R. GARDNER.

ABRADING WHEEL.

APPLICATION FILED JAN. 31, 1908.

970,618.

Patented Sept. 20, 1910.

2 SHEETS—SHEET 1.

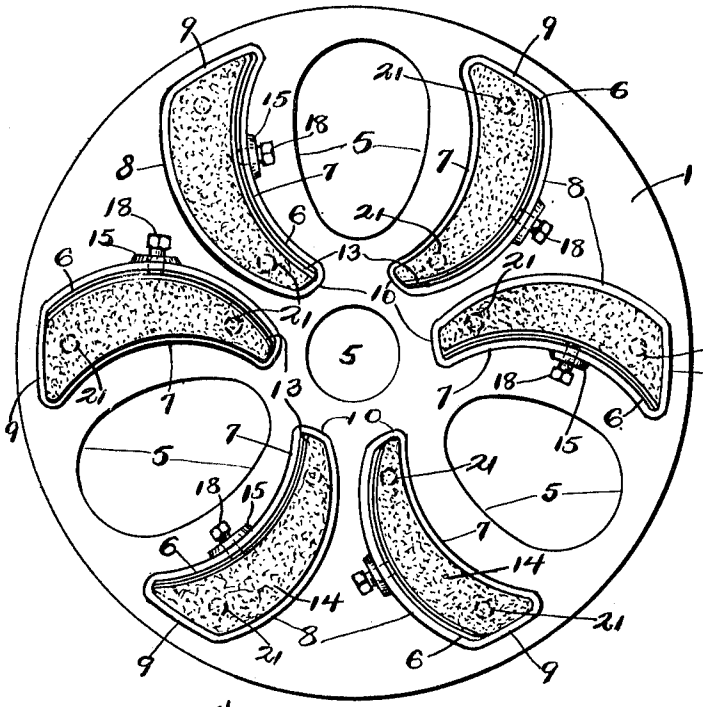

Fig. 1.

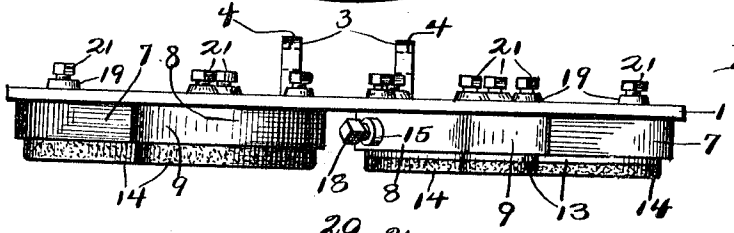

Fig. 2.

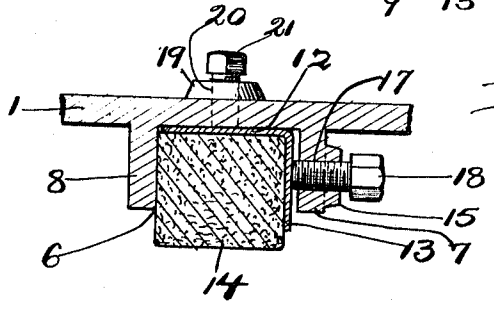

Fig. 3.

Witnesses:-
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Inventor:-
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2 SHEETS—SHEET 2.

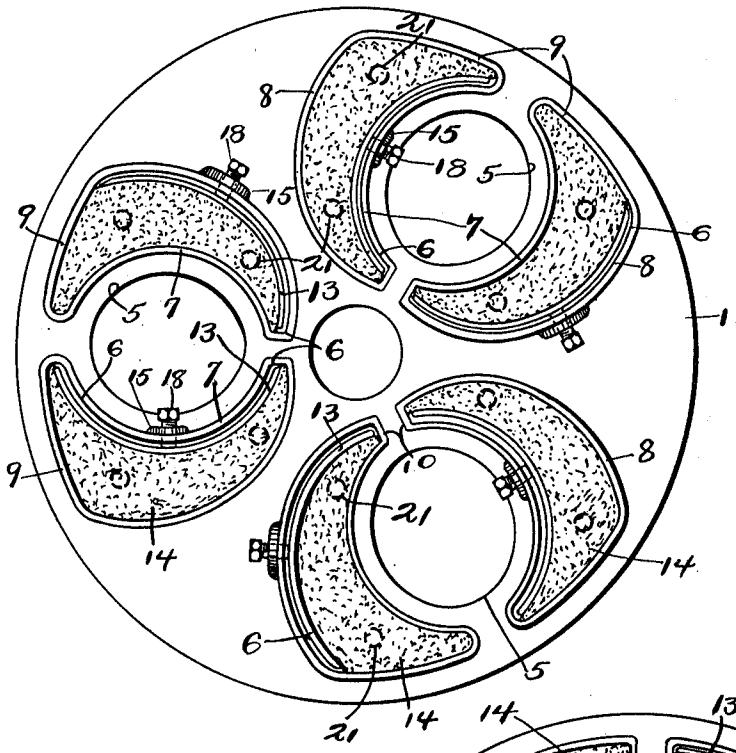

FIG. 4.

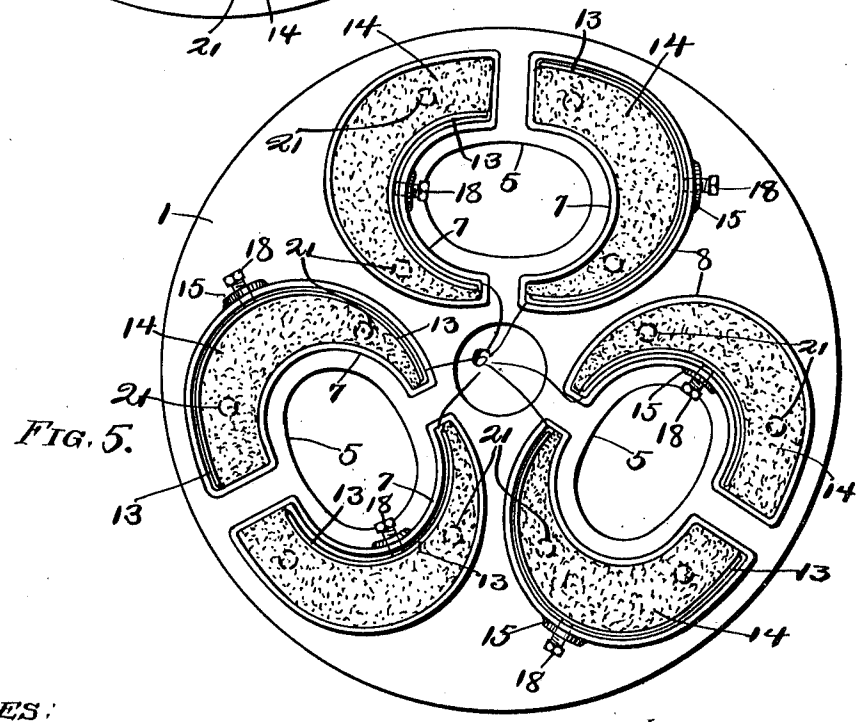

FIG. 5.

WITNESSES:

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INVENTOR,

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UNITED STATES PATENT OFFICE.

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ABRADING-WHEEL.

970,618. Specification of Letters Patent. Patented Sept. 20, 1910.

Application filed January 31, 1908. Serial No. 413,527.

To all whom it may concern:

Be it known that I, ROLAND GARDNER, a citizen of the United States of America, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Abrading-Wheels; and I hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

This invention relates to improvements in grinding or abrading wheels for marble, plate glass and the like.

One object of my invention is to provide a grinding wheel which will be efficient in operation, durable and which can be cheaply produced.

A further object of my invention is to provide such an arrangement of the parts as will insure the even wear of the surface of the grinding members, allow for the disposal of waste material and permit access of water to the grinding surface even when the wheel is running at a high rate of speed.

My invention further consists in the features of construction and combination of parts as described in the specification, pointed out in the claim and illustrated in the accompanying drawings.

In the accompanying drawings Figure 1 represents a face view of a grinding wheel embodying my invention. Fig. 2 is an edge view of same. Fig. 3 is an enlarged section through any one of the abrading blocks. Figs. 4 and 5 are views similar to Fig. 1 showing modified forms of my invention.

By referring to the drawings it will be seen that the carrier or wheel for the abrading material comprises a plate 1 which is preferably circular in form and is provided with suitable means for mounting the plate on the driving shaft. As shown in the drawings these means consist of two lugs 3, formed on the back of the wheel and which are provided with openings 4 through which a pin, not shown, is passed for securing the wheel to the driving shaft. In the plate 1 are formed a series of large openings 5. These openings are preferably spaced equally on the plate and are made of sufficient size so that water can pass freely therethrough even when the wheel is being driven at considerable speed. At each side of each opening is formed a pocket 6, and as shown, the walls of these pockets are formed by raised flanges or ridges 7 and 8 which form the side walls of the pockets and flanges 9 and 10 which form the end walls of the pockets. The flanges 7 and 8 which form the walls of said pockets are arranged comparatively close together near the center of the plate but as they approach the perimeter of the plate they diverge so that each pocket is much broader near its outer end than it is at its inner end. The wall of each pocket adjacent to an opening is preferably curved corresponding to the curvature of the opening so that each pair of pockets approximately surrounds an opening. In the bottom of each pocket is arranged a thin plate 12 which has formed integral therewith a side plate or flange 13 which extends down adjacent to the wall of the pocket which is in advance when the wheel is rotated and projects a distance below said wall. In each of the pockets 6 is arranged an abrading block 14 which corresponds in general to the shape of the pocket. On the wall of each pocket at the side where the flange 13 extends down is formed a boss 15 having a screw-threaded opening 17 for a set-screw 18 which when screwed in engages the plate 13 and thereby clamps the block 14 between the plate 13 and the opposite wall of the pocket. On the back of each pocket are arranged a pair of bosses 19 having screw-threaded openings 20 in which are arranged set-screws 21, by means of which the abrading blocks in each pocket can be adjusted outwardly to compensate for the wear on the working faces thereof.

When operating the wheel the faces of the abrading blocks are brought into contact with the marble or other surface which is to be ground or polished and the wheel is revolved in the direction indicated by the arrow. The block of each pair of blocks in advance, acts to cut and grind the surface of the marble, while the following block smooths and finishes the surface. As the wheel is revolved the material removed from the surface which is being ground will of course be driven in front of the abrading blocks and in the ordinary construction acts to uselessly wear away the front sides thereof. By the provision of the plates 13 shields

are provided which protect the front sides of the abrading blocks as well as forming clamping means, as heretofore explained.

What I claim is,—

In an abrading wheel, the combination of a carrier plate provided with a plurality of openings, pockets formed on said plate between said openings, a plate arranged in the bottom of each pocket and having a flange extending down at one side of the pocket below the bottom of the pocket, adjusting screws arranged to abut against said plate, an abrading block arranged in each pocket, and means for clamping said abrading block in said pocket.

In testimony whereof, I sign the foregoing specification, in the presence of two witnesses.

ROLAND GARDNER.

Witnesses:

VICTOR C. LYNCH,

N. L. MCDONNELL.