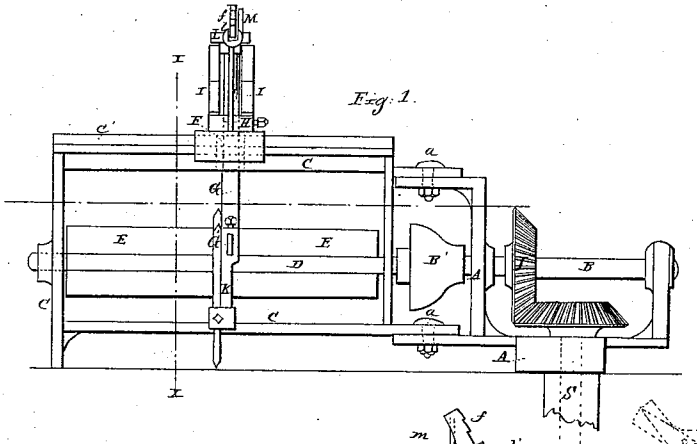


Fig. 6

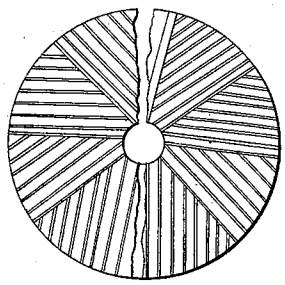


Fig. 2.

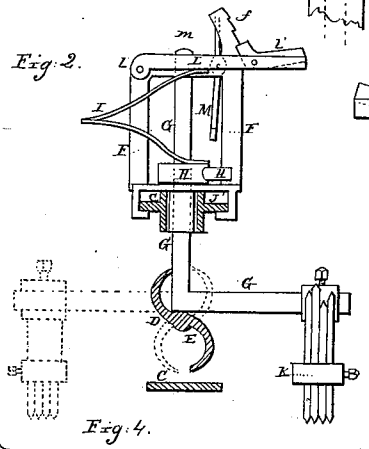


Fig. 3

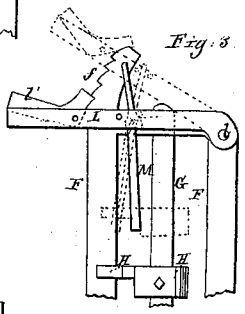


Fig. 5.

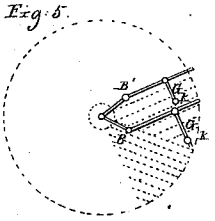
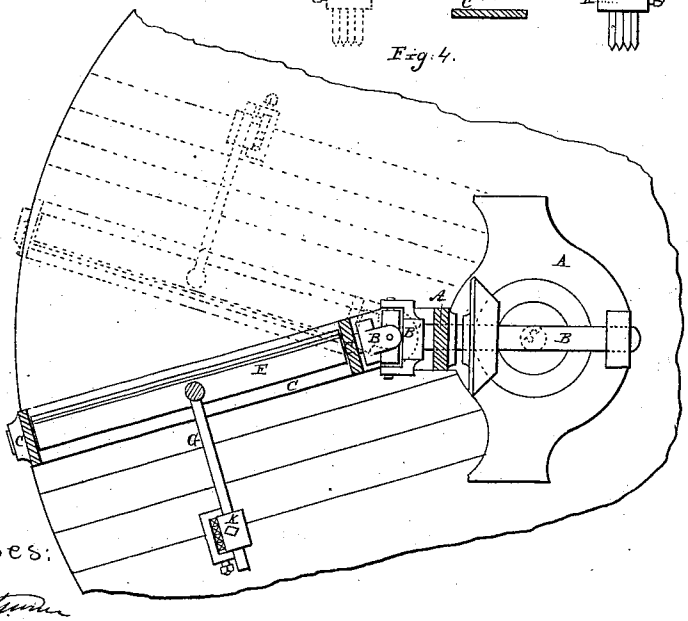


Fig. 4.



Witnesses:

S. Brightman

J. H. Lovett

Inventor:

Miner H. Bacon

AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

MINER H. BACON, OF MYSTIC, CONNECTICUT.

MACHINE FOR DRESSING MILLSTONES.

Specification of Letters Patent No. 29,047, dated July 10, 1860.

To all whom it may concern:

Be it known that I, MINER H. BACON, of Mystic, in the county of New London and State of Connecticut, have invented a new and improved machine for dressing millstones by the motion of the spindle of the mill, which I believe is cheaper in construction and easier to operate than any other; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1, is is a side elevation. Fig. 2, is a vertical section through the line x, x, in Fig. 1. Fig. 3, is a view of the device for arresting the action of the tool, on a larger scale. Figs. 4 and 5, are diagrams showing the adjustment of the machine for dressing different lines. Fig. 6, is a representation of the work done by the machine.

Similar letters of reference indicate like parts in all the figures.

In all machines known to me there has been a considerable amount of oiled frictional surface exposed to dust arising from the stone while undergoing the process of dressing, which thus becoming filled with gritty particles is speedily worn out and rendered useless. In my machine those wearing surfaces which cannot be readily renewed at a small expense are placed at such an elevation as to be comparatively free from this difficulty. Another objection to all machines for this purpose previously known to me is the necessity of stopping them and the mill spindle when a readjustment is desired. By means of the same self-acting device which graduates the force of the blows, I arrest the action of the tool altogether at any instant desired and readjust the machine while the other parts are in motion. By this arrangement I save the time otherwise lost in stopping and starting, and am thus enabled to do a greater amount of work in the same time. It has also been necessary in all previous inventions known to me which were operated by the mill spindle to use two separate and distinct machines for dressing stones which turn in opposite directions, or to construct extra working parts in addition to the making of certain parts reversible thereby adding to the expense of building the machine, and prolonging the time required to operate it. In my invention the same machine answers equally well for both, by simply reversing a portion of the working parts, as is shown in the drawings, and will be more fully described below.

To enable others to make and use my invention I will proceed to describe its construction and operation by the aid of the drawings and the letters of reference marked thereon.

A, is a frame which surrounds the mill spindle and carries a horizontal shaft B, in suitable bearings, which shaft receives a continuous rotary motion from the mill spindle as shown. Another frame C, is hinged to A, at a point a, in such a manner that it can be turned to a short distance to the right or left without disturbing A. In this frame C, I hang a shaft D, carrying a suitable cam or wiper E, which shaft and wiper receive their motion from the shaft B, through a universal joint B′. Upon the top of C, I provide parallel ways C′, on which is placed a carriage F, free to slide the whole length of C. This carriage supports in suitable bearings an upright spindle or tool-stock G; upon which a collar H, carrying two springs I, I, and guides H′, is fixed by a set screw; the guides H′, slide upon an upright portion of F, and prevent the spindle from turning except the set screw be loosened. The tool stock G, receives a vertical reciprocating movement from wiper E, and springs I, I. At the lower end of G, is firmly affixed a horizontal arm G′, upon which is placed an adjustable tool holder K, in which are secured bars of steel with their ends sharpened for the purpose of pecking the face of the stone. Springs I, I, can be increased or diminished in effect by means of a lever L, having its fulcrum in the carriage F, at l and a spring catch l', at its other end taking into notches f, in the carriage F. A spring catch M, is also attached to carriage F, by a screw or rivet m, around which it is free to move to a limited extent. This catch is operated by pins or stops upon lever L, acting upon the upper end of M. The lower end of M, is formed into a hook as shown in Fig. 1, which hook when thrown into the position shown in dotted lines in Fig. 3, springs under a projection formed upon slide H′, thus retaining the tool in its highest position and out of contact with the wiper E, but when the hook is in the position shown by the strong lines, it allows H′, to pass without obstruction.

In commencing to operate my invention the frame A, is placed upon the stone in

such a manner that the gear may be turned by the mill spindle. Frame C, is then adjusted to a position parallel to the line of cut desired, as shown in Figs. 4 and 5, and tool-holder K, shifted out or in upon arm G′, until it strikes the particular land which it is desired to dress. By shifting the position of C, and K, any line at any required angle can be dressed at will. The power being applied, the attendant moves the carriage F, along on its ways as fast as the tool cuts to the required depth, which can be regulated by the position of collar H, upon tool stock G.

The force of the blow is graduated by means of the lever L, to suit the circumstances, a harder stone or duller tool requiring a much more vigorous blow than a soft stone or sharp tool. When the carriage has been moved as far as desired, lever L, is raised to its limit, thus releasing the springs and throwing into action the catch M, which arrests the motion of the tool. The machine is then readjusted for another line of cut, and the lever L, depressed which releases the tool and tightens the springs to the required tension.

Stones which revolve in opposite directions have their furrows cut at reversed angles, and in order to enable my improved machine to dress such stones all that is necessary is to reverse the tool stock and wiper as shown in Fig. 5, and by dotted lines in Figs. 2 and 4. When it is desired to change the machine for this purpose the wiper E, is turned end for end in frame C. The tool holder K, is then removed, the set screw in H, loosened, and the tool-stock G, turned through one half a revolution. The set-screw in H, is then tightened, tool holder K, replaced and the machine is ready.

The advantages of my invention over other machines known to me for this purpose were briefly set forth at the commencement of this specification. Fig. 5, is designed to show in a clear light the peculiarity by which my machine is able to dress a great number of parallel lines without employing any long splined shaft to be injured by the gritty particles struck off from the stone. The bearings of my machine may be protected from such destructive agencies by carefully inclosing them, but the long oily shaft required in other machines than mine cannot be so protected.

The ways C′ C′, in my machine as in others are exposed to receive such deposits, but mine are at such an elevation that the grosser particles are usually avoided, and it should be observed that these ways and the carriage traversing thereon, are less delicate that the splined shaft and feathered wheel which in other machines are exposed in addition to the ways.

I do not claim stopping the motion of the cutting tool while the other parts continue their motion, but

Having now fully described my improved machine for dressing mill stones, what I claim as new therein and desire to secure by Letters Patent, is—

1. The combination of the loose joint B reversible wiper E and reversible cutter bar G′ or their respective equivalents in the hinged frame A, C so that the path of the cutters may be adjusted to all the lines required upon the face of the stone substantially in the manner herein described.

2. Operating the hook M, or its equivalent, by the same motion which graduates the force of the blow, or by a continuation of such motion substantially as herein set forth.

3. Reversing the position of the wiper E, and arm G′ substantially as herein described, to allow of dressing stones, which turn in opposite directions.

MINER H. BACON.

Witnesses:
C. E. WIGHTMAN,
T. H. LOVETT.