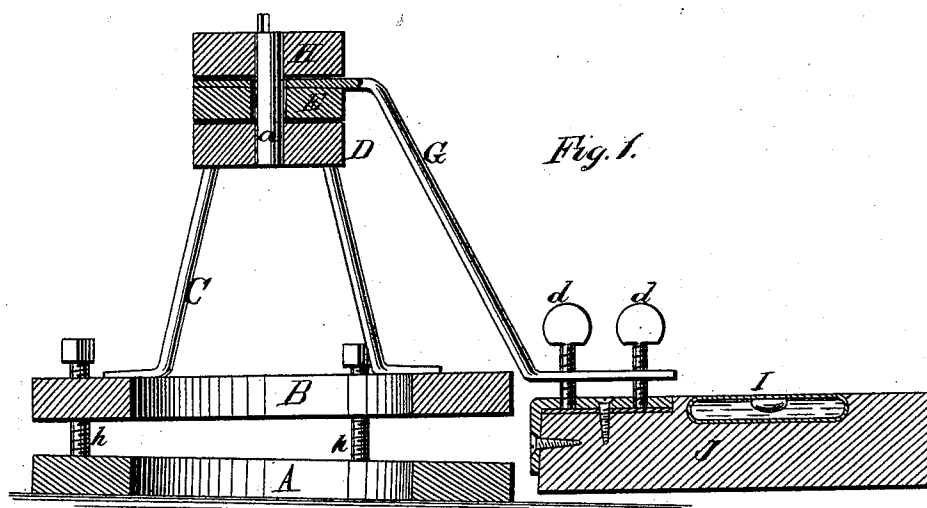


W. DALE & T. EASTELL.

MILL-STAFF.

No. 177,213.

Patented May 9, 1876.



WITNESSES.

Robert Everett,
George E. Upham.

INVENTOR S.

William Dale,
Thomas Eastell,
Gilmore, Smith & Co.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM DALE AND THOMAS EASTELL, OF SOUTH TOLEDO, OHIO.

IMPROVEMENT IN MILL-STAFFS.

Specification forming part of Letters Patent No. **177,213**, dated May 9, 1867; application filed April 1, 1876.

To all whom it may concern:

Be it known that we, WILLIAM DALE and THOMAS EASTELL, of South Toledo, in the county of Lucas and State of Ohio, have invented a new and valuable Improvement in Mill-Staff; and we 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 drawing, making a part of this specification, and to the letters and figures of reference marked thereon.

The figure of the drawing is a representation of a longitudinal vertical sectional view of our mill-staff.

The nature of our invention consists in the construction and arrangement of a mill-staff for truing the face of mill-burs, as will be hereinafter more fully set forth.

In the annexed drawing; A represents the bed ring or foundation of the instrument made of cast-iron planed on the under surface. The body of the instrument is composed of a ring, B, supports C, and elevated center plate D, all cast in one piece, making it perfectly solid. The top plate D is provided with a center pin, *a*, and is to be turned perfectly smooth and level on its upper surface, the pin being also turned in a lathe. Over this pin on the plate D is placed a circle, E, with arm G cast in one piece, the eye of said circle fitting the pin or post *a*, and both top and bottom of the plate or circle turned true. On the upper end of the post *a* is screw-threaded nut or cap H, to hold the circle on the plate D. To the lower end of the arm G is, by set-screws *d d*, attached the staff J, which is made of wood, and kept true by a proof-staff, as are all other staffs. In the top of the staff J is inserted a spirit-level, I. The bed-ring A sits on the eye

of the stone, the machine proper sits on this ring, and by means of set-screws *h*, through the ring B, the staff is raised off the face of the stone. These set-screws also, by aid of the spirit-level I, bring the machine to a perfect level, however untrue the eye of the stone may be. The staff itself is fastened to the revolving arm G by the set-screws *d*, which serve to bring the staff on a perfect level, as indicated by the level I in the body of the staff.

This machine will work on both runner and bed stone, as the table D of the machine is to be high enough to clear the top of the spindle. The machine is simple and easy in operation. When the machine is leveled by a common spirit-level ready for work, and the staff leveled and raised off the stone, it will at once show the high spots on the stone, which, being faced off and again staffing, the stone can soon be brought in perfect face. This staff covers the whole face of the stone in one revolution, and at once shows the face of the stone.

What we claim as new, and desire to secure by Letters Patent, is—

The staff J, having the spirit-level I, and adjustably connected by set-screws *d* with the rotating arm G, in combination with the bed-ring A and frame B C D, substantially as described, and for the purpose set forth.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

WILLIAM DALE.
THOMAS EASTELL.

Witnesses:

P. C. HOLT,
E. W. EASTELL.