

R. GARDNER.
 ABRADING WHEEL AND MOUNTING THEREFOR.
 APPLICATION FILED FEB. 13, 1911.

1,020,548.

Patented Mar. 19, 1912.

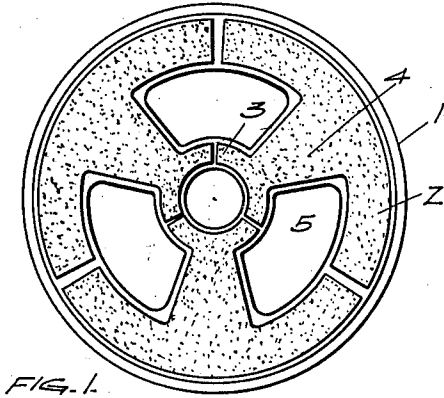


FIG. 1.

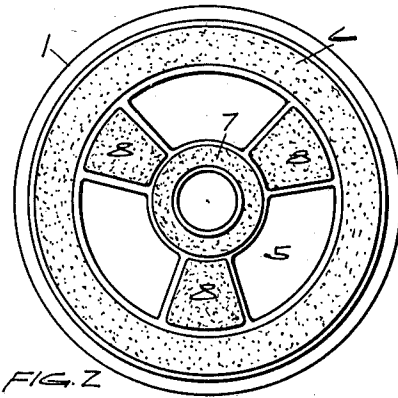


FIG. 2.

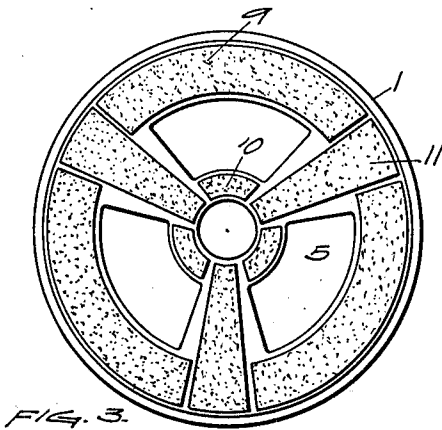


FIG. 3.

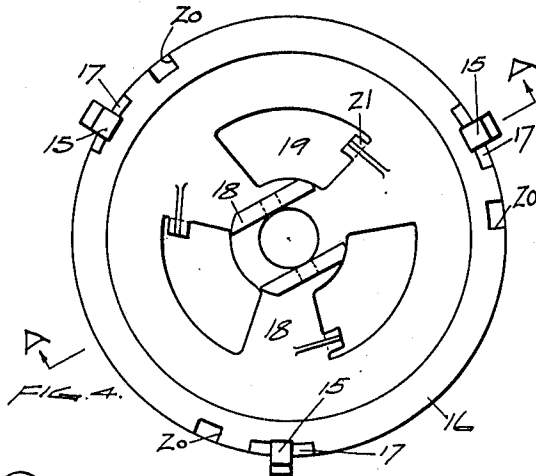


FIG. 4.

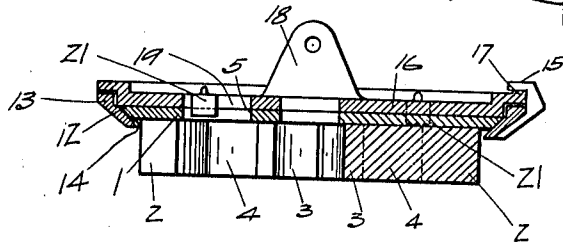


FIG. 5.

WITNESSES:

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UNITED STATES PATENT OFFICE.

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ABRADING-WHEEL AND MOUNTING THEREFOR.

1,020,548.

Specification of Letters Patent.

Patented Mar. 19, 1912.

Application filed February 13, 1911. Serial No. 608,359.

To all whom it may concern:

Be it known that I, ROLAND GARDNER, a subject of the King of Great Britain and Ireland, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Abrading-Wheels and Mountings Therefor, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

The present invention relates generally to abrading wheels of that type which is used for the purpose of grinding and polishing marble, other stones and similar materials.

One of the objects of the invention is the provision of an abrading block of such form that it will perform its work in an extremely efficacious manner, and another object of the invention is the provision of an improved means for mounting the improved block.

To the accomplishment of these and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims.

The annexed drawing and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of the various mechanical forms in which the principle of the invention may be used.

In said annexed drawing:—Figure 1 is a bottom plan view of a plate with an abrading block secured thereto; Figs. 2 and 3 are similar views illustrating modified forms of abrading blocks; Fig. 4 is a top plan view of the carrier and plate in assembled condition, and Fig. 5 is a section on the line A—A in Fig. 4.

The abrading block itself may first be considered. Having regard to Fig. 1 alone, a plate 1 is provided to which the abrading block will be secured. In this instance, the abrading block comprises a plurality of similar members and each member consists of an arc-shaped portion 2, an arc-shaped portion 3 concentric with and within the arc-shaped portion 2, and a radial portion 4 extending from substantially the middle of the arc-shaped portion 3 to substantially the middle of the arc-shaped portion 2. The several members of the abrading block are secured to the under face of the

plate 1 by a cementitious substance such, for instance, as shellac. When the several members are cemented to the plate they form together substantially outer and inner annular portions connected by radial portions. The plate 1 is perforated by openings 5 between the radial portions 4 of the abrading block.

In Fig. 2 is disclosed the same plate 1 with its openings 5 as is shown in Fig. 1. In this instance, however, instead of having arc-shaped portions in each of several members, the abrading block consists of an outer continuous annular portion 6, a similar inner portion 7 concentric with the portion 6, and separate radial portions 8 extending substantially from the portion 7 to the portion 6.

In Fig. 3 is again shown the plate 1 with its openings 5. The modification here consists in forming the abrading block with similar arc-shaped portions 9, similar arc-shaped portions 10 concentric with and within the portions 9, and radial portions 11 which separate adjacent ones of the portions 9 and the portions 10.

It will be noted that the general form is the same in each of the three forms illustrated, comprising substantially in each case two concentric annular portions with radial portions connecting them. The distinction between the forms lie in the fact that the shape of the integral pieces varies in different forms. When assembled, however, these integral pieces, no matter of what shape, result in substantially the same form of block. In each case also, whatever modification may be used the various pieces which together form the block, are not secured to the plate by screws nor by clamps, but are cemented to the plate.

The plate 1 is formed with an outer beveled edge 12. The present invention includes an annular member 13 which is formed interiorly with a beveled surface 14 and with inwardly extending projections 15 spaced above the upper surface of the member 13. In assembling the parts for operation, the plate 1 is seated within the annular member 13 with its beveled edge 12 seating on the beveled surface 14 of the member 13. A member or plate 16 is then placed on top of the plate 1, and it is provided in its edge with notches 20 which allow it to pass down below the projections 15. The member 16 is provided on its upper surface with a plu-

5 rality of ridges 17, and if, after the member 16 is placed on the top of the plate it be slightly rotated, the ridges 17 wedge under the projections 15 and clamp the plate
 10 and the members 13 and 16 securely together. The member 16 is provided with openings 19 registering in the assembled condition of parts with the openings 5 in the plate; it is also provided with lugs 21
 15 extending downwardly through openings 19 and 5 and which, in the assembled condition of parts, abut against the respective edges of the openings 5. Finally, the member 16 is provided with means such as spaced pro-
 20 jections 18 by which the carrier as a whole may be attached to the shaft which is to rotate it. It will be noted, therefore, that the plate carrying the abrading block may be clamped between the two members which,
 25 together, constitute the carrier or mounting, and that the carrier may then be attached to a rotatable shaft and the operation may be begun. By cementing the block to the plate, and assembling the parts as is done in the
 30 present invention, the block extends considerably beyond any part of the carrier and it may therefore be used until it is substantially all consumed or worn away.

35 It need scarcely be added, by way of conclusion, that in referring to certain portions of my improved abrading block as annular, it is not meant to imply that they are necessarily bounded by true circles; since such portions will still subserve their functions in a satisfactory degree if they are more
 40 markedly polygonal in form.

45 Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

50 I therefore particularly point out and distinctly claim as my invention:—

55 1. In an abrading wheel, the combination of an annular member; a plate removably seated therein; an abrading block secured to said plate by a cementitious substance and comprising two concentric substantially annular portions; and a second member adapted to clamp said plate in said first member.

2. In an abrading wheel, the combination of an annular member; a plate removably seated therein; an abrading block secured to said plate by a cementitious substance and comprising two concentric substantially an-

nular portions; and a plurality of portions extending radially from the inner annular portion to the outer one; and a second member adapted to clamp said plate in said first member.

3. In an abrading wheel, the combination of an annular member; a plate removably seated therein; an abrading block secured to said plate by a cementitious substance and comprising a plurality of similar members; each member being formed with two concentric arc-shaped portions and with a portion extending radially from substantially the middle of the inner arc-shaped portion to substantially the middle of the outer one, and a second member adapted to clamp said plate in said first member.

4. In an abrading wheel, the combination of an annular member; a plate removably seated therein; an abrading block secured to said plate by a cementitious substance; and a second member adapted to clamp said plate in said first member.

5. In an abrading wheel, the combination of an annular member provided interiorly with a beveled surface and with inwardly extending projections above its upper surface; a plate provided with a beveled edge seating against the beveled surface of said member; an abrading block secured to said plate by a cementitious substance; and a second member resting on said plate and provided with ridges adapted to wedge against said projections.

6. In an abrading wheel, the combination of an annular member provided interiorly with a beveled surface and with inwardly extending projections above its upper surface; a plate provided with a beveled edge seating against the beveled surface of said member; an abrading block secured to said plate by a cementitious substance, said block being formed with a substantially annular portion and with a plurality of portions extending radially inwardly from the annular portion, said plate being perforated between said radial portions; and a second member resting on said plate and provided with ridges adapted to wedge against said projections.

Signed by me this 10th day of February, 1911.

ROLAND GARDNER.

Attested by—

ANNA L. GILL,
 JNO. F. OBERLIN.