A. STEVENSON & S. WYLDE.
Grinding-Mill.

No. 216,906. Patented June 24, 1879.

Fig. 1.

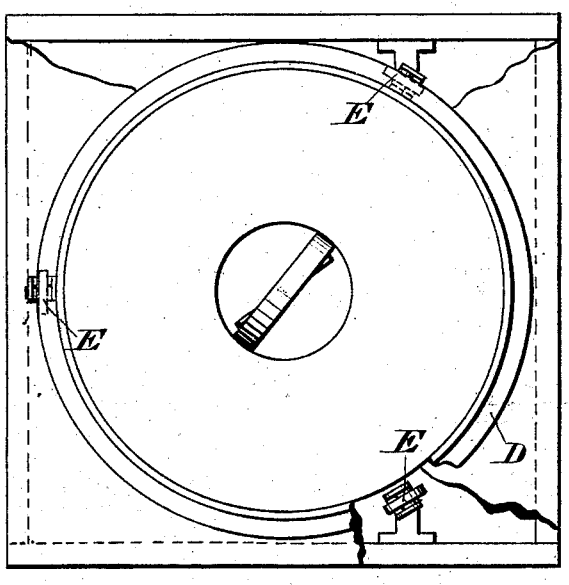
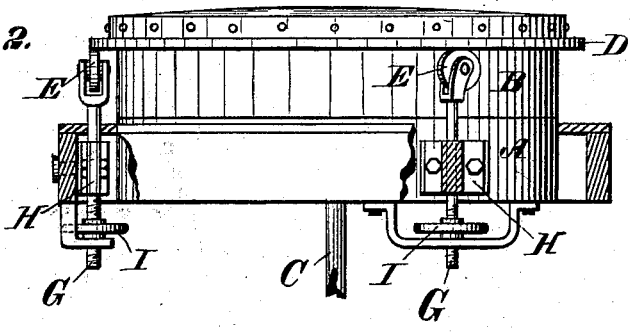


Fig. 2.



Witnesses:
Donn P. Twitchell.
S. M. Maddux.

Inventor:
Anthony Stevenson
Samuel Wylde.
By their attys.
Dodgerson

UNITED STATES PATENT OFFICE.

ANTHONY STEVENSON, OF CHESTER, AND SAMUEL WYLDE, OF RUNCORN, COUNTY OF CHESHIRE, ENGLAND.

IMPROVEMENT IN GRINDING-MILLS.

Specification forming part of Letters Patent No. **216,906**, dated June 24, 1879; application filed March 16, 1878.

To all whom it may concern:

Be it known that we, ANTHONY STEVENSON, of Chester, Cheshire county, and SAMUEL WYLDE, of Runcorn, Cheshire county, England, have invented certain Improvements in Grinding-Mills, of which the following is a specification.

Our invention relates particularly and exclusively to that ordinary form of flour-mill in which the grinding operation is performed by two horizontal stones running one upon the other; and the object of the invention is to maintain at all times a perfect parallelism between the faces of the stones, and prevent the runner-stone from canting, tipping, or touching the face of the bed-stone, as constantly happens in the mills as ordinarily constructed.

With this end in view the invention consists in combining with the runner-stone an annular track or rail and supporting-rollers, arranged to guide the stone accurately, and made adjustable, so that the runner-stone may be raised or lowered, to compensate for wear or change the distance between the stones.

In the drawings, Figure 1 represents a plan view of a grinding-mill provided with our improvement; Fig. 2, a side elevation of the same, with portions of the frame-work broken away in order to expose the guide devices to view.

A and B represent, respectively, the bed and the runner stones of the mill, which may be constructed, arranged, and supported in the ordinary manner, the upper stone being provided with the ordinary supporting-bail and driver, acting in connection with the spindle C, as usual, or driven in any other suitable manner.

D represents the continuous rail or guide surrounding the upper stone, and riveted, bolted, or otherwise secured firmly thereto.

The rail represented in the drawings has an upwardly-extending flange, through which rivets are passed into the ordinary metal band encircling the stone, whereby the rail is secured firmly to the stone. The under face of the rail or guide D is turned mathematically straight and true, and is adjusted so as to be exactly parallel with the under face of the stone.

E E represent three rollers, arranged at equal distances apart under the rail or guide D, to form a support therefor, the rollers being mounted in the upper ends of vertically-threaded bolts G, the lower ends of which are passed through fixed guides H, and provided with end nuts or wheels, I, resting upon the lower guides, as shown, so that by turning the nuts or wheels the rollers may be adjusted vertically with great nicety.

It will be seen that the rollers E, being properly adjusted at an equal height to bear under the rail or guide D, effectually prevent the stone from tipping or turning in the slightest degree.

It will thus be seen that the runner-stone is caused to rotate accurately in a horizontal position, and that a uniform space is maintained at all points between its edge and that of the bed-stone under all circumstances.

If desired, the rollers may be adjusted to sustain the entire weight of the runner-stone, in which case the spindle will merely serve the purpose of rotating the stone; but it is preferred to have the weight of the stone sustained by the spindle, as usual, and to have the rollers adjusted to bear closely, but with a very slight pressure, against the rail or guide.

Instead of the arrangement shown, the rollers may be attached to the stone, and the rail or guide D attached to the adjustable rods or to other suitable supports, as before suggested.

It is manifest that in place of the rollers a continuous rail or other support may be arranged to act in connection with the guide D; that the rollers may be mounted and adjusted by any suitable mechanism other than that shown; also, that the rail or track may be placed upon the top of, instead of around the periphery of, the stone.

By our improvement we are enabled to secure a steady and accurate movement of the

stone under all conditions, and thus to produce a flour of a uniform granulation, whether coarse or fine.

Having thus described our invention, what we claim is—

As an improvement in the ordinary horizontal-disk-action grinding-mills, the combination of an annular track or rail and vertically-adjustable rollers with the runner-stone.

ANTHONY STEVENSON.
SAMUEL WYLDE.

Witnesses:
P. T. DODGE,
SML. BEAN.