No. 779,419. PATENTED JAN. 10, 1905.

R. GARDNER.

GRINDING WHEEL.

APPLICATION FILED MAR. 12, 1902. RENEWED SEPT. 28, 1904.

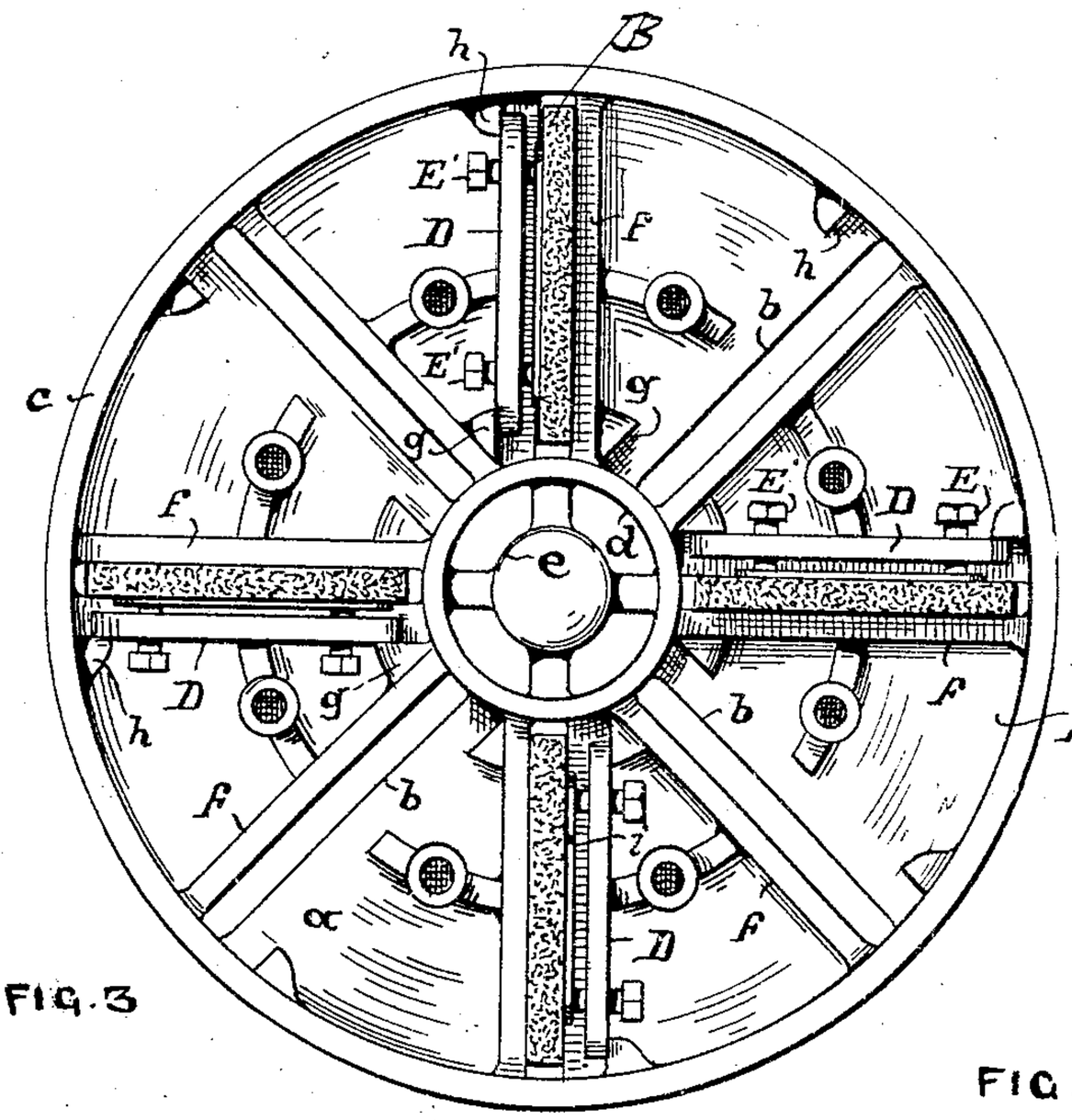

FIG. 3

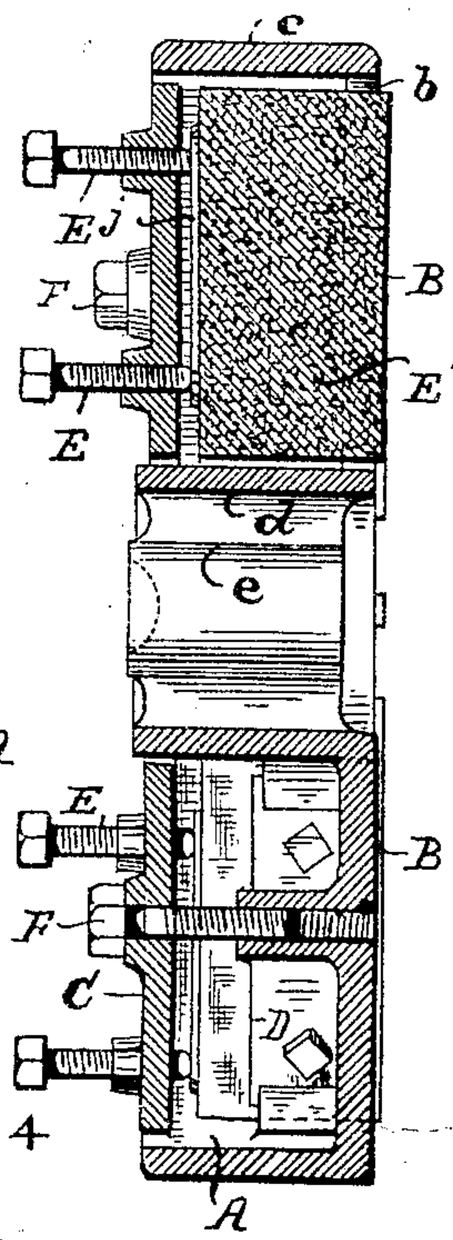

FIG. 4

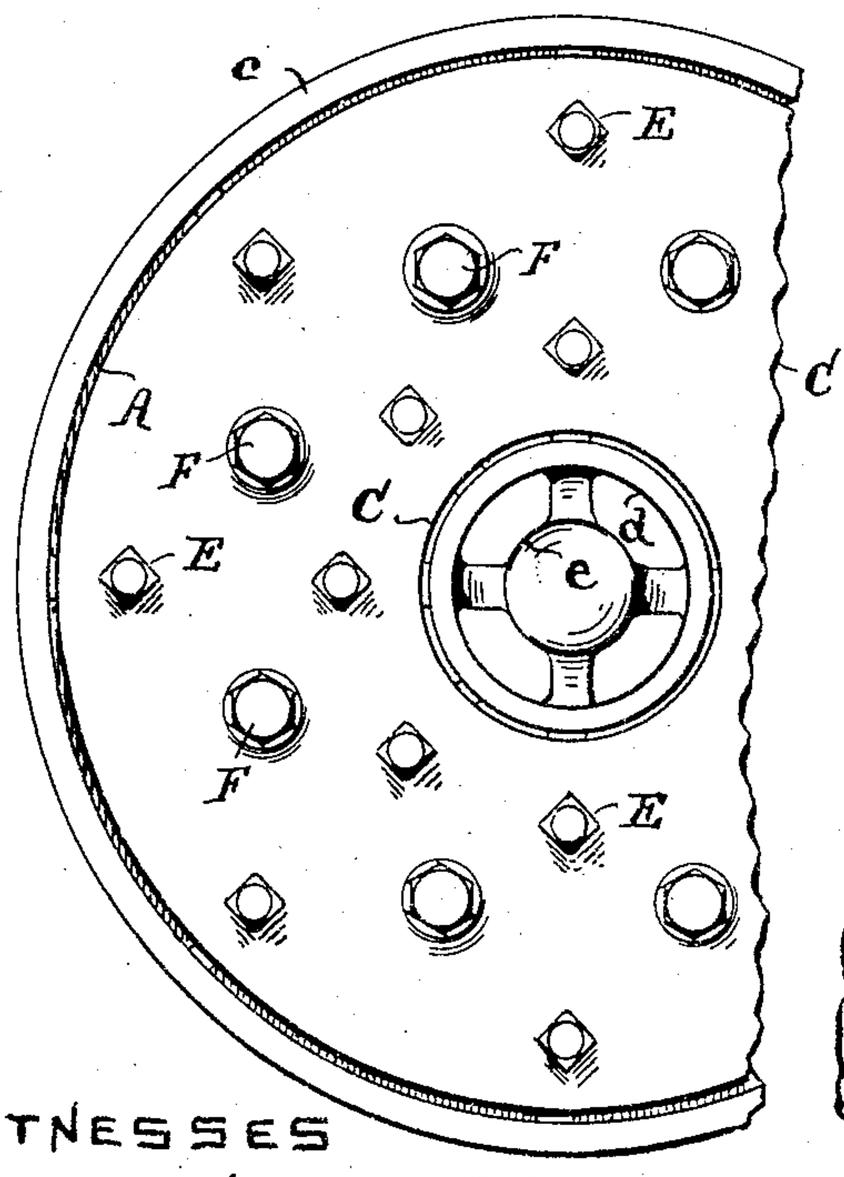

FIG. 1

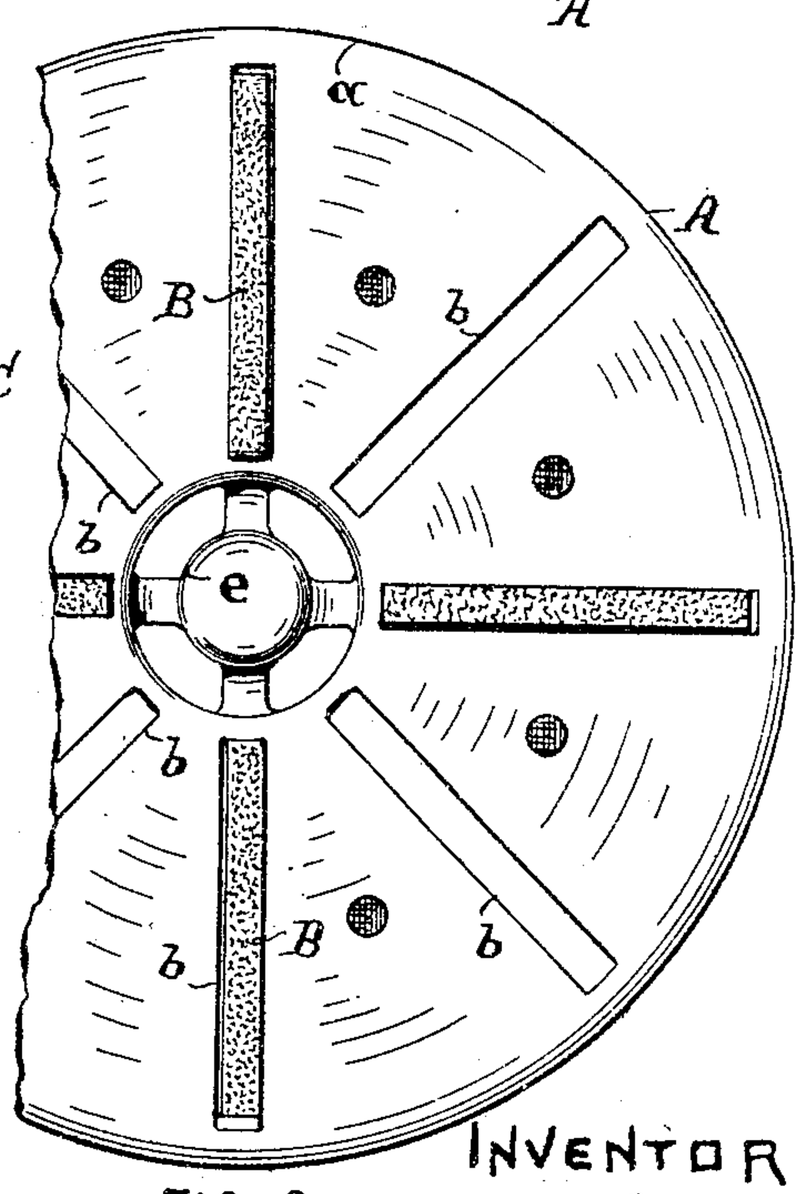

FIG. 2

WITNESSES

W. J. Mueller

C. F. Gibbs

INVENTOR

Roland Gardner

BY B. F. Eibler Atty

No. 779,419. Patented January 10, 1905.

UNITED STATES PATENT OFFICE.

ROLAND GARDNER, OF CLEVELAND, OHIO.

GRINDING-WHEEL.

SPECIFICATION forming part of Letters Patent No. 779,419, dated January 10, 1905.

Application filed March 12, 1902. Renewed September 28, 1904. Serial No. 226,281.

To all whom it may concern:

Be it known that I, ROLAND GARDNER, a subject of the King of England, and a resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Grinding-Wheels, of which the following is a specification.

My invention relates to improvements in grinding (abrading) wheels, particularly such which are used for the purpose of grinding surfaces of marble, granite stones, or the like; and the object of my improvement is to render such wheels immune from becoming clogged by the waste material produced by or in the grinding operation.

Another object is to provide for accurate and convenient adjustment of the abrading elements (bars) which I employ in such wheels.

I attain these objects in a wheel constructed and equipped substantially in the manner as shown in the accompanying drawings, in which—

Figure 1 represents a partial outer face view of said wheel. Fig. 2 is a partial view of the working face of said wheel. Fig. 3 illustrates the interior construction of said wheel. Fig. 4 is a transverse sectional view of the same.

Like letters of reference denote like parts in the drawings and specification.

Substantially this wheel consists of the casing A, bars of abrading material B, a follower-plate C, clamping-plates D D, a series of set-screws E E′, and a series of cap-screws F. The casing comprises a slotted flanged disk, as shown in all of the figures. The disk *a* contains radial slots *b* and is provided with an outer flange *c* and an inner flange *d*, the latter carrying a hub *e*, by means of which the wheel can be connected with a propelling-spindle in any suitable manner. The bars B are inserted through the above-said slots *b*, as seen in Figs. 2, 3, and 4. As shown, however, a number of bars are omitted simply to impress more clearly the integral form of the casing. The radial flanges *f* afford bearing-surface for said bars, against which the bars are forced by means of the set-screws E′ E′ within the plates D D, which find resistance upon the lugs *g h*. (See Fig. 3.) Transverse or vertical adjustment of the bars is effected by means of the follower-plate C, the cap-screws F, and the set-screws E. (See Figs. 1 and 3.)

The employment of liners *i j* is preferred simply for protection of the abrading material or bars and to distribute the pressure upon the same more uniformly. (See Figs. 3 and 4.) At all times the bars are held so adjusted as to project but slightly from out of the disk-surface. (See Fig. 4.) Under such conditions the bars are relieved of undue strains, also comparatively wide bars can be used until worn down to narrow strips. Furthermore, by this distribution or arrangement of the bars in or around the disk-surface ample clearance is left for the waste material to be thrown out as fast as it appears.

What I claim, and desire to secure by Letters Patent, is—

1. The combination with a grinding-wheel, of independent bars of abrading material extending radial to the casing of the wheel, said bars being adjustable within said casing.

2. The combination with a grinding-wheel, of independent bars of abrading material extending radial to the casing of the wheel, said bars being independently adjustable within said casing.

3. A grinding-wheel comprising a slotted, flanged casing, a series of grinding-bars, located in and protruding through the slots of said casing, a clamping-plate for each of said bars and an adjustable follower-plate arranged and equipped as shown.

4. In a grinding-wheel the combination of a radially-slotted, flanged casing, clamping-plates, a follower-plate and a series of grinding-bars, the latter being held secure in the slots of said casing by set-screws within said plates.

5. In a grinding-wheel, the casing part

thereof formed for reception of grinding-bars, clamping-plates and a follower-plate movable adjustably toward and from the casing substantially as shown and for the purpose described.

6. The combination with a grinding-wheel, of independent bars of abrading material extending radial to the casing of the wheel; means for independently adjusting each bar within the wheel; and independent means for holding the bars in adjusted position.

Signed at Cleveland, Ohio, this 15th day of January, 1902.

ROLAND GARDNER

Witnesses:
BERNH. F. EIBLER,
WM. H. MILLER.