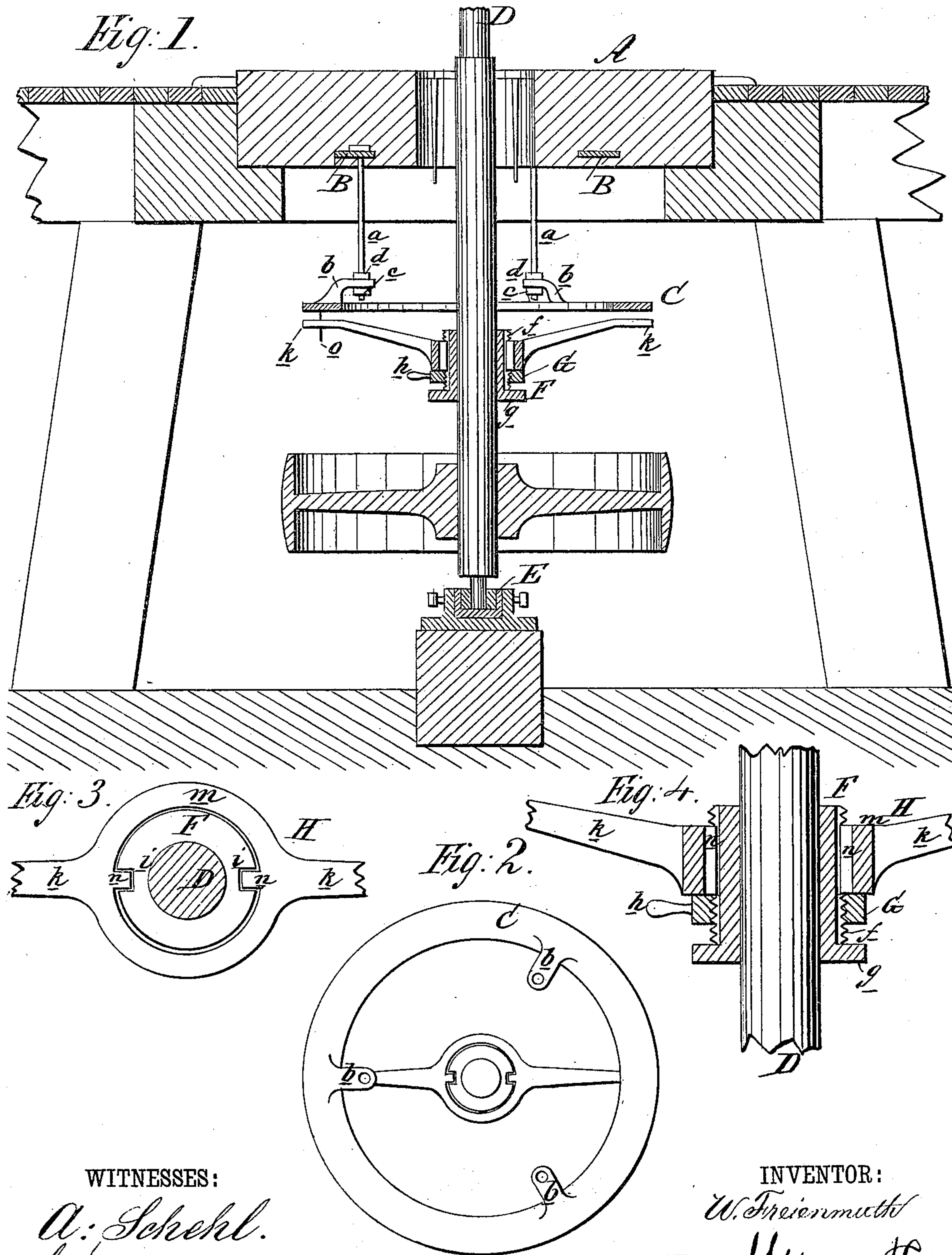


(No Model.)

W. FREIENMUTH.
Millstone and Spindle Adjusting Device.
No. 231,032. Patented Aug. 10, 1880.



WITNESSES:

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WILLIAM FREIENMUTH, OF LAWRENCE, KANSAS.

MILLSTONE AND SPINDLE ADJUSTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 231,032, dated August 10, 1880.

Application filed April 19, 1880. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM FREIENMUTH, of Lawrence, in the county of Douglas and State of Kansas, have invented a new and Improved Device for Adjusting Millstones and Spindles, of which the following is a specification.

The object of this invention is to provide a simple and accurate device that shall enable the miller to detect at any time if his lower stone is out of level or if the spindle is not at right angles with the grinding-surface of the stone, and enable him also to adjust both lower stone and spindle correctly while at work.

The invention consists of a metallic ring securely fastened in the lower side of the lower stone, of a parallel ring connected therewith by bolts and nuts and depending sixteen or eighteen inches, or thereabout, below the under side of the lower stone, of a screw thimble or sleeve attached to the millstone-spindle a short distance below the lower ring, and of a two-armed horizontal tram-wheel connected with the sleeve above mentioned, all of which is hereinafter fully described.

Figure 1 is a vertical sectional elevation of lower millstone and spindle in position with my improved device attached. Fig. 2 is a plan of the parallel ring. Fig. 3 is an enlarged sectional elevation, showing parts of the device. Fig. 4 is an enlarged plan of the central section of the tram-wheel.

Similar letters of reference indicate corresponding parts.

In the drawings, B represents an iron ring embedded and fastened in the lower side of the lower millstone, A. A ring, C, of the same metal, is connected with this ring B by means of the three bolts *a a*, that pass through the lugs *b b* of said ring C. The length of these bolts *a a* depends upon certain conditions, but in most cases a length of sixteen to eighteen inches will answer best, and they are provided with the adjusting and jam nuts *c d*, respectively.

The diameter of the ring B is dependent upon the diameter of the stone A, and should be about eighteen inches less. The same is the case with the ring C, which, however, should

always be as large as possible. The two faces of the ring C are to be perfectly parallel with each other and perfect planes.

D is the spindle, supported in the step E. F is a sleeve attached to the spindle D, a short distance below the ring C, and is held thereto, preferably, by means of wedges. This sleeve F is provided with an outer screw-thread, as shown at *f*, and has a shoulder, *g*, at its bottom.

A threaded ring, G, provided with a handle, *h*, surrounds the sleeve F. On the opposite sides of the sleeve F perpendicular wedge-grooves *i* are cut.

The tram-wheel H consists of two opposite arms, *k k*, one of which carries in one end a quill or upward-projecting pin, *o*, that are connected by a ring, *m*, which surrounds the sleeve F, but without touching said sleeve. The length of the arms *k k* corresponds with the diameter of the ring C.

At *n n* are two internal projections on the ring *m*, which projections fit exactly into the grooves *i i* of the sleeve F, so that the said tram-wheel H may move vertically, but have no lateral or transverse movements. The thread of the sleeve F must be right or left, according to the direction in which the spindle D rotates, so that the threaded ring G will move upward with the tram H. If the handle *h* is held and the spindle D revolves, the quill or upward-projecting pin *o* at the end of an arm, *k*, of the tram-wheel H can thus be brought in contact with the under face of the ring C.

In operating this device the stone A is set level in the ordinary manner and the spindle D is adjusted at right angles thereto by means of the ordinary tram; then the lower face of the ring C is set at right angles to the spindle D by adjusting said ring C by means of the three bolts *a a*, so that the point of the quill or pin *o* in the end of the tram-arm H will touch the face of the said ring C evenly all round, and the nuts *c d* of the bolts *a* are then drawn tight to hold the ring C permanently in this position. If from any reason the stone A is out of level the fact can be immediately discovered by placing a common spirit-level on the top of the said ring C.

The tram-wheel H will, it is evident, have

the same movement as the spindle D; and as the quill or pin *o* of said tram H touches the under face of the ring C, which face is parallel with the grinding-face of the stone A, the spindle D may be set mathematically true to the face of said stone while working, any deviation in said spindle D from a right angle with the grinding-face of the stone A being detected by the contact of said pin or quill *o* with the ring C.

Ordinarily, when running millstones the operator knows from the quality of the work when the spindle is out of true, but has no means to correct the difficulty, because he has no access to the face of the bed-stone. In this device, however, the ring C affords, as it were, an artificial face to the said stone, accessible at any time, whereon to operate the tram.

The device is not intended to correct any deflections automatically, but only to serve to indicate such deflections.

As a metallic pin would scratch the face of the ring C and make it irregular, a quill or

soft-wood pin, *o*, is used, a quill being preferred as making a noise on contact.

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

1. The combination, with wheel H, having ring *m*, with projections *n*, of the sleeve F, made fast to spindle D, screw-threaded on the outside, provided with grooves *i*, and having a bottom shoulder, *g*, said sleeve being held by a threaded ring, G, having handle *h*, as and for the purpose described.

2. The combination of the stationary ring C, suspended from the bed-stone, and arranged concentrically about the spindle D, with a movable tram-wheel, H, having arms *k*, on one of which is a vertical pin, *o*, the opposite faces of said ring and arms being horizontal and parallel, as and for the purpose set forth.

WILLIAM FREIENMUTH.

Witnesses:

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