No. 780,729. PATENTED JAN. 24, 1905.

W. RIEF.

GRINDING MILL.

APPLICATION FILED OCT. 7, 1903.

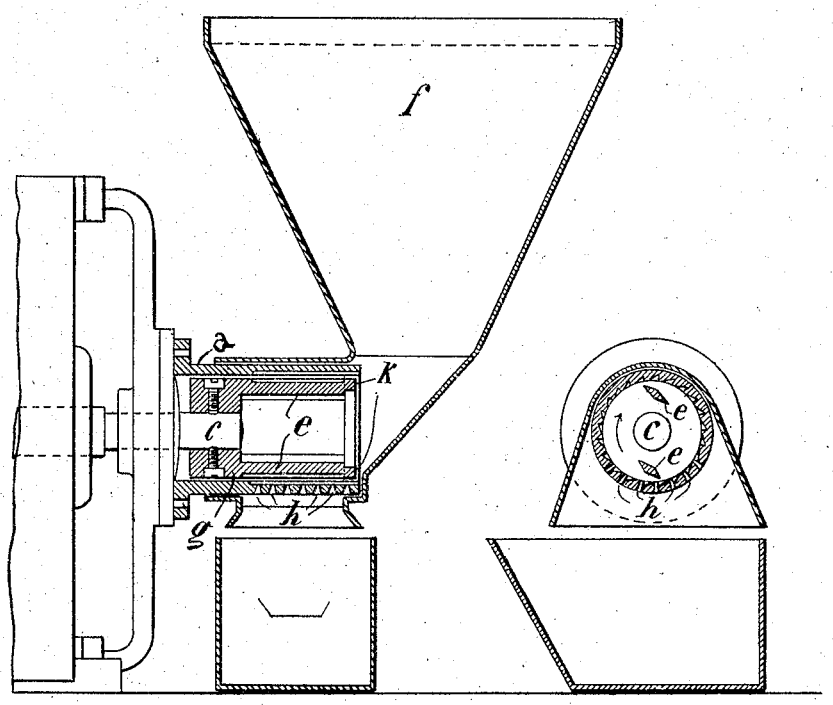

Fig. 1

Fig. 2.

Witnesses.
Johann Heinrich Rief
C. A. Nies

Inventor
Wilhelm Rief

No. 780,729. Patented January 24, 1905.

UNITED STATES PATENT OFFICE.

WILHELM RIEF, OF HAMBURG, GERMANY.

GRINDING-MILL.

SPECIFICATION forming part of Letters Patent No. 780,729, dated January 24, 1905.

Application filed October 7, 1903. Serial No. 176,138.

To all whom it may concern:

Be it known that I, WILHELM RIEF, electrician, a resident of the free town of Hamburg, German Empire, have invented certain new and useful Improvements in Grinding-Mills, of which the following is a specification.

The subject of the present invention is a mill for grinding roasted coffee-berries and other bodies which can be pulverized by crushing and squashing.

The drawings show in Figure 1 a longitudinal section, and in Fig. 2 a cross-section, of a form of construction of the mill.

The essential part of the innovation is a hollow cylinder *a*, provided on the inside with grooves in which rotates at a suitable speed the so-called "millstone" or crusher, but which is of metal. This crusher *g* closes one end of the cylinder *a*, while at the other end the grain or material to be ground is introduced from the hopper *f*. The said grooves run parallel with the axis of the cylinder or are wound spirally. By this grooving the grain is prevented to glide along the inner surface of the cylinder. The grooves need not have sharp edges. There will therefore be no necessity of sharpening the edges, as they cannot get more blunt than they are. In the wall of the cylinder are provided holes *h*, which widen toward the outside.

The crusher *g* consists of a nave or hub fixed on a shaft *c* of a motor and possessing two or more arms *e*, which are united by a ring *k*. The arms *e* are of such a cross-section that without touching the cylinder they form hollow spaces with it of a wedge-shaped cross-section and in which the grain held by the grooves is crushed in the rotation. The arms *e* are for this purpose so arranged that while the one leaves at its near edge a small passage free the other brushes close along the wall of the cylinder and presses the ground grain outside through the holes *h*. For grinding roasted coffee-berries it has proved the most practical to have the holes of a width of about two millimeters. For grinding chalk, limestone, cement-clinker, and such like the width of the holes should correspond with the size of the grains desired. In order that the material to be ground may not stick fast in the holes *h*, they widen toward the outside.

The invention admits of a diversity in the number as well as in the shape of the arms and grooves.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

The combination, in a grinding or crushing mill, with a hollow cylinder *a*, having holes widening toward the outside, of a crusher or grindstone *g*, fitted on the shaft of the motor and rotating with great speed inside the former, said cylinder *a* being provided with grooves on its inside and said crusher possessing arms which form with the cylinder wedge-shaped hollow spaces, one of said arms being adapted to crush the material to be ground, especially coffee, in said hollow spaces, whereas the other arm is adapted to press it out through the holes *h* in the wall of the cylinder, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILHELM RIEF.

Witnesses:

JOHANN HINNIS RIEF,

T. A. NEES.