(No Model.)

J. G. MOLE.

METALLIC GRINDING RING.

No. 321,045. Patented June 30, 1885.

Fig. 1.

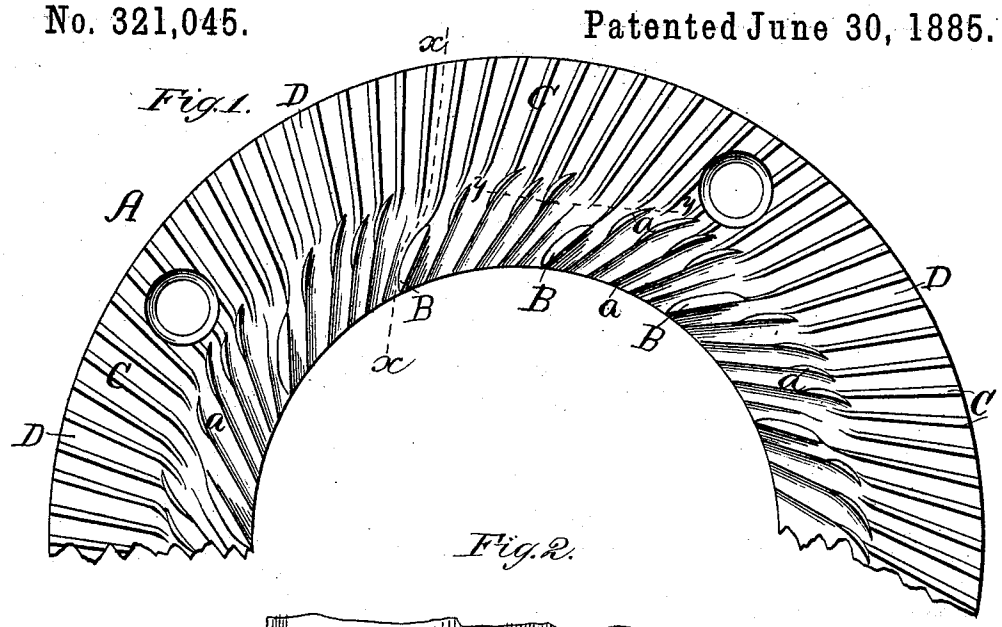


Fig. 2.

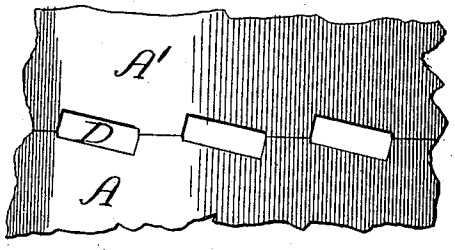


Fig. 3.

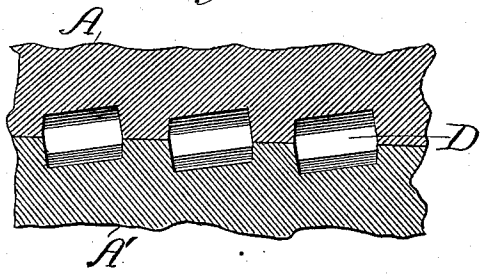
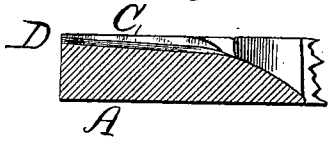


Fig. 4.



Witnesses,
Fran. J. Blanchard
L. M. Freeman.

Inventor.
John G. Mole
By G. B. Coupland & Co.
Attys.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN G. MOLE, OF BATAVIA, ILLINOIS.

METALLIC GRINDING-RING.

SPECIFICATION forming part of Letters Patent No. 321,045, dated June 30, 1885.

Application filed March 3, 1885. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. MOLE, of Batavia, county of Kane, and State of Illinois, have invented certain new and useful Improvements in Metallic Grinding-Rings, of which the following is a full, clear, and exact description, that will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

The object of this invention is to provide a grinding-ring having a peculiar dress, whereby the substance being ground is uniformly fed to the grinding-teeth and gradually reduced to the required degree of fineness as it passes from the eye to the skirt, enabling the work to be done with less power and imparting a much greater capacity to a grinding-mill, as well as preventing clogging and heating.

Figure 1 is a plan or face view of a portion of a ring embodying my improved features. Fig. 2 is an edge view of companion-rings forming a set, showing the furrows between the teeth opposite each other; Fig. 3, a sectional detail, showing both rings in the plane *y y*, Fig. 1; Fig. 4, a transverse section in the plane *x x*, Fig. 1.

Referring to the drawings, A A′ represent the two companion grinding-rings forming a pair, the peculiar dress and shape of the furrows between the grinding-teeth being illustrated in several figures of the drawings.

The series of short ridges B are arranged at regular intervals in the eye of the ring. Between these first ridges are the longer ridges *a*, arranged in groups and running from the eye to a point midway between the eye and the skirt.

The third series of ridges or grinding-teeth C begin where the ridges *a* terminate and extend to the skirt, as shown in Fig. 1. It will be observed that the ridges *a* are not all of the same length, the length of the grinding-teeth C alternating in a corresponding manner. This form of dress serves to distribute the substance uniformly over the grinding-surface, and thus prevents clogging. The several series of ridges are arranged in circles having the eye for the common center.

The series of furrows or planes D between the grinding-teeth C do not present a flat surface, but are beveled, so that the lowest part of the furrows is at the back of the teeth, in accordance with the direction in which the ring revolves. This forms a rising plane upward in the direction of the grinding side or face of the teeth, and this feature, in connection with the centrifugal force developed, causes a uniform feed and distributes the substance being ground equally alike to all the grinding-teeth and prevents choking or clogging in the furrows. The furrows also have a beveled plane longitudinally, rising gradually from the starting-point to the skirt, as shown in Fig. 4.

By this arrangement the depth of the furrow is diminished in the direction of the skirt, Fig. 2 showing the lesser and Fig. 3 the greater depth. These figures also show the oblique angles of the furrows relative to the axial line.

The operation of this form of dress is such that the substance being ground is kept in constant motion and subjected to a continuous grinding process, instead of being merely crushed or broken, as is the case where the grinding-teeth are set on a flat surface.

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

A grinding-ring having the furrows on the working-face gradually diminishing in depth as they approach the skirt and faces of the grinding-teeth, the grinding-teeth C, the ridges B, and the series or groups of ridges *a*, substantially as described.

JOHN G. MOLE.

Witnesses:
L. M. FREEMAN,
L. B. COUPLAND.