

G. & H. O'CONNOR.

Metallic Grinding Rings for Mills.

No. 133,333.

Patented Nov. 26, 1872.

Fig. 1

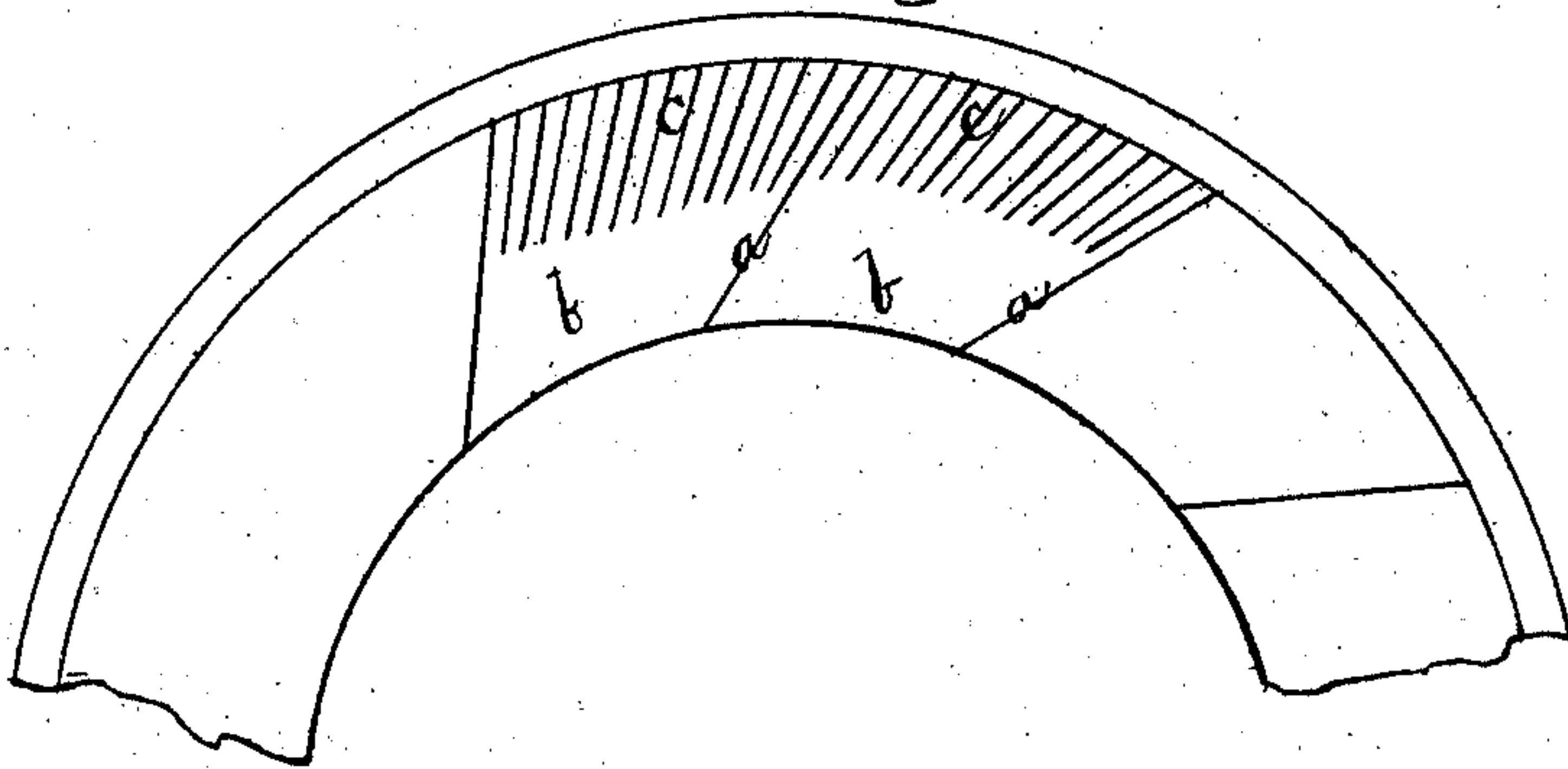


Fig. 2

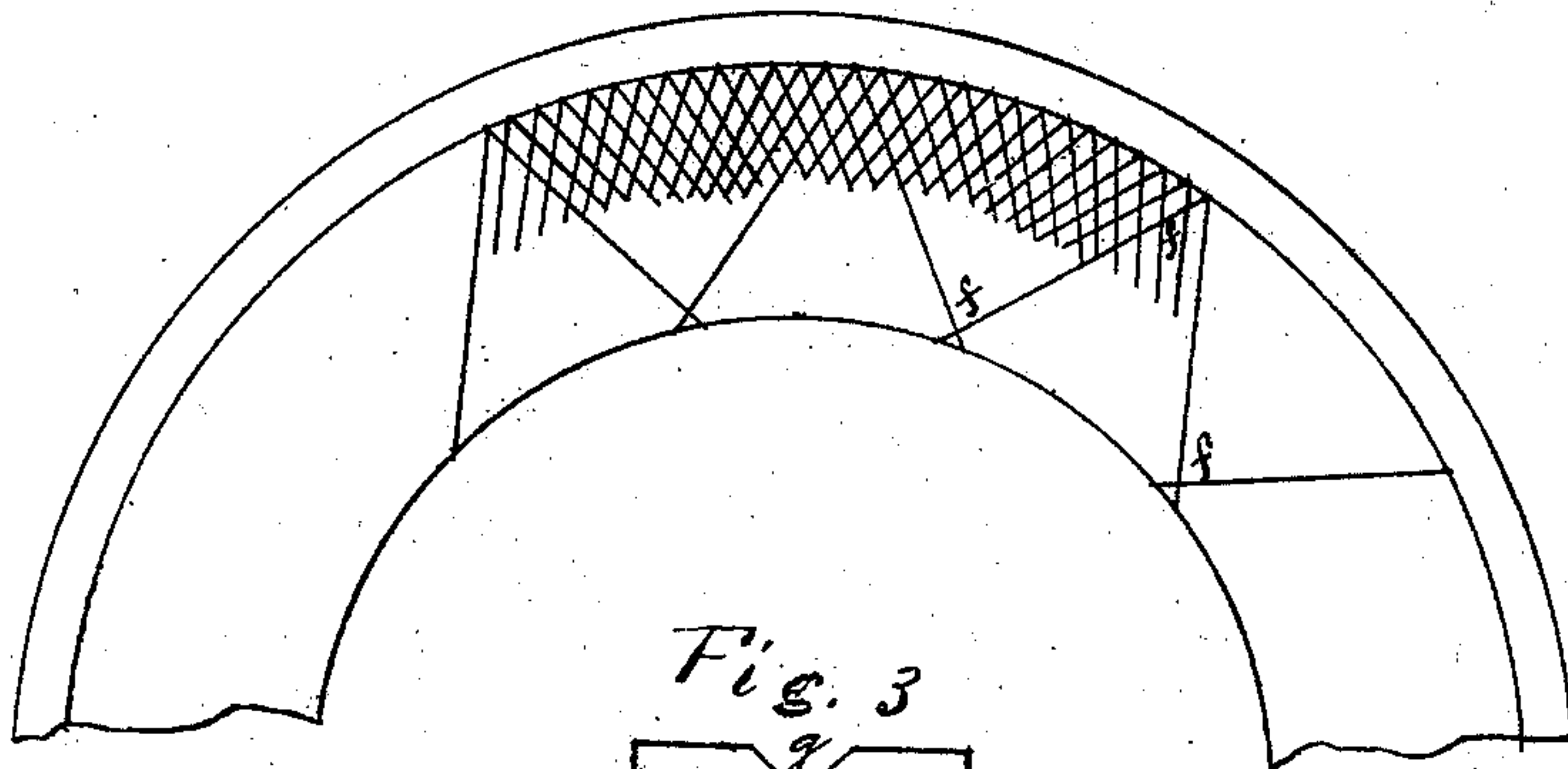
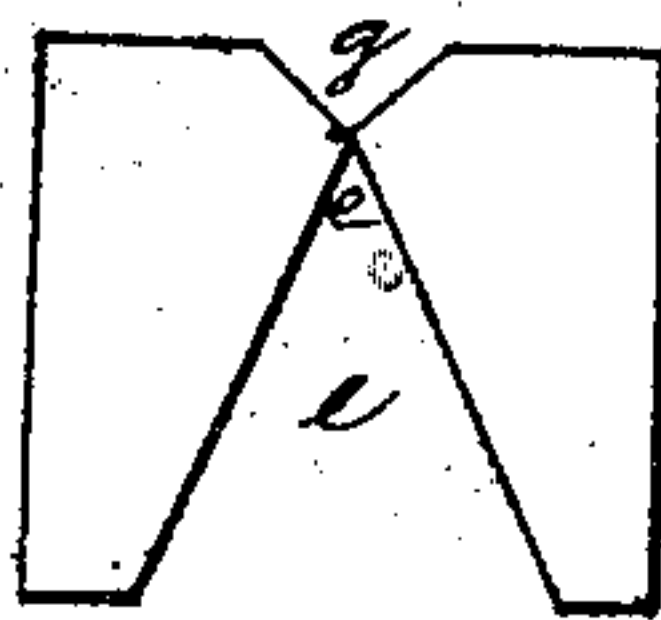


Fig. 3



Witnesses  
H. J. Niles  
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# UNITED STATES PATENT OFFICE.

GEORGE O'CONNOR AND HAINES O'CONNOR, OF MISHAWAKA, INDIANA.

## IMPROVEMENT IN METALLIC GRINDING-RINGS FOR MILLS.

Specification forming part of Letters Patent No. 133,333, dated November 26, 1872.

*To all whom it may concern:*

Be it known that we, GEORGE O'CONNOR and HAINES O'CONNOR, of Mishawaka, in the county of St. Joseph and State of Indiana, have invented certain Improvements in Grinding-Mills, of which the following is a specification:

The nature of our invention consists in the construction, arrangement, and operation of two similar grinding-plates, one stationary and the other revolving upon it.

Figure 1 represents a section of the face of the grinding-plates. Fig. 2 represents the line of action of the ridges and grooves when in operation. Fig. 3 represents a sectional view of the two plates, when placed together for work, cut through the receivers.

The plates are constructed with ridges *a a*, receivers *b b*, and five grooves cut from the periphery down the slant of the receivers, forming the ridges *c c*. The ridges *a a* stand at a sufficient angle to the inner circumference of the plates to take in and throw off the grain and meal by acting across each other, as at *f*, Fig. 2. The fine grooves *c c* start at the periphery and run down the slanting face of the receivers, so that a sectional view obtained by cutting through the receivers when the plates are placed together presents a wedge-shaped opening, as seen at *e*, Fig. 3. The grain is forced outward in the receivers by the action of the ridges *a a* into the wedge-shaped opening *e*, when it soon arrives at a point where it begins to be crushed by the action of the ridges *c c*. The finishing-up or fine grinding is all

done at the point *g*, Fig. 3—the periphery of the plates.

This fine grinding all being done at the extreme outer edge of the plates, instead of being distributed over a considerable portion of the surface of the plates, we find, by experience, enables us to grind with far less consumption of power than has ever been accomplished heretofore.

When the grinding-surface becomes worn smooth it will be only necessary to grind or cut down the stationary ring by grinding off the outside of the ring at an angle until the portion so ground or cut away shall meet that part of the fine dress *c c* not worn, and by grinding down the ridges *a a* to correspond, when the ring will present a grinding-surface as good as new, which process may be renewed until the ring is worn out.

We do not broadly claim in this application a fine dress extending a short distance from the periphery of the plate; but,

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent, is—

A detachable grinding-ring, when provided with the receivers and fine drifts on the incline and the point of surface, all constructed and arranged substantially as and for the purpose herein specified.

GEORGE O'CONNOR.  
HAINES O'CONNOR.

Witnesses:

A. I. PETTIT,  
J. H. WHITSON.