

G. S. Young,

Mill Spindle.

No. 119,814.

Patented Jan. 3. 1871.

Fig. 1.

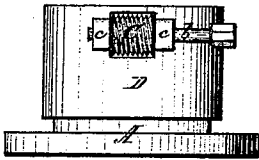


Fig. 2.

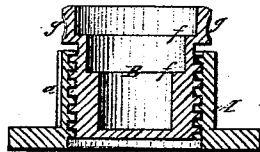


Fig. 3.

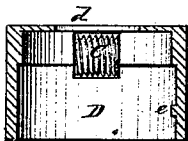
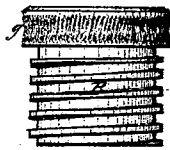


Fig. 4.



Witnesses.

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# United States Patent Office.

GEORGE S. YOUNG, OF CLEARFIELD, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND AL. FITCH BOYNTON, OF SAME PLACE.

Letters Patent No. 110,814, dated January 3, 1871.

## IMPROVEMENT IN MILL-SPINDLE STEPS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, GEORGE S. YOUNG, of the town and county of Clearfield, in the State of Pennsylvania, have invented certain new and useful Improvements in "Mill-Spindle Steps;" and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing through letters of reference marked thereon, and in which—

Figure 1 represents a side elevation of a spindle-step constructed according to my invention.

Figure 2 is a central vertical section of the same with the cap removed.

Figure 3 is a similar section of the detached cap.

Figure 4 is a side elevation of the adjusting-screw.

The same letters indicate like parts in all the figures.

The ordinary method of supporting a mill-spindle is by a step seated on a beam extending from side to side of the frame-work, and made adjustable by wedges or set-screws at one or both ends.

The objections to such construction are, first, that in elevating the step to compensate for wear, and to adjust the runner to a proper distance from the bed-stone to grind fine or coarse, the step is very liable to be tipped to one side, causing it to wind upon the toe of the shaft and wear unevenly; secondly, that the running stone always has a tendency to one side owing to the lateral action of its driving-gear, thereby cutting the cavity in the step, in course of time, to an oval form, which causes the bed-stone and runner to grind finer on one side than on the opposite.

To remedy these difficulties is the object of my invention, which consists in the construction of a step that may be connected rigidly to a stationary portion of the mill-frame and be adjustable vertically without destroying its perpendicular position, and in such manner that in the adjustment of the step vertically it is caused to rotate and present a fresh bearing portion of its interior to the side of the toe in the direction of its lateral tendency; also, in combining with such adjustable step a cap or case, to exclude the dust from the interior portions.

Referring to the drawing—

A represents the portion of my step, which is rigidly attached to the lower beam of the mill-frame. This portion represents a flanged socket having a female screw-thread on its interior, and one or more vertical grooves, *a*, on its outer periphery.

Within this socket is fitted, by a corresponding male screw, the adjustable step B, the interior of which may be a cylindrical cavity from top to bottom, or it may have one or more shoulders, *f*, enlarging it upwardly, as represented in fig. 2.

The upper end of the step B is enlarged in diameter, and on the periphery of this portion are formed teeth *g*, to gear with the worm-wheel C, by the rotation of which the step is caused to rotate on its own axis, and, at the same time, to rise or fall by means of the screw on its lower portion and on the interior of the socket A.

D represents the cover of the step, which fits closely around the socket A, and in spline gear therewith, by means of its feather *e* and the groove *a*.

This cover has an aperture, *d*, in the top for the passage of the mill-spindle, and lug *c* on the side to carry the spindle *b* of the worm-wheel, which gears through an aperture in the cover with the teeth *g*, on the enlarged collar or upper portion of the step B.

Thus it will be seen that, by rotating the worm-wheel C, the step B will be both rotated and elevated or depressed, as may be, while the cover D will rise or fall with the step; but, being in spline gear with the socket A, will not rotate, thus obtaining the desirable results hereinbefore mentioned.

What is here claimed as new, and desired to be secured by Letters Patent, is—

The combination of the worm-wheel C, carried by the cover D, with the step B and socket A, all constructed and arranged to operate substantially as shown and described.

GEO. S. YOUNG.

Witnesses:

SYDNEY E. SMITH,  
W. MORRIS SMITH.