

No. 886,502.

PATENTED MAY 5, 1908.

R. C. HELMS.
MILLSTONE DRESSING MACHINE.

APPLICATION FILED FEB. 6, 1908.

2 SHEETS—SHEET 1.

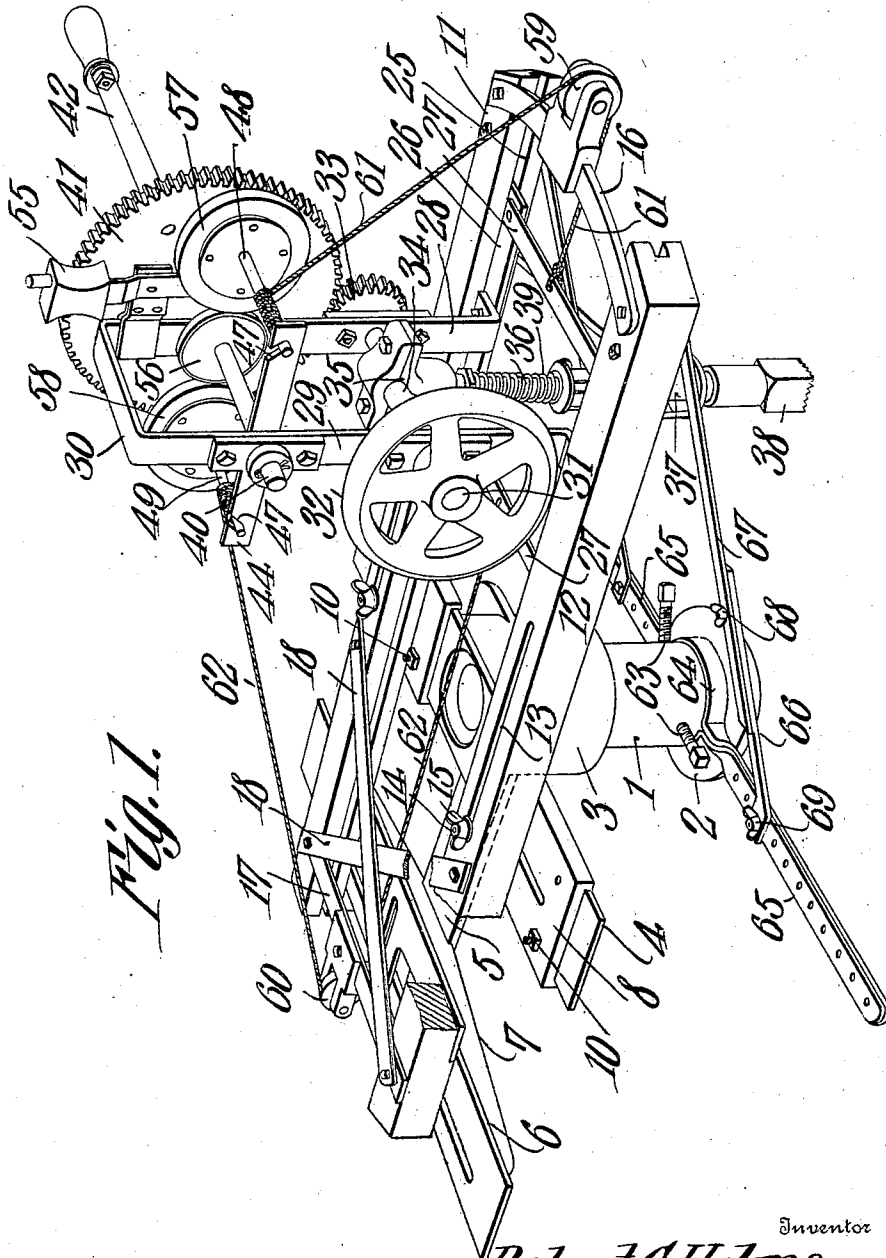


Fig. 1.

Witnesses

E. J. Hunt
F. T. Chapman

Inventor

Robert C. Helms.

By

Cash & Co.

Attorneys

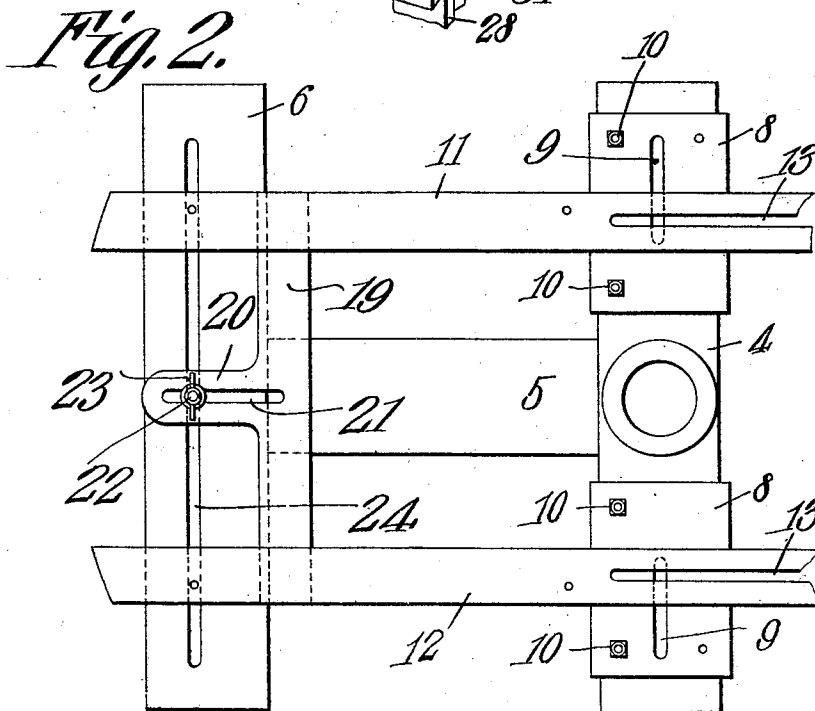
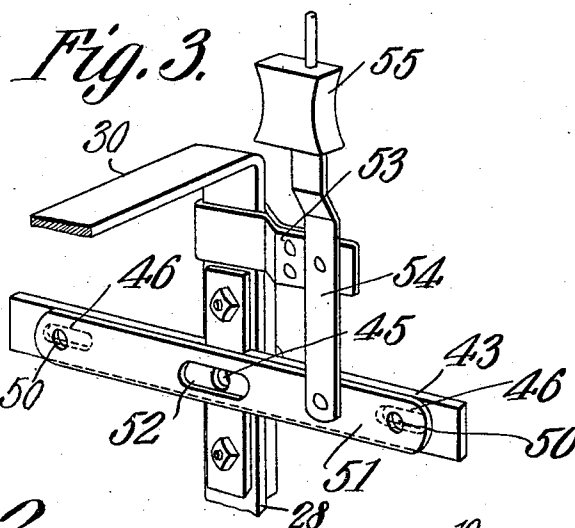
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Witnesses
E. J. Stewart
F. J. Chapman

Inventor
Robert C. Helms.
By *C. Snow & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

ROBERT C. HELMS, OF DOTHAN, ALABAMA, ASSIGNOR OF ONE-HALF TO HENRY A. PEARCE,
OF DOTHAN, ALABAMA.

MILLSTONE-DRESSING MACHINE.

No. 886,502.

Specification of Letters Patent.

Patented May 5, 1908.

Application filed February 6, 1908. Serial No. 414,635.

To all whom it may concern:

Be it known that I, ROBERT C. HELMS, a citizen of the United States, residing at Dothan, in the county of Houston and State of Alabama, have invented a new and useful Millstone-Dressing Machine, of which the following is a specification.

This invention has reference to improvements in millstone-dressing machines, and its object is to provide a machine wherein the pick or dressing tool may be brought into operative relation with any part of the face of the stone to be operated upon in any direction so that when the machine is once placed in operative relation to the stone the face of the latter may be suitably formed.

The invention comprises a pedestal or post capable of being secured axially to the stone, and this post carries a frame in such manner that the latter may be rotated entirely around the post with the pick so mounted as to traverse the stone in a diametric plane cutting the axis of the stone in any number of planes parallel to any diametric plane of the stone.

The invention furthermore comprises means whereby the pick may be reciprocated and at the same time fed over the stone to properly cut the same, as desired.

The invention will be best understood from the following description taken in connection with the accompanying drawings forming a part of this specification, in which drawings—

Figure 1 is a perspective view of the machine with parts broken away. Fig. 2 is a plan view of a portion of the supporting frame. Fig. 3 is a perspective view of a detail of the construction.

Referring to the drawings, there is shown a hollow post or pedestal 1 formed with a circumferential flange 2 at its lower end, and at its upper end receiving a cap 3 carrying a laterally-extending arm 4 and another arm 5 at right angles to the arm 4, the last arm terminating in another arm 6 at right angles to the arm 5 and parallel to the arm 4, and in substantially the same plane.

The arms 4 and 6 may be suitably strengthened by ribs 7, and such ribs may be used whenever necessary to impart the requisite strength to the parts. Fast upon the arm 4 are two spaced plates 8 partially embracing the arm, and these plates are each provided with a longitudinal slot 9. The plates are

held to the arm 4 by means of bolts 10, or any other means for this purpose may be employed. Mounted upon the plates 8 are two parallel timbers 11—12 each having about midway of its length a longitudinal slot 13 for the passage of a bolt 14 extending down and through the corresponding slot 9 so that the bolt which is provided with a thumb nut 15 on its upper end may serve to clamp the respective timber 11 or 12 to the corresponding plate 8 in any position of adjustment with relation to the length of the timber and the distance thereof from the vertical axis of the post 1.

One end of the two timbers 11 and 12 are secured together in spaced relation by a bar 16 and at the other end in like spaced relation by another bar 17, while the parallelism of the two bars is maintained by cross braces 18 firmly secured to the two timbers. Fast on the under side of the two timbers near the braced end thereof is another cross piece 19 firmly fastened in place and provided with a central side extension 20 having a longitudinal slot 21 for the passage of a bolt 22 provided with a wing nut 23 and engaging in a longitudinal slot 24 formed in the arm 6. By this means the corresponding end of the timbers 11 and 12 are moved laterally with relation to the post 1 at the same time that these timbers are moved upon their plates 8.

The inner facing edges of the two timbers 11 and 12 are provided throughout their length with longitudinal slots 25, in which engage slides 26 held together by spacing brace rods 27, and on these slides are erected two spaced standards 28—29 connected at the upper end by an integral member 30. In the two standards are formed suitable journal bearings for a shaft 31 carrying at one end a balance wheel 32 and at the other end a pinion 33. Between the two standards the shaft 31 is formed into a crank 34 receiving a journal box 35 on the upper end of a reciprocating rod 36 having a bearing in the guide 37 carried by the slides 26. The lower end of this rod is provided with a suitable interchangeable stone dressing tool 38. Upon the rod 36 is a spring 39 for the purpose of rendering the blow of the tool 38 more or less elastic. This is a common structure in machines of this character and need not be further described. Above the shaft 31 there is journaled in the standards 28 and 29 another shafting 40 carrying at one end beyond the

standard 28 the gear wheel 41 to which may be attached a suitable crank 42, and the gear wheel 41 is in mesh with the pinion 33 so that when the crank is manipulated in the proper manner rotative motion is imparted to the shaft 31 and the tool 38 is reciprocated in such manner as to act in the desired way upon the stone to be dressed.

The standard 28 carries an arm 43 extending laterally beyond the side of the standard at the height of the shaft 40, and the standard 29 carries a similar laterally-extending arm 44 extending on each side of said standard 29. The arm 43 has a suitable perforation or passage 45 for the shaft 40 and also has near its ends elongated slots 46. The arm 40 has inclined seats or recesses 47 near its ends. Seated in the recesses 46 and 47 are two shafts 48 and 49, and these shafts each pass through a perforation 50 in the sliding bar 51 close to the arm 43, and this bar has a central longitudinal slot 52 embracing the shaft 40 so that the bar is capable of longitudinal movement along the arm 43 without interference with the shaft 40. Fast on the standard 28 near the upper end thereof is a bracket 52, and this bracket carries a lever 54, the lower end of which is pivotally connected to the bar 51 while the upper end is formed with a handle 55.

Fast upon the shaft 40 close to the standard 28 is a friction wheel 56, and fast upon each shaft 48 and 49 are other friction wheels 57 and 58, respectively. Either of these friction wheels is out of engagement with the friction wheel or disk 56 but may be brought into engagement with the said friction disk 56 by the manipulation of the lever 54 to slide the bar 51 in the proper direction.

The bar 16 carries a sheave 59, and the bar 17 carries another sheave 60. There is a cord or rope or strand 61 fast to the spacing connection 27 and extended around the sheave 59 and up to and wound on the shaft 48, and there is another rope, cord or strand 62 fast to the other spacing connection 27, and extending around the sheave 60 and ultimately wound around the shaft 49 in a direction opposed to the winding of the cord 61 on the shaft 48.

The post 1 may be made fast to a rod or bar passing through the eye of a mill-stone by means of radial set screws 63, so that the post may be centered upon the stone and in any position of adjustment about an axis perpendicular to the face of the stone and surrounding the post close to the flange 2 is a collar 64 from which extends in diametrically opposite directions two arms 65 perforated at numerous equidistant points, and extending from these arms 65 are brace bars composed of two parts 66 and 67, the parts 66 being secured removably to the arm 65 and the part 67 being secured to that end of the corresponding side beam 11 or 12 carrying

the sheave 59. The two parts 66 and 67 are capable of sliding one on the other and secured at any particular point of adjustment by thumb nuts 68, while other thumb nuts 69 serve to connect the end of the parts 66 to the arm 65.

Suppose, now, that the post 1 is secured upon a rod or bar extending through the eye of the mill-stone and that the beams 11 and 12 are equidistantly disposed with relation to the vertical axis of the post 1. If, now, the shaft 40 be rotated by means of the crank 42, up and down reciprocatory movement is imparted to the tool 38 and the face of the mill-stone is cut in the plane of a diameter thereof. If, during the action of the cutting tool the lever 55 be moved in the direction to bring the friction wheel 58 into contact with the disk 56, then the cord 62 will be wound upon the shaft 49 and the carrier or support made up of the slides 26 and standards 28 and 29 will be moved toward the post 1 on a diameter of the stone. Should the lever 55 be moved in a direction to bring the friction wheel 57 into engagement with the friction disk 56, then the cutting tool is carried away from the center of the stone. In order to cut scores in the face of the stone other than on the diameter the beams 11 and 12 are shifted one side or the other of the axis of the stone so that the cutting tool 48 will no longer travel along a diameter of the stone but along lines parallel thereto.

It will be seen that by adjusting the beams 11 and 12 along the plates 8 so that the central longitudinal plane of these beams is to one side of the axis of the post 1 and then by adjusting the bar 19 still further to one side of the diametric plane of the axis of the post 1, the tool may be made to travel along a line at an angle to a cut already made.

What is claimed is:—

1. A mill stone dressing machine comprising a hollow post or pedestal, means for securing the same in the axis of a mill stone, a frame wholly supported by and rotatably mounted on said post and adjustable both longitudinally and laterally with relation to said post, and operating means for a mill stone pick or dressing tool capable of longitudinal movement in said frame.

2. A mill-stone dressing machine comprising a hollow pedestal, a support rotatably mounted thereon and composed of two parallel arms, two spaced beams connected to the parallel arms for longitudinal and transverse adjustment thereon, a sliding carriage mounted on said beams, a tool holder and actuating means therefor mounted on the carriage, adjustable brace rods connected to the beams, and a rotatable collar having oppositely-disposed arms, said collar surrounding the post or pedestal and the brace rods being adjustably connected to the oppositely-disposed arms.

3. A mill-stone dressing machine comprising a suitable post or pedestal, a frame mounted for rotation thereon, spaced parallel beams longitudinally and transversely adjustable on the frame, a sliding carriage mounted for longitudinal movement in said beams, a dressing tool, and actuating means therefor mounted on the carriage, winding means mounted on the carriage, a friction member connected to the actuating mechanism for the dressing tool, other friction members mounted on the winding means, means for bringing the friction members on the winding means into individual active relation to the friction member on the tool-actuating means, and connections from each winding means to the corresponding end of the carriage.

4. A mill-stone dressing machine comprising a post or pedestal, means for fixing the same axially with relation to the mill-stone, a rotatable frame carried by the pedestal, beams in fixed relation one to the other and provided with longitudinal grooves on their facing edges and with longitudinal slots for the outer portion of their lengths, means for adjusting the beams longitudinally, means for adjusting the beams laterally with relation to the axis of the post or pedestal, a

sliding carriage mounted in the grooves in the beams, a tool carrier and actuating means therefor mounted on the carriage, separate winding means mounted on the carriage and adapted to move the latter in opposite directions, a friction coupling in operative relation to the winding means, means for rendering the friction coupling active to either winding means, and connections from each winding means to the carriage.

5. In a mill-stone dressing machine, a carriage for the dressing tool, means for propelling the carriage across the mill-stone comprising a friction element carried by the actuating means for the dressing tool, other friction elements, means for bringing the last-named friction elements individually into active relation to the first-named friction elements, and connections between said friction elements and the carriage carrying the dressing tool.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ROBERT C. HELMS.

Witnesses:

G. W. LESLIE,
W. A. BROWN.