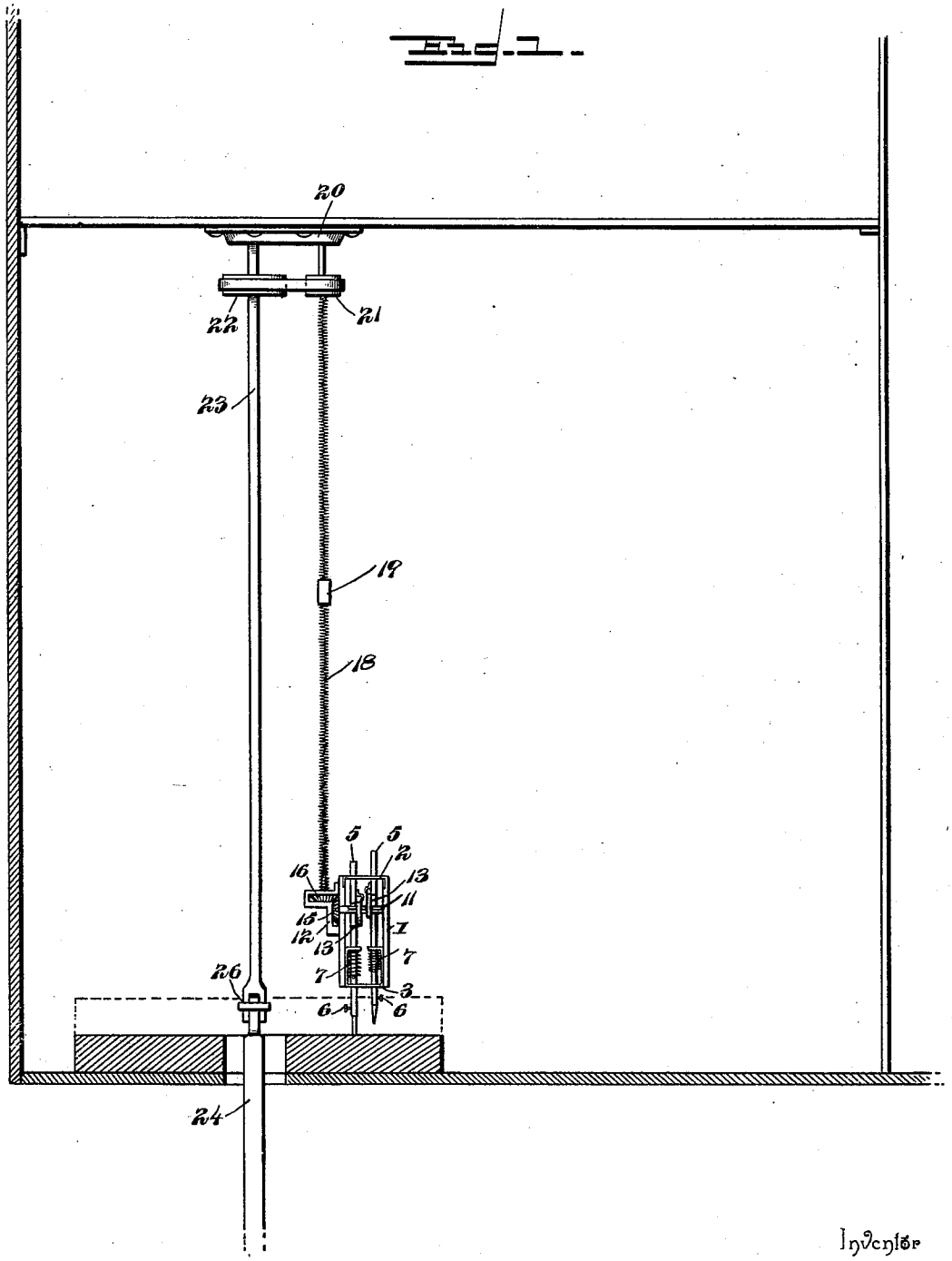
(No Model.) 2 Sheets—Sheet 1.

F. N. SILVEY.

MILLSTONE PICK.

No. 562,044. Patented June 16, 1896.



Inventor

Faines N. Silvey

Witnesses

E. K. Stewart

R. M. Smith

By his Attorneys.

C. A. Snow & Co.

(No Model.)

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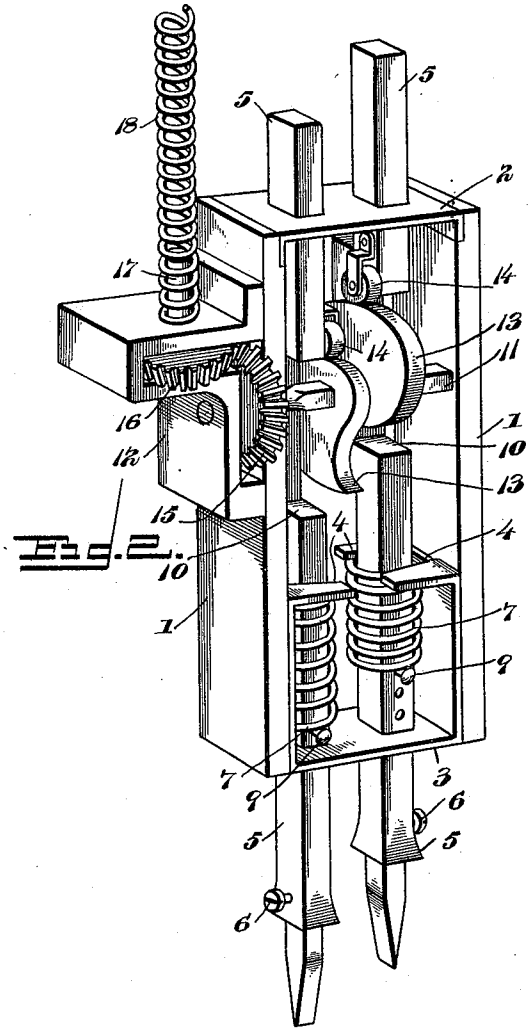

Fig. 2.

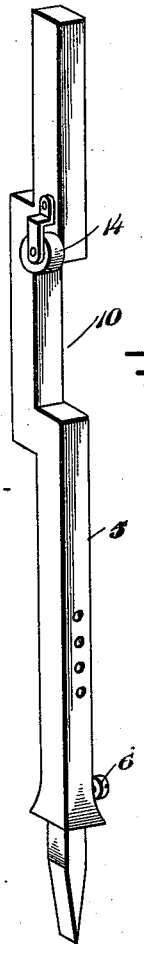

Fig. 3.

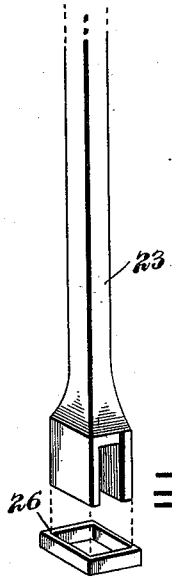

Fig. 4.

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UNITED STATES PATENT OFFICE.

FAINES N. SILVEY, OF CLARENCE, ALABAMA.

MILLSTONE-PICK.

SPECIFICATION forming part of Letters Patent No. 562,044, dated June 16, 1896.

Application filed July 27, 1895. Serial No. 557,386. (No model.)

To all whom it may concern:

Be it known that I, FAINES N. SILVEY, a citizen of the United States, residing at Clarence, in the county of Blount and State of Alabama, have invented a new and useful Millstone-Pick, of which the following is a specification.

This invention relates to an improvement in devices for dressing millstones, and has for its object to provide a hand-machine of simple, inexpensive, and efficient construction, which is adapted to sharpen, furrow, and dress the runner and bed-stones of grinding-mills.

The primary object of this invention is to utilize the power derived from the main shaft or spindle which drives the millstones and to communicate such power through a flexible shaft to one or more reciprocating dressing-tools mounted within a suitable stock adapted to be manipulated and guided across the surface to be dressed by the hand of the operator.

Other objects and advantages of the invention will appear in the course of the subjoined description.

The invention consists in an improved device for sharpening, furrowing, and dressing millstones, comprising certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of the improved millstone-dressing apparatus complete and constructed in accordance with this invention, showing also the manner of coupling the same to the spindle upon which the millstones are mounted, the runner being removed and the bed-stone being shown in section. Fig. 2 is an enlarged detail perspective view showing the hand device and the manner of mounting and driving the picks or dressing-tools. Fig. 3 is a detail view of one of the picks or dressing-tools. Fig. 4 is an enlarged detail view of the lower end of the shaft which couples to the millstone-spindle.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

Referring to the accompanying drawings, the frame of the improved dressing device comprises a pair of side bars 1, which are spaced a suitable distance apart and connected at their upper ends by means of a cross-bar 2, which may be either formed integrally therewith or made separately and bolted or otherwise secured thereto. The lower ends of said side bars are connected by means of a substantially rectangular frame of metal consisting of side portions disposed in parallel relation to each other and bolted to the inner adjacent faces of the main side bars 1 and a connecting portion or bar formed integrally with and extending across and connecting the lower ends of said side portions, as indicated at 3. The side portions of this rectangular frame have their upper ends bifurcated or forked, as shown at 4, and these forked or bifurcated portions are bent at right angles to the side portions in such manner as to project horizontally inward toward each other, whereby they are adapted to form guides between which the reciprocating picks or dressing-tools operate, and also to form stops or seats for the actuating-springs of said picks or dressing-tools, as will hereinafter appear.

5 designates a pair of picks or dressing-tools, which are employed for sharpening or furrowing the grinding-faces of the runner and bed-stones. These picks are mounted to reciprocate through vertically-alined openings in the upper cross-bar 2 and the lower cross-bar 3, above referred to, and in order to prevent said picks from turning the shanks thereof are preferably made square in cross-section, and the openings in the cross-bars 2 and 3 are correspondingly formed. Each of said picks or dressing-tools has its lower end expanded to form a socket, in which may be fitted a removable point of steel or any suitable material for the purpose, the latter being held in place by means of a set-screw 6. Thus provision is made for the easy removal of the points of the picks or dressing-tools whenever the same become too far worn to be of further use, and the substitution of new points.

7 indicates a pair of spiral springs, one of which is disposed around the shank of each pick or dressing-tool and arranged with its upper extremity bearing beneath the forked or bifurcated horizontal portion 4 of the rectangular frame, above referred to, the lower end of said spring being engaged by a pin or

equivalent device 9, engaging one of a series of perforations in the shank of said pick or dressing-tool. By means of this construction the tension of the spring 7 may be regulated for imparting the desired force to the downward thrust or blow thereof in a manner that will be readily understood.

The shanks of the picks or dressing-tools are offset, as shown at 10, to dodge a transverse shaft 11, which is mounted in bearings in the main side bars 1 of the device, and also in a laterally-disposed housing 12, secured to the outer face of one of said side bars. Sufficient space is left between the reciprocating picks to admit of the mounting of a pair of cams 13 upon the transverse shaft 11 between said picks. These cams are preferably disposed upon said shaft in opposite relation to each other and operate against a pair of anti-friction-rollers 14, journaled upon the inner adjacent faces of said picks, and constituting tappets, by means of which the picks are alternately reciprocated when the transverse shaft 11 is rotated. At one end of said shaft 11 the latter is provided with a bevel gear-wheel 15, disposed between the housing 12, referred to, and the adjacent side bar of the frame, and said gear meshes with and is driven by a smaller similar gear 16, secured to a short section of shaft 17, arranged at right angles to the shaft 11, and journaled in the upper portion of the housing 12. The opposite or outer end of the shaft 17 has connected to it rigidly one end of a flexible shaft 18, which is preferably formed from coiled wire, as shown, and also preferably formed in two sections connected together by means of a suitable coupling-piece 19. The upper end of the flexible shaft is mounted in bearings in a suitable bracket 20, secured to a rafter or overhead support arranged above the millstones, and has adjacent to such bracket a fixed pulley 21, from which a driving-belt extends around a similar pulley 22, secured upon and adjacent to the upper end of a vertical shaft 23, mounted at its upper end in a bearing in the same bracket as the upper end of the flexible shaft. The lower end of the vertical shaft 23 is expanded and squared and bifurcated, as shown, adapting it to embrace the squared upper extremity of the vertical spindle 24, upon which the runner is mounted to revolve. A square collar or sleeve 26 surrounds the lower bifurcated end of the vertical shaft 23 and is capable of being moved downwardly to embrace and engage the upper end of the spindle of the millstone for preventing disengagement between said spindle and said vertical shaft.

In operation the runner-stone is first removed by means of the usual crane and the vertical shaft then coupled to the spindle in the lower or bed stone of the mill. The power that was used to drive the runner is thus utilized for imparting motion to the improved dressing device hereinabove described. By the aid of the flexible shaft described the sharpening and dressing device is adapted to be moved across the faces of the runner and bed-stone, the operator being enabled to guide the same in such manner as to cause the picks or dressing-tools to deepen the furrows and to sharpen the leading and trailing edges thereof, in a manner well understood by those familiar with the art to which this invention appertains.

The device described is very simple in construction, will be found very useful and efficient in practice, will effect a saving in time, and protect the eyes and hands of the operator from the flying fragments of stone—a difficulty with which men have had to contend heretofore—and the device may be folded up out of the way when not in use.

Various changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. The herein-described millstone-dressing implement adapted to be moved by hand across the surface to be operated upon, the same comprising an open frame consisting of two side bars connected at their upper ends by a cross-bar and at their lower ends by a substantially rectangular frame having inwardly-projecting horizontally-disposed bifurcated ends, one or more picks or dressing-tools having rectangular shanks and mounted to reciprocate through correspondingly-shaped openings in the upper and lower bars of said frame and between the bifurcated inwardly-projecting ends of said rectangular frame, spiral springs disposed around the shanks of said picks and arranged between said bifurcated ends and pins carried by said picks, a transverse rotary shaft mounted in the frame of the device and provided with cams which coöperate with tappets on said picks for reciprocating the latter and means for driving said shaft, substantially as and for the purpose described.

2. The herein-described implement for dressing millstones, comprising a suitable frame, one or more reciprocating picks or dressing-tools mounted therein and having offset portions intermediate their ends, springs for giving said picks a normal tendency, a rotary cam-shaft also mounted within said frame and in the plane in which the picks move and coöperating with tappets on said picks for driving the latter, a flexible shaft for communicating motion to said cam-shaft, and a coupling-shaft having its end formed to engage with the vertical spindle of the millstone and connected with or geared to said flexible shaft, substantially in the manner and for the purpose set forth.

3. In a device for dressing millstones, the combination with a suitable frame adapted to be moved by hand across the surface to be

operated upon, of one or more reciprocating picks or dressing-tools slidingly mounted within said frame and formed with a longitudinal series of perforations, spiral springs disposed around the shanks of said picks within the frame, removable and adjustable pins adapted to enter said perforations and bear against the springs for regulating the tension thereof, tappets upon said picks, a rotary shaft having cams mounted thereon and coöperating with said tappets for reciprocating the picks, and means interposed between said shaft and the spindle of the millstone for driving said cam-shaft, substantially as described.

4. In a device for dressing millstones, the combination with a suitable frame adapted to be supported by hand above and moved across the surface to be operated upon, of one or more reciprocating picks or dressing-tools, a rotary shaft for communicating motion to said reciprocating picks, a flexible shaft interposed between said first-named shaft and the spindle upon which the millstones are mounted and a coupling-shaft having its extremity bifurcated to be moved laterally into engagement with said spindle and having a slide-collar thereon for preserving the engagement between said shaft and spindle, substantially as specified.

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

FAINES N. SILVEY.

Witnesses:
H. J. LEWIS,
J. T. HUGHES.