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D. F. McGOVERN

POLISHING WHEEL

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Fig. 1

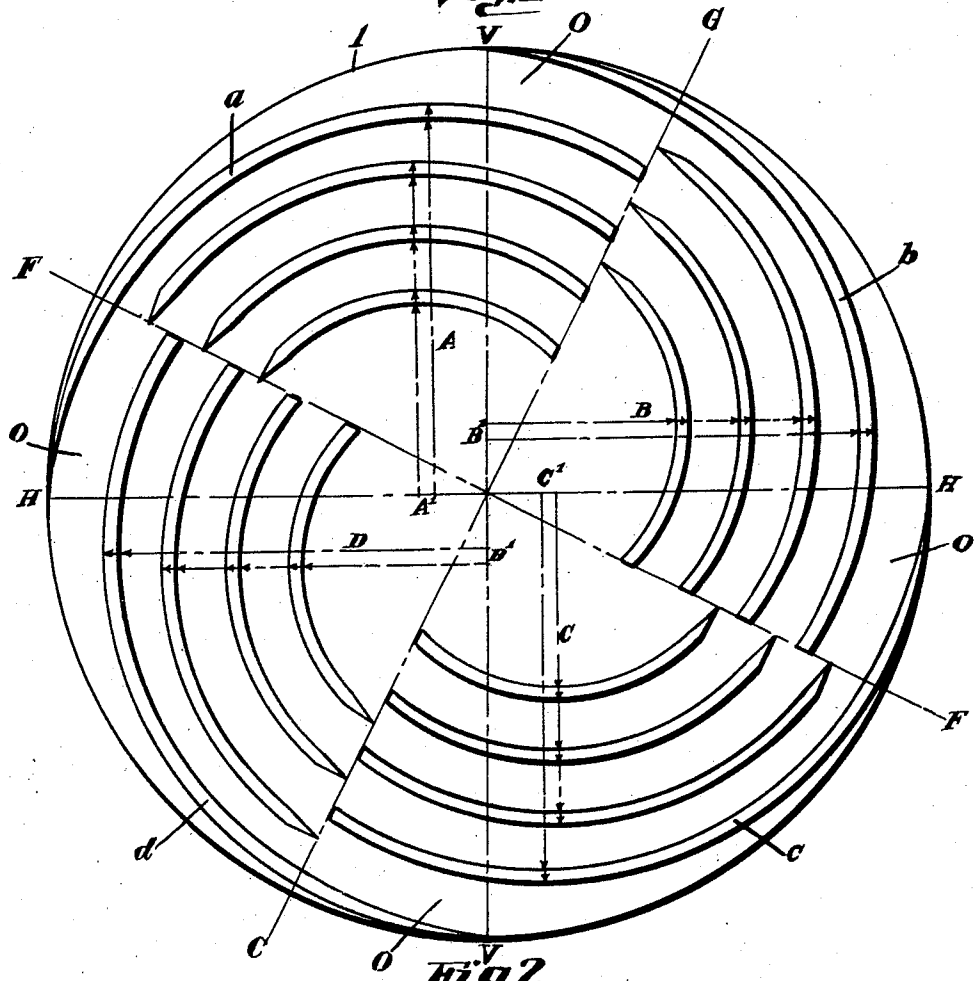
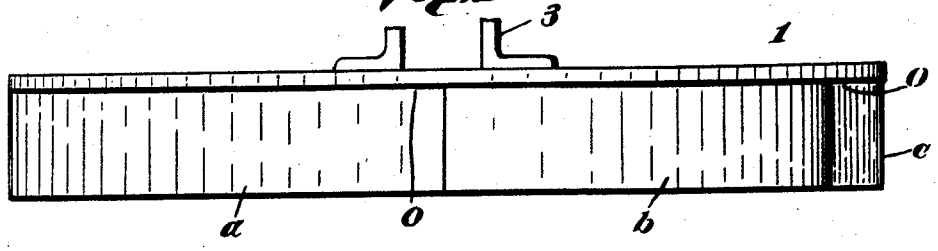


Fig. 2



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POLISHING WHEEL.

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This invention relates to polishing wheels, and involves a novel flange arrangement and relation designed to insure uniform and adequate distribution of the abrasive over the entire working face of the wheel.

The construction and operation of my wheel, together with a selected embodiment thereof which well illustrates the principles involved and is itself a form found satisfactory in use, is described and shown in the accompanying specification and drawings, and the characteristic features of novelty are particularly pointed out in the appended claims. Throughout the specification and drawings, like reference characters are correspondingly applied, and in the drawings:

Fig. 1 is a face view of a polishing wheel in accordance with my invention, and,

Fig. 2 is a side elevation thereof.

I have indicated generally at 1 the plate or disc of the polishing wheel, at 2 the central mud discharge opening thereof, and at 3 the attaching lugs which receive the driving shaft.

According to my invention the working face of the disc 1 is provided with a plurality of segmental flanges which, as here shown, are arranged in the form of four definite and distinct sector shaped flange sets, indicated generally by the reference characters A, B, C and D in Fig. 1, although obviously a greater or lesser number of flange sets may be used. These flange sets are symmetrically distributed over the working face of the wheel between intersecting diameters F—F and G—G, which diameters, in the embodiment herein illustrated, intersect each other at right angles.

The approximate centers A′, B′, C′ and D′, respectively, of the individual flange sets are all eccentric to the axis of rotation of the wheel, the flanges of each succeeding set being centered on a diameter intersecting that on which the preceding set is centered, i. e., the approximate center B′ of the flange set B, for example, is located substantially on the diameter V—V which is the vertical median line of the disc, and the approximate center A′ of the preceding flange set A is located substantially on the intersecting diameter H—H which is the horizontal median line of the disc. Where four flange sets are employed, the approximate centers of substantially oppositely disposed sets, as the centers A′ and C′ for the sets A and C, are located on the same diameter H—H and the approximate centers B′ and D′ for the sets B and D are located on the same diameter V—V.

Each flange set is substantially contained within the quadrant formed by another pair of intersecting diameters F—F and G—G, except that the leading ends of the outermost or leader flange of each flange set is extended beyond the diameter on which the included flanges of said set terminates and therefore overlaps the tail end of the outermost flange of the next preceding flange set so as to provide therewith a series of abrasive intake openings O spaced equidistantly about the periphery of the disc. As here shown, the outermost flanges *a*, *c* of the flange sets A, C are extended beyond the diameter F—F and terminate at opposite sides of the disc on the horizontal median line H—H, and the outermost flanges *b*, *d* of the flange sets B, D extend beyond the diameter G—G and terminate at opposite sides of the disc on the vertical median line V—V. The eccentric centering of the individual flange sets brings the leading ends of the included flanges between the channels defined by the flanges of the preceding set so that the flanges do not track each other. Preferably the tail ends of all the flanges of a set terminate in the same plane.

My arrangement and relation of flanges enables me to secure an adequate intake of abrasive, the wheel in the embodiment shown having four equidistantly spaced abrasive intake openings about its periphery, and a uniform distribution of such abrasive over the entire working face of the wheel, the outermost or leader flanges of each flange set drawing in and delivering the abrasive to the included flanges of each flange set, and the included flanges feeding the abrasive for their entire length and then delivering it to the next succeeding set. This action is continuous and progressive, and the abrasive is not only thoroughly broken up in its passage towards the center of the wheel, but is uniformly distributed over the entire working face of the wheel. The centrifugal force developed by the rapidly rotating wheel returns the abrasive outwardly toward the periphery of the wheel, thereby overcoming the tendency of the abrasive to collect at the center and clog the wheel.

Various modifications in the arrangement and relation of flanges may obviously be resorted to within the spirit and scope of

my invention as defined by the appended claims.

What I therefore claim and desire to secure by Letters Patent is:

1. A polishing wheel comprising a plate having on its working face a plurality of sets of arcuate flanges disposed in symmetrically arranged groups lying between intersecting diameters of the plate, each flange set being centered on a diameter intersecting that of the preceding flange set, the leading ends of the outermost flanges of a pair of substantially oppositely disposed flange sets starting at substantially the horizontal or vertical median line of the plate and in advance of the tail ends of the flanges of the next preceding flange set.

2. A polishing wheel comprising a plate having on its working face a plurality of sets of arcuate flanges disposed in symmetrically arranged groups lying between intersecting diameters of the plate, each flange set being centered on a diameter intersecting that of the preceding flange set, the leading ends of the outermost flanges of a pair of substantially oppositely disposed flange sets starting at substantially the horizontal or vertical median line of the plate and in advance of the tail ends of the flanges of the next preceding flange set, and the centers of said oppositely disposed sets being located on the same diameter but on opposite sides of the center of the plate.

In testimony whereof I affix my signature.

DANIEL FREDERICK McGOVERN.