

UNITED STATES PATENT OFFICE.

MARTIN SHIRK, OF LANCASTER COUNTY, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND S. B. HARTMAN AND WENDEL MARTZALL, OF SAME PLACE.

MACHINE FOR DRESSING MILLSTONES.

Specification of Letters Patent No. 29,345, dated July 24, 1860,

To all whom it may concern:

Be it known that I, MARTIN SHIRK, of the county of Lancaster and State of Pennsylvania, have invented new and useful Improvements on Machines for Dressing or Redressing Millstones; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is an isometrical view of the machine mounted with all its parts in place. Fig. 2 shows the two screw shafts, with the feeding burs, lever and pinions detached. Fig. 3 shows the pick C, socket B, and set-screw G, with parts of the double pick shaft A inverted.

The construction and operation may be more fully set forth as follows: Mounted on any suitable framework, either of cast iron or wood, are two horizontal screw shafts N^1 and N^2 . These have a uniform thread cut on them, of the desired length, and have their bearings in side plates, Q^1 and Q^2 attached to the uprights of the frame (inside). These shafts are placed vertically over and parallel to each other, each being provided with a pinion on the one end, marked 5 and 7, Fig. 2, with an intermediate pinion of like size 6, geared into them, so that both the screw shafts revolve in the same direction. To each shaft there is a nut D^1 and D^2 , with a female screw. The front and rear edges of these nuts, project, for the reception of the vertical, double, pick-shaft, united above, where it has a screw F, to regulate the length of stroke. This screw has a thickened blunt end or ring, which comes in contact with the plate P, on the top cross piece Y, (when made of wood,) and checks the blow of the pick, at the desired point. Beneath the union of the lower end of the pick-shaft there is a socket B, with a set-screw G for holding the pick C, as shown. There is also a cross piece X in the frame between the two faces of the pick-shaft. Thus by the screw nuts and cross pieces, the pick shaft is kept in a rigidly vertical position in its up and down motion, which is operated by the cam rods J^1 , J^2 , and J^3 (or more), coming in contact with the nose or peg E, on the pick-shaft, A and forced down by the spring S, alternately. These cam-rods are the length of the screw

shafts, and are held by pulleys I^1 and I^2 at each end; these pulleys are supported on a shaft K, in front of and parallel with the screw-shaft. The cam shaft K has its bearings in the brackets H, provided with a handled fly- or balance wheel O, at one end and a pinion 1, on its other end. This pinion meshes into pinions 4, 2, and that with 3, which last (three) named pinions have their bearings on the elbowed lever T, through which the shaft K, passes as its fulcrum. This elbowed lever is provided with a handle L, having two or more holes for a bolt V, to keep the same in place, between the two-armed support, M, on the top of the frame, which is provided with two or more holes to hold and to reverse the motion.

Fig. 2, shows the position of the lever when the upper side pinion 4, meshes into the pinion 5, on the upper screw shaft N^1 , which runs the burs D^1 and D^2 in the direction of the arrow point, when the pick-shaft is in place, and operated by the cam spring, and pinion 1, carrying the pick forward by every turn, in a direct line, giving three or more strokes in each revolution with any amount of force desired; by withdrawing the bolt V, and pulling the handle forward, the upper pinion 4 will be withdrawn from 5, and the lower pinion 3 on the elbowed lever will mesh into pinion 7, on the screw shaft N^2 , and thus give a reverse motion and carry the pick-shaft back. So vice versa, by introducing an intermediate hole into the support M, both pinions 4 and 3 may be detached, and a stationary up and down motion alone given to the pick-shaft. Thus the tool C, by the action of the cam and pinions on the screws, will be made to travel over the surface of the stone, in any desired direction, with perfect accuracy and ease, by turning with the handle to the wheel O, and properly adjusting the machine to the stone to be dressed, the cam rods acting uniformly at all points. Also, a reverse motion is instantly given by the levered pinions 3, 4, making this an efficient and highly desirable machine for the tedious and laborious process of dressing mill-stones of various sizes and patterns, by providing the requisite picks to the socket, B, on the shaft A, with its accompanying spring S, attached.

I am aware that single screws, with a ratchet wheel and pawl have been used, as also with adjustable platforms &c. for the

purpose of dressing mill-stones, but I am not aware of any machine substantially the same in its operation, nor do I consider the two screws a mere duplication, for by them, 5 the pick shaft has a more steady motion and is held in a rigid vertical position, as it traverses the stone, actuated by the long cam at all points of its course and successively forced down by the spring as shown.

10 What I claim as my invention and desire to secure by Letters Patent is—
The open pick-shaft A, with its socket B,

adjusting screw F, peg E, and spring S, in combination with the shouldered screw burs D' and D² on the screw shafts N' and N² 15 and their pinions 5 and 7, operated by means of the pinion 1, on the cam shaft, and pinions 2, 3 and 4 on the elbowed shifting lever T, substantially as and for the purpose specified.

MARTIN SHIRK.

Witnesses:

S. G. MUSSER,
JACOB STAUFFER.