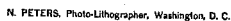


Z. J. DRAKE.
MILLSTONE PICK.

Patented Oct. 16, 1888.



UNITED STATES PATENT OFFICE.

ZACHARIAH J. DRAKE, OF DRAKE, SOUTH CAROLINA, ASSIGNOR OF ONE-THIRD TO JAMES LANE NAPIER, OF SAME PLACE.

MILLSTONE-PICK.

SPECIFICATION forming part of Letters Patent No. 391,128, dated October 16, 1888.

Application filed February 18, 1888. Serial No. 264,513. (No model.)

To all whom it may concern:

Be it known that I, ZACHARIAH J. DRAKE, a citizen of the United States, residing at Drake, in the county of Marlborough and State of South Carolina, have invented certain new and useful Improvements in Millstone-Picks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to machines for furrowing millstone-faces; and it consists in the construction and novel combination of parts, as hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a machine embodying my improvements, and Fig. 2 is a plan view with the top plate removed. Fig. 3 is a perspective view showing the peculiar construction of the pick on the lower end of the hammer-shaft, the upper part of which is broken off. Fig. 4 is a top view in detail of the main frame, showing the thumb or tension screw and also the stop or crank arm, the latter being indicated in full lines free from the hammer-shaft and in dotted lines adjusted in the notch p^x thereof when this shaft, with its picks, is raised out of operation. Fig. 5 is a sectional detail showing the stop or crank-arm holding the hammer-shaft out of operation.

Referring by letter to the accompanying drawings, A designates the frame of the machine, which is provided with the slotted or recessed base B, on which is mounted friction-wheels C, loosely applied to an axle, S, let into the base and supported in suitable bearings.

F is a shaft mounted in bearings G and provided with a friction-wheel, H, and a band-wheel, I. (Shown by dotted lines on Fig. 1.) These permit the ready and convenient movement of the furrowing-machine over the face of the millstone while the dressing-hammer, hereinafter described, is in use.

The main frame is provided with parallel

bars K L, which form the supports for the two driving-gears M N employed in this construction.

The main driving-gear M is mounted on and keyed to the shaft P, which is provided with a hand-crank, Q, and engages the pinion or smaller gear-wheel, N, on the shaft S, supported also in bearings on the bars K L. One end of the shaft S is provided with a two-throw cam, T', which is adapted to engage with a toe, T, and operate the hammer U, which works in guides W W', and is provided with a stud, X, which is engaged by a controlling-spring, Y.

The tension of the spring Y is regulated by a thumb-screw, Z, on the cap-plate of the frame.

A stop or crank arm, a , is pivoted to the cap-plate of the frame, and is adapted to be adjusted into a notch, p^x , in the hammer-shaft, for the purpose of holding this shaft and its picks elevated out of operation. The hammer c is composed of chisels or leaves bolted together within a hammer-head, d , said leaves being reversible and being rendered so by being secured in place by bolts e and f .

The cam on the lifting-shaft is what may be termed a "double cam," as each end of it operates the hammer, so that one revolution of the hammer-shaft causes two strokes of the hammer to be made.

The machine is manipulated by moving it over the surface to be furrowed or dressed, and the judgment of the manipulator is to be brought into exercise to do the work properly.

By reference to Figs. 1 and 2 it will be seen that the pick or hammer-head d is composed, essentially, of the lower part of the shaft b , a right-angular extension or rigid arm, b' , thereof, the clamp-plate d' , the gang of reversible chisels or leaves e' , and the reversible chisel or leaf e^2 , the chisels being firmly clamped and held by the two bolts e f , above described.

It will be observed that chisel or leaf e^2 is in a vertical plane at right angles to the gang of chisels e' , and that this chisel e^2 affords a perfect lock for the nut f' on the bolt f .

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

1. The within-described millstone-pick,

comprising a portable frame provided with driving and supporting wheels and a handle, the driving gear-wheels, the hand-crank, a vertically-reciprocating notched rod, *b*, actuated by a cam and a spring and bearing pick-
5 ing-chisels, an adjustable tension-screw, and a stop or crank arm, all substantially as set forth.

2. In a portable mill-pick having a recip-
10 rocating rod, *b*, actuated as described, the combination of the rigid arm *b'*, the clamp-plate

d', the gang of leaves or chisels *e'*, the independent chisel *e'*, the bolts *f e*, and the nut *f'*, locked by the chisel *e'*, substantially as described.

In testimony whereof I affix my signature in
presence of two witnesses.

ZACHARIAH J. DRAKE.

Witnesses:

M. T. ELLERBE,
B. A. ROGERS.