

J. Armstrong,
Dressing Stone.

N^o 53,940.

Patented Apr 17, 1866.

Fig. 2.

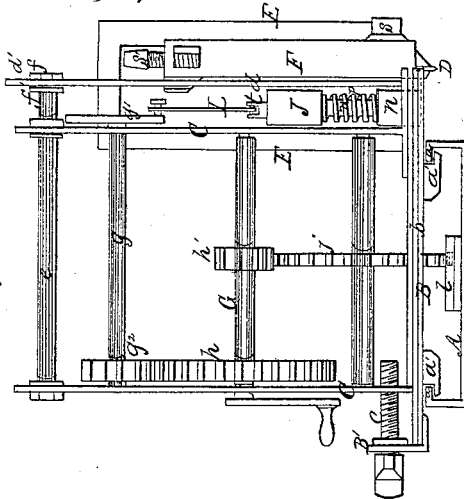


Fig. 4.

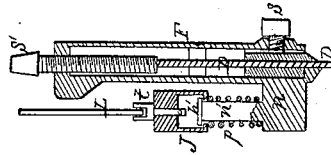


Fig. 1.

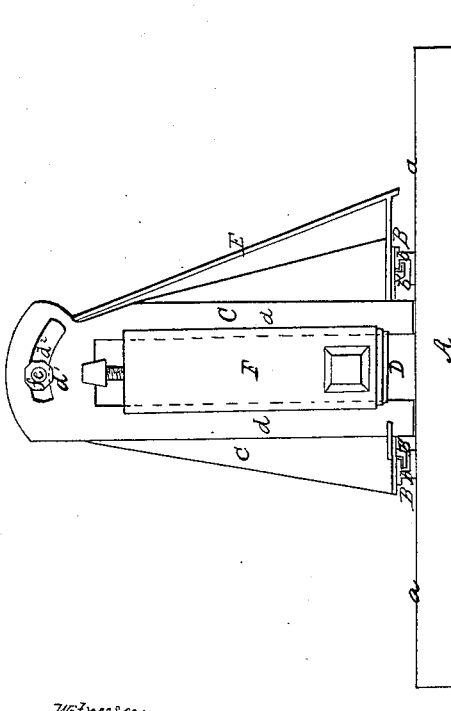
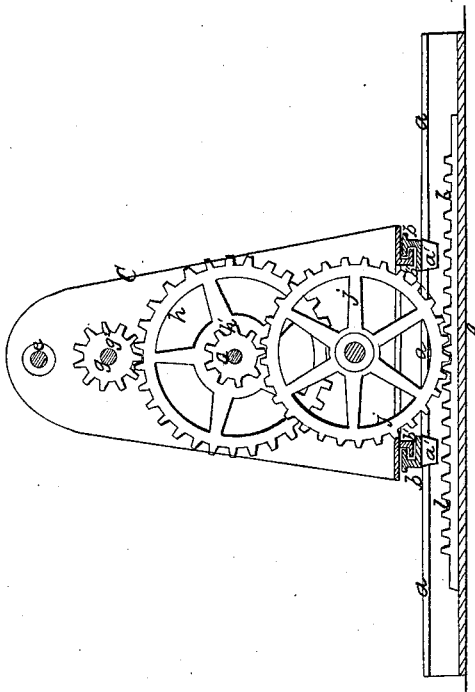


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES ARMSTRONG, OF BUCYRUS, OHIO.

IMPROVED STONE-DRESSING MACHINE.

Specification forming part of Letters Patent No. 53,940, dated April 17, 1866.

To all whom it may concern:

Be it known that I, JAMES ARMSTRONG, of Bucyrus, Crawford county, State of Ohio, have invented a new and Improved Machine for Dressing Stone; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is an elevation of one side of my stone-dresser. Fig. 2 is an end view of the machine. Fig. 3 is a longitudinal section taken in a vertical plane through the center of the machine. Fig. 4 is a vertical section through the pick and its reciprocating slide and spring-cushion.

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

This invention relates to certain novel improvements on machinery for leveling and dressing the surfaces of millstones and slabs of stone of all varieties.

The invention relates particularly to improvements on that class of stone-dressing machinery in which a reciprocating carriage is employed for carrying the chisel and the gearing for operating it.

The nature of my invention consists in providing the reciprocating carriage which carries the cutter with inclined and perpendicular guideways arranged at right angles to each other, and in such relation to the driving crank-shaft for the chisel-holder that the chisel can be readily adjusted to pick the stone in lines parallel to the line of the movement of the carriage, or at right angles thereto, as may be desired.

It also consists in providing for adjusting the guides of the chisel-holder so as to cause the cutting-edge of the chisel to strike squarely upon its work, as will be hereinafter described.

It also consists in relieving the machinery which operates the chisel-holder from injurious concussions, and also giving an elastic blow and upward thrust to the chisel-holder at every stroke by interposing an elastic cushion between the chisel-holder and its driving-crank, as will be hereinafter described.

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

In the accompanying drawings, A represents

a horizontal foundation, which is constructed with parallel flanges *aa* on its sides for receiving and guiding a horizontal transverse bed-piece, B, which is intended to receive a reciprocating motion in a right line. This foundation-plate B is connected to the bed A by means of jaws *a' a'*, which extend under the overhanging flanges *aa* and prevent the plate B from rising from its seat. This plate B is constructed with parallel guides *bb* on its edges, which are at right angles to the guides *aa*, and which receive the holding-down jaws *b' b'* on the bottom of a frame, C, as shown in Figs. 1 and 3. This frame C can be moved back and forth in a direction with the length of the bed A, or it can be adjusted at right angles to said movement. The adjusting-screw *c*, which passes loosely through a lug, B', of the bed B, and is tapped through one side of the frame C, is used for adjusting this frame upon its bed B.

The frame C consists of two perpendicular sides, which are suitably braced and strengthened. The base of this frame projects out horizontally from one of said sides and serves as the bottom support for the chisel-holder guides *dd*, which guides are connected together at their upper ends by a plate, *d'*, having a slot, *d²*, through it, through which passes one end of a brace-rod, *e*. This brace-rod *e* receives the upper end of the guide *dd'*, between two nuts, *f f'*, which are used for fixing the guide in any desired position. The upper end of said guide is adjusted in a direction with the length of the foundation A, for the purpose of causing the cutting-edge of the chisel D to strike squarely upon its work. Sometimes the edge of the chisel D will wear off or be ground off more on one corner than on the other, so that this edge will not be exactly at right angles to the upright edges of the chisel. When this is the case the upper end of the guide is adjusted until the edge of the chisel is parallel to the foundation-plate A.

The lower ends of the guide-bars *dd* are left open for the purpose of removing the chisel-holder.

I also employ inclined guides E, which are arranged at right angles to the guides *dd*, and which incline outward from the upper end of the frame C, extending down to its base. These guides are also open at their lower ends

for the purpose of receiving the chisel-holder F and admitting of the removal thereof. The upper ends of the inclined guides E are arranged in such relation to the crank-shaft g that the same crank-wheel g' will operate the chisel-holder, whether it be arranged in the guides d or in those lettered E. The only change which it is required to make to use the chisel-holder in the vertical or inclined guides will be hereinafter described.

G represents a driving-shaft carrying a large spur-wheel, h , which engages with a pinion, g^2 , on a crank-shaft, g . The pinion h' on the shaft G engages with the teeth of a large spur-wheel, j , which is arranged below the shaft G. This large spur-wheel j engages with a rack, l , on the upper surface of the foundation A, so that the main shaft G shall reciprocate the chisel-holder, and at the same time move the carriage C and its bed-plate B upon the foundation A.

The chisel-holder F is constructed hollow to receive within it the flat chisel D, which is secured in its place by means of a set-screw, s , and an adjusting-screw s' , against which latter the upper end of the chisel abuts. On the back of the chisel-holder F two grooved blocks are secured for receiving the edges of the guides d or E.

To the lower block, n , a pin n' is secured, as clearly shown in Fig. 4, which pin receives around it a spiral spring, p , that presses against a box, J, and forces this box against a nut, p' , that is screwed on the upper end of the pin n' . The box J is allowed to slide freely up and down on the pin n' , resisted only by the spring. The pitman-rod L is attached to the crank-pin of the wheel g' at its upper end, and at its lower end this pitman-rod is pivoted to a swivel-pin, t . The object of the swivel-pin t is to allow the pitman-rod to be turned for changing the chisel-holder from one guide to another.

The bed-plate A, on which the sliding carriage is arranged, is desired to be a perfect plane to rest on the millstone or slab. If it becomes necessary to strike oftener in one place than another, this can be done by giving an oscillating motion to the main driving-shaft.

The bed or foundation A operates as a leveler of millstones or slabs of stone and enables me to dispense with the red-staff, such as is used in leveling the face of millstones.

The chisel or pick D is thrown down upon the stone by the action of the crank and pitman upon the box J, and as this box is supported by a spring of metal or india-rubber, the concussion caused by the chisel or pick striking the stone will be modified and the crank g' allowed to rotate smoothly. This spring will not only receive the concussion and deaden the jar, but by its recoil it will start the chisel upward as the crank g' commences its upward strokes.

The speed of the machine may be increased or diminished by changing the gear-wheels in any suitable manner. If desirable, the cutter-carrying frame C may be moved by hand instead of by the driving-shaft G, as above described.

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

1. Interposing an elastic cushion between the chisel-holder F and the pitman-rod or crank-pin in such manner that this cushion shall receive the concussion caused by the sudden striking of the chisel upon the stone, substantially as described.

2. Pivoting the lower end of the pitman-rod L to the chisel-holder F by means of a swivel-pin, t , and a spring-box, J, substantially as described.

3. The combination of the two guides d and E with the movable frame C, arranged substantially as described.

4. Providing for adjusting the guides d at their upper end, substantially in the manner and for the purposes described.

5. Applying two chisel-guides to the movable frame C in such manner that the chisel-holder F can be operated in either guide by a single crank, g' , substantially as described.

JAMES ARMSTRONG.

Witnesses:

S. R. HARRIS,

J. G. ROBINSON.