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Patented Apr. 10, 1900.

J. H. ADAMSON.
GRINDING AND POLISHING WHEEL AND MOUNTING.

(Application filed Sept. 12, 1899.)

(No Model.)

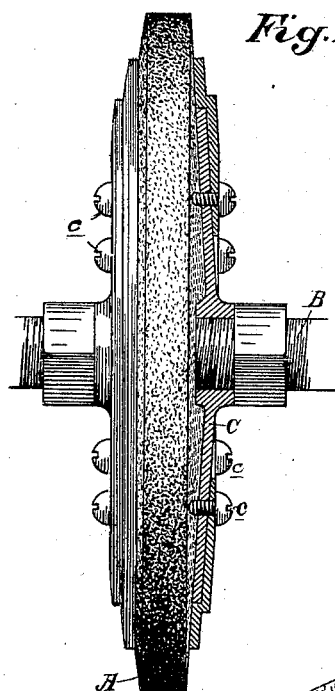


Fig. 1.

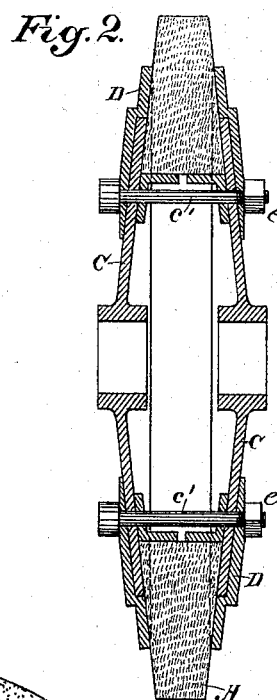


Fig. 2.

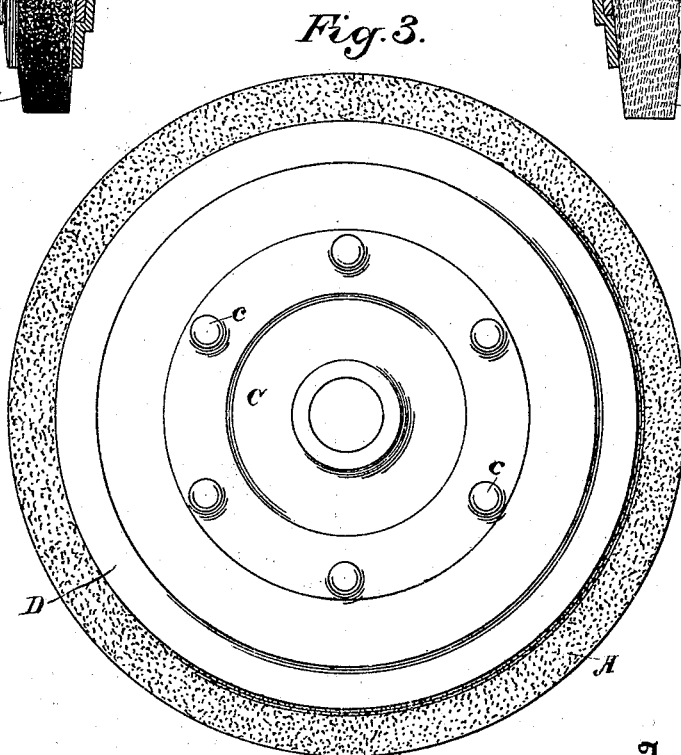


Fig. 3.

Witnesses,

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JAMES H. ADAMSON, OF WEST MELBOURNE, VICTORIA.

GRINDING AND POLISHING WHEEL AND MOUNTING.

SPECIFICATION forming part of Letters Patent No. 647,063, dated April 10, 1900.

Application filed September 12, 1899. Serial No. 730,201. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. ADAMSON, a citizen of Victoria, residing at West Melbourne, in the county of Bourke, Colony of Victoria, have invented an Improvement in Grinding and Polishing Wheels and Mountings; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to improvements in cutting, grinding, or polishing wheels and in the mounting thereof, such as emery, tanite, corundum, or grinding or cutting wheels of any material which has a tendency to disintegrate when running at a high speed.

It consists, essentially, in devices hereinafter described and claimed for clamping and holding the wheel in such a manner as to prevent the breaking of the same by centrifugal action when running at a high rate of speed.

It also comprises details of construction which will be more fully explained by reference to the accompanying drawings.

Dangerous accidents frequently occur in the use of grinding, cutting, or polishing wheels and the like as now constructed by their bursting while running at high speeds.

It is the object of my invention to provide mountings for such wheels by which they are reinforced and clamped together by the use of casings made of steel, iron, or other material having a greater strength and in so arranging such clamping devices that new surfaces of the wheel proper may be exposed as fast as it becomes worn.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is an edge view of a wheel having one flat and one convex face and partial section of mountings. Fig. 2 is a sectional view in the plane of the axis with double-convex wheel and mountings. Fig. 3 is a face view of the same.

A represents the grinding-wheel, which may be made of any grinding, cutting, or polishing material such as has been heretofore named or suited to the purpose, and it may be made of any desired shape for the work to be done. These wheels are mounted and turnable upon a shaft or spindle B, and said wheels are in the form of truncated cones having the greatest thickness nearest the center and being made thinner toward the periphery,

as plainly shown. Either one or both sides may be made of this form. These wheels may be made with a hole through the center of sufficient size to admit the shaft B, or preferably they may be made in the form of annular rings having an opening of considerable diameter in the center. (See Fig. 2.) Upon each side of these wheels are fitted metal disks C, which are made concavo-convex, the concave sides corresponding in their inclination with that of the wheel-surfaces. These disks are clamped firmly against the inner portions of the wheels and secured by collars or by screws *c* or by bolts *c'*, passing through the holding-disks and through the hollow central portion of the wheel, with nuts *e*, which may be screwed upon the bolt, so as to hold them firmly in place. Outside of these disks are a second series of annular disks D, fitting around the periphery of the first plates and with their inner peripheries overlapping them and the outer peripheries extending beyond and being similarly concaved or shaped to fit against the wheels outside of the first-named plates, and these outer disks are also secured either by the bolts *c'*, which pass through the first plates, or, if desired, a second series of bolts may be employed. For the greatest strength the disks should be not only firmly attached to each other, but also with the boss or central part.

In the present case I have shown the outer annular metal disks as overlapping the interior ones to a distance which will allow a single set of bolts to clamp both sets of disks. Any number of these disks may be added, extending toward the periphery of the wheel and depending upon the size thereof, it being designed to have them cover as much of the wheel as possible and leave a sufficient surface exposed for the work to be done.

Whenever the wheels have been worn down to the point near the clamping-disks, the exterior disks may be removed and, if necessary, other disks having a smaller exterior diameter may be substituted, thus again clamping the material to the wheels to within a short distance of the periphery and so the wheels may be gradually worn down to the point where it is necessary to discard them.

By making the wheels annular with the hollow central space I am enabled to make larger

wheels with the same amount of material and to thus economize them so that they can be more nearly used up before being discarded. The larger diameter also gives a more rapid
5 travel of the periphery when running the wheel at any given speed, and the concave clamping-plates secure them so that they cannot burst or fly apart.

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

1. A grinding and polishing wheel having the sides converging from the portion nearest the center to the periphery, disks having faces
15 adapted to clamp the opposite sides of the wheel, a second series of disks of larger diameter, the inner peripheries overlapping the first-named disks and the outer portion clamping the sides of the wheel outside of the first-

named disks, and clamping bolts and nuts 20 whereby they are secured to the first-named disks.

2. A grinding and polishing wheel having its sides converging toward the periphery, a plurality of overlapping plates having the inner 25 faces made concave and adapted to fit against the convergent sides of the wheel, and clamping-nuts and transverse bolts whereby the plates are secured directly to each other and removably compressed against the sides 30 of the wheel.

In witness whereof I have hereunto set my hand.

J. H. ADAMSON.

Witnesses:

D. GRAY,

O. SEIDEL.