(No Model.)

J. MILLER.

MILLSTONE DRESSING MACHINE.

No. 300,103. Patented June 10, 1884.

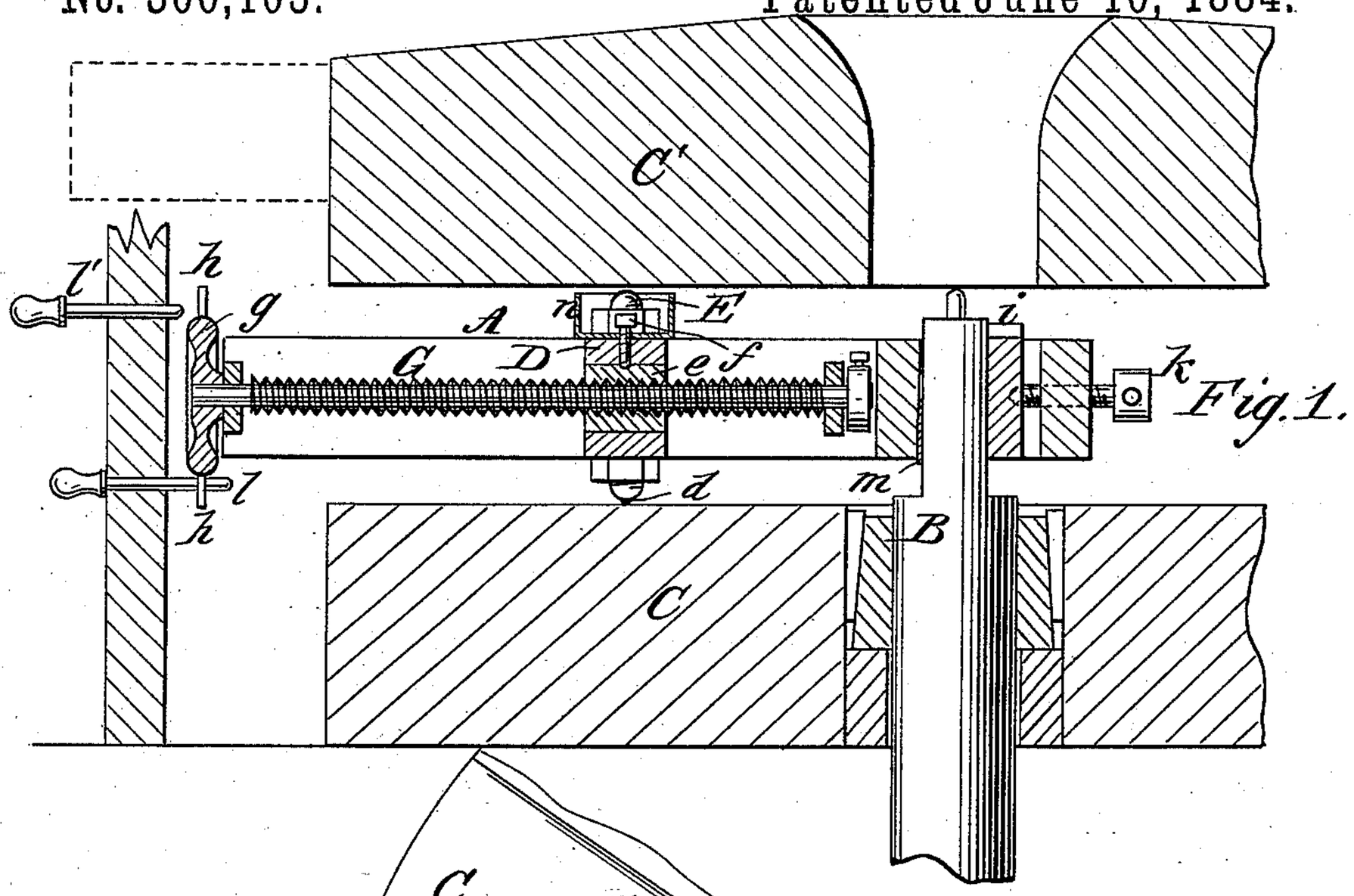


Fig. 1.

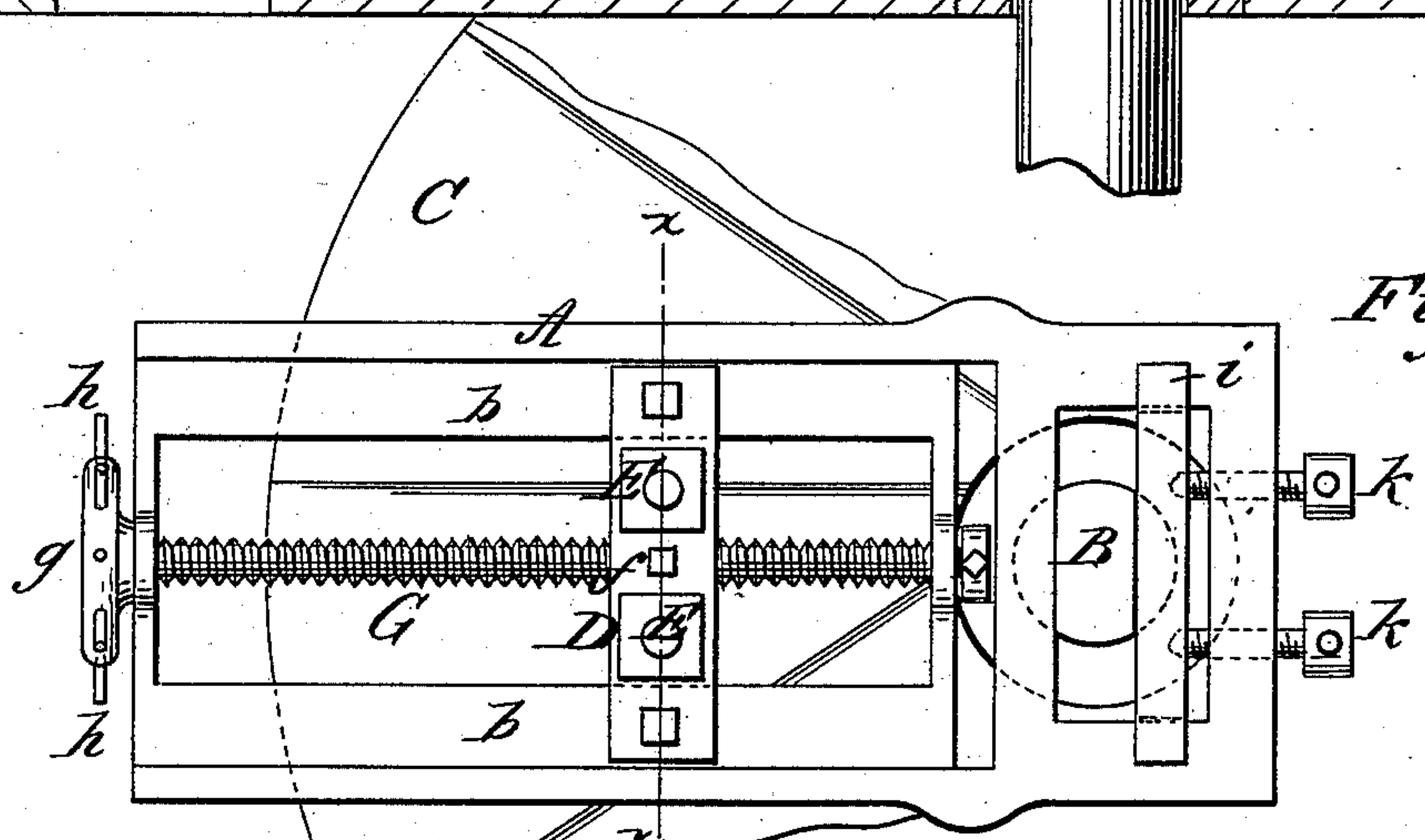


Fig. 2.

Fig. 5.

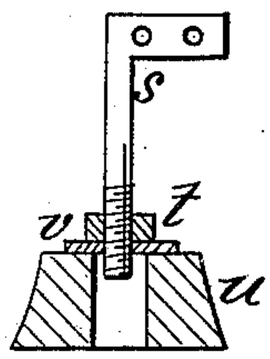


Fig. 4.

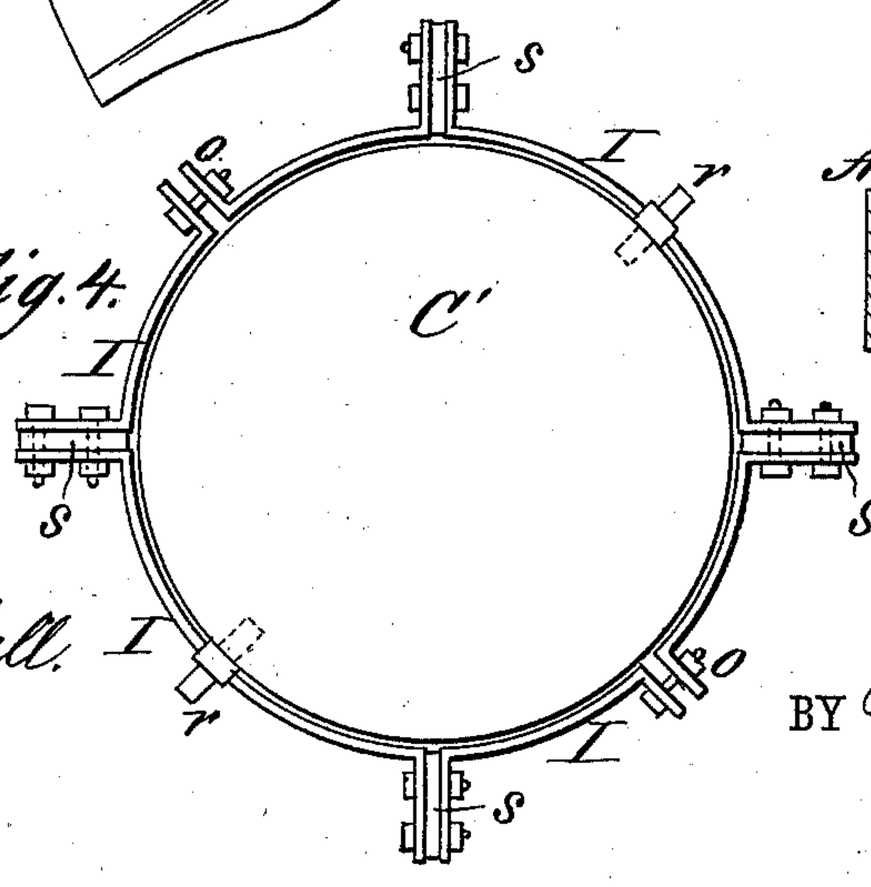
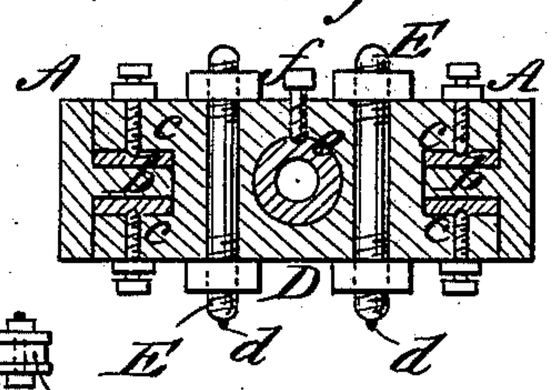


Fig. 3.



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JOHN MILLER, OF MILTON, OREGON.

MILLSTONE-DRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 300,103, dated June 10, 1884.

Application filed August 30, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN MILLER, of Milton, in the county of Umatilla and State of Oregon, have invented a new and useful Improvement in Millstone-Dressing Machines, of which the following is a full, clear, and exact description.

This invention consists in a rotary self-feeding apparatus or device, substantially as hereinafter described, for facing and dressing millstones, and in which diamonds are used as the cutters, said apparatus dispensing with "proof" and "penstaff" and other devices heretofore used for the purpose, and dressing a burr or other millstone perfectly true, besides saving much labor. Millstones dressed by my improved apparatus will produce a better article of flour and give an increased percentage.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a vertical section of a pair of millstones in part with my improved dressing apparatus, also shown in section, applied. Fig. 2 is a plan view of the apparatus as applied to the bed-stone of a mill, shown only in part. Fig. 3 is a transverse section of the apparatus on the line *x x* in Fig. 2. Fig. 4 is a plan upon a reduced scale of an upper millstone, with a frame applied thereto for holding said stone, when using my improved dresser; and Fig. 5 is a sectional elevation of a block with adjustable leg for carrying and raising or lowering said stone-holding frame.

Referring in the first instance more particularly to Figs. 1, 2, and 3 of the drawings, A is the bed plate or piece of the apparatus, arranged to occupy a radial position relatively to the mill-spindle B in the bed-stone C, and above said stone.

D is a tool-carriage fitted to have a sliding motion along the bed-plate A upon ways *b b*, and provided with adjustable bearing blocks or gibbs *c c* for travel of the carriage upon said ways. This carriage is constructed with one or more vertical holes through it for reception of a corresponding number of tools, E, through it. The ends of these tools which project above and below the carriage D are each constructed to receive within them and to hold a diamond, *d*, which forms the facing or dressing cutter. Provision is made for fitting both ends of each tool with a diamond, in order that both burrs C C′ may be turned off or dressed at one and the same time, if desired; but it is preferred to dress only one stone at a time, and in the drawings a diamond is shown as applied to only one end of each tool.

G is a screw arranged in longitudinal and central relation with the bed-plate A, and fitted to pass through a brass or other screw-box, *e*, in the carriage D, and having end bearings in the bed-plate, which restrain it from longitudinal movement. The object of this screw is to move the carriage D toward and from the spindle B, or, in other words, to move the diamond-pointed tool or tools backward and forward across the face of the stone. The screw-box *e* may be held to its place in the carriage by a set-screw, *f*, whereby provision is made for removing it and substituting another box having a coarser or finer thread to work in conjunction with a correspondingly-threaded carriage-operating screw to vary the amount of feed across the face of the stone at each adjustment of said screw. The outer end of this screw G is fitted with a hand-wheel, *g*, having radial pins *h* projecting from it. The bed plate or piece A is secured on the spindle B by a follower, *i*, and screws *k k*, so as to rotate with said spindle over the face of the stone C, and so that at each revolution thereof one of the radial pins *h* will come in contact with one or other of two adjustable stops, *l l′*, in a post, H, and arranged above and below the course traveled by the hand-wheel in its rotation with the bed-plate A.

In order to turn off or true the face of a burr—say the bed-stone C—I first level and suitably secure the stone and fasten the bed-piece A with its attachments, as described, on the spindle B. I then remove the diamond-pointed tool or tools E from the carriage D, and insert in place thereof a common quill and tram the spindle B. After tramming, the quill is removed and replaced by the tool or tools E, and the same set sufficiently low to cause the diamond *d* to just touch the stone. The apparatus is now ready for work, and the spindle B, with the bed-piece A and its attachment, set in motion and made to rotate at a velocity

of thirty revolutions per minute, more or less. At each of such revolutions one of the series of pins or projections *h* on the wheel *g* is caused to strike the lower stop, *l*, in the post H and turn the screw G, so as to move the tool-carriage toward the spindle B. After the carriage in course of time has thus been intermittently adjusted to its fullest extent inward—that is, in proximity to the spindle B—the tool or tools E are lowered a little, and the lower stop, *l*, shifted or removed from coming into contact with the pins *h* on the wheel *g*, and the upper stop, *l'*, inserted or adjusted so that said pins *h* will come in contact with it during the rotation of the spindle B with its attached portion of the apparatus. This will cause a reverse intermittent motion to be given to the screw G, thereby moving the carriage D outward or away from the spindle B across the face of the stone. Such automatic feed in reverse directions across the face of the stone of the diamond-pointed tool or tools as the same are revolved in common with the spindle B over the surface of the stone may be repeated any number of times until the stone is perfectly true. As, however, it is sometimes desirable, in order to do good work with mill burrs or stones, that they should be slightly dished or concave on their faces, I provide a very simple means for dressing them off more in their centers than on the outsides. Thus, to give the lower stone, C, a concave dress, I insert a thin strip of metal, *m*, within the lower portion of the bed plate or piece A, and between it and the spindle B on the one side of the spindle, the same acting as a wedge to slightly tip or tilt the bed-plate A in the required direction to give the required concave dress. If it should be necessary to dress the stone higher in the center, then the strip *m* is inserted within the upper instead of the lower part of the bed-plate A.

Arranged around the upper end of the tool E is a cup, *n*, held in place by the nut of the tool, and serving to catch the cuttings or dust from the upper stone.

To face and dress the upper stone, C', I propose to hold it above the bed-stone C in a frame. (See Figs. 4 and 5.) This frame is composed, in part, of a series of metal ring-sections, I I, clamped together, as at *o o*, to hold the stone within them, and is provided with pins *r r*, which are inserted in the stone. Said frame is carried by a series of legs, *s s*, secured at their upper ends within radial flanges on the sections of the ring-frame, and made adjustable to raise or lower the stone by turning a nut, *t*, fitting a lower screw-threaded portion of each leg. These legs *s s* are each carried by a hollow wooden block, *u*, that rests upon the base of the main frame, or any other suitable base, and which has a washer, *v*, on its top, through which the adjustable leg passes, and on which the nut *t* rests. By simply removing the bolts of the clamps *o o* the frame is taken apart in two sections.

I am aware that, broadly, it is old to employ a carriage carrying the dressing-tool and operated by a handled screw, said carriage traveling upon a track with one end adjusted around the mill-spindle, and that, broadly, it is old to effect the automatic shifting of the movement of the said carriage by the action of stop-pins.

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

1. In a millstone-dresser, the combination, with the frame A, having the inwardly-projecting central ways, *b*, of the screw G, bearing in the frame A, and provided with a lever-wheel, *g*, the carriage D, having slots in its ends to receive the ways *b*, and the tools E, with cups *n*, secured by their nuts upon their upper ends, and the stops *l l'*, substantially as and for the purpose set forth.

2. In a millstone-dressing apparatus, the frame for holding the upper stone, consisting of a series of connected ring-sections, I I, forming an annular clamp, pins *r r*, for supporting the stone, and adjustable legs *s s*, for raising and lowering it, essentially as described.

JOHN MILLER.

Witnesses:
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