No. 875,935. PATENTED JAN. 7, 1908.

E. F. LANDIS.

ABRADING WHEEL.

APPLICATION FILED AUG. 23, 1906.

Fig. 1.

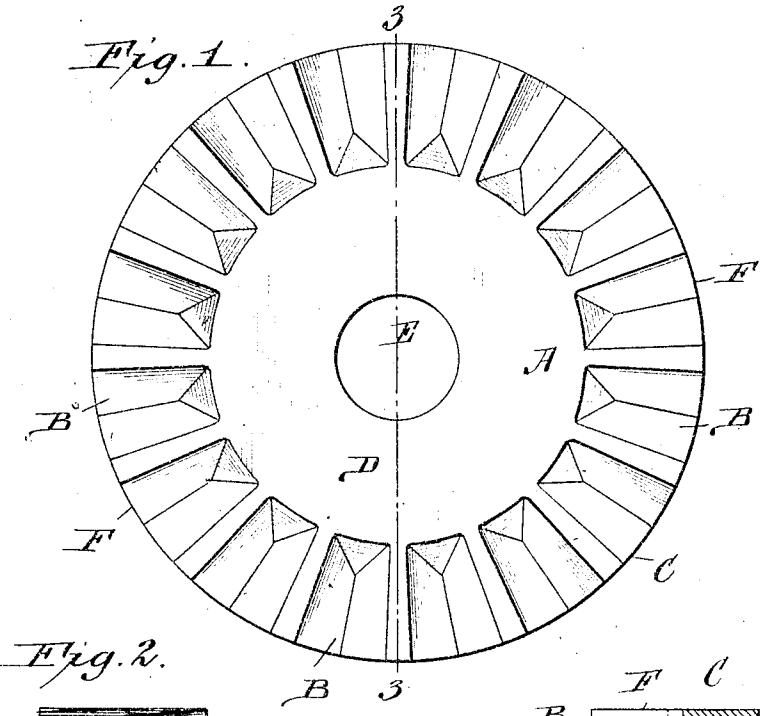


Fig. 2.

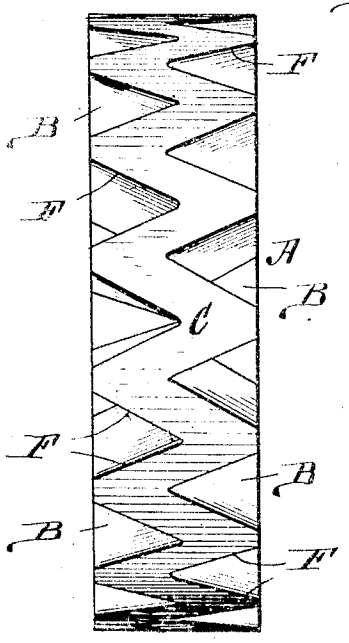
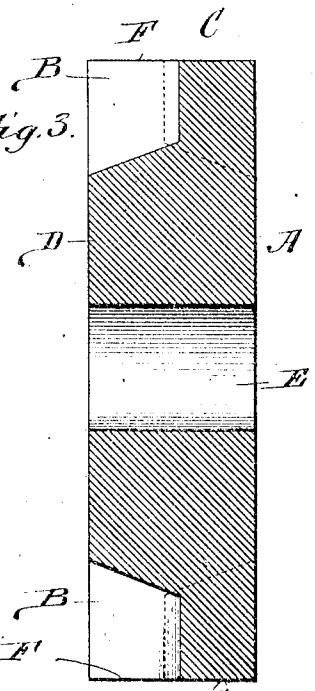


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

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ABRADING-WHEEL.

No. 875,935. Specification of Letters Patent. Patented Jan. 7, 1908.

Application filed August 23, 1906. Serial No. 331,748.

To all whom it may concern:

Be it known that I, EZRA F. LANDIS, of La Salle, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Abrading-Wheels, of which the following is a specification.

This invention relates to abrading or grinding wheels made preferably of emery, corundum, or other similar abrasive material; it being especially designed for grinding metal or other hard substances.

The primary object of this invention is the production of a wheel of this character which can be constructed of fine abrasive particles properly bonded, and in which the maximum grinding action may be obtained.

Other objects are to so construct the wheel that glazing of the grinding-surface is impossible, and in which the article being ground is subjected to the action of shearing edges, whereby a more effecting grinding action is obtained.

My invention consists in a wheel having the edges of its grinding-face indirect or arranged in a zig-zag or substantially zig-zag course, so that they act on the article being ground in a shearing-manner.

As clearly shown in Fig. 2, the grooves in opposite sides of the wheel are of sufficient depth to pass a line drawn centrally around the circumference of the wheel, the grooves on one side being out of line with those on the other side so that the grinding-face is perfectly smooth and is given a zig-zag or irregular course; thus providing indirect or zig-zag edges for the grinding-face. The course of the grinding-face at every point of its circumference is therefore at an angle to the line of movement of the wheel, thus forming shearing-edges F. By means of this construction a more effective grinding action is obtained. Owing to the grooving of the side faces, the weight of the wheel is considerably reduced and a more effective grinding action is obtained than can be obtained with a plain-faced wheel of considerable larger size.

In the drawings, Figure 1 is a side elevation of an abrading wheel embodying my invention. Fig. 2 is an edge view of the same. Fig. 3 is a transverse central section on line 3—3, Fig. 1.

Referring to the drawings in detail, corresponding letters of reference refer to corresponding parts in the several figures.

A represents the wheel considered as a whole, which may be constructed of any material used for grinding purposes, but which is preferably constructed of emery corundum, or similar abrasive material.

In practicing my invention, I by preference employ a disk or wheel, and in the construction of said wheel, form in the side faces, radial grooves B which extend from the periphery or grinding face C inward toward the axis of the disk the desired distance. The ungrooved portion forms the hub D having the usual spindle bore E on which the wheel is mounted. As is common in grinding wheels, the metallic spindle-flanges or plates bear against the sides of the hub and strengthen the wheel; that portion of the sides in which the grooves B are formed being exposed.

The grooves on opposite sides are arranged out of line and provide indirect, or zig-zag edges for the grinding face. Said edges, by reason of their deviating from a direct course, are continually at an angle to the line of movement of the wheel and form shearing edges F. The shearing edges remain until the wheel is worn to the inner ends of the grooves.

Glazing of the grinding face is prevented, since the particles ground from the article operated on and worn from the wheel, enter the grooves C, from which they drop onto the floor.

If desired, the principle of my invention may be applied to reciprocating or other styles of grinders, as I do not wish to limit myself to a revoluble grinder; the accompanying illustration being merely a representative embodiment of this invention.

Having thus described my invention, what I claim is,—

1. An abrading body having a smooth peripheral grinding face, and grooves in at

least one of its sides extending inward from said grinding face.

2. An abrading-wheel having a smooth peripheral grinding face, and radially disposed grooves in its sides extending inward from the grinding face, the grooves on opposite sides being arranged out of line.

3. An abrading body having a grinding surface and grooves in opposite sides arranged out of line and of a depth to extend beyond the longitudinal center of said grinding surface.

In testimony whereof, I have affixed my signature in the presence of two subscribing witnesses.

EZRA F. LANDIS.

Witnesses:
L. I. LUICK,
F. F. LANDIS.