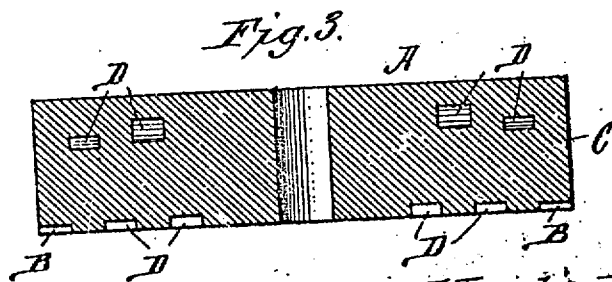
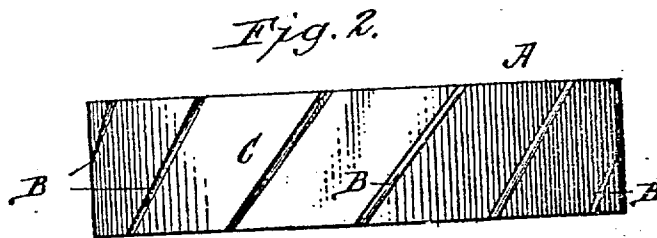
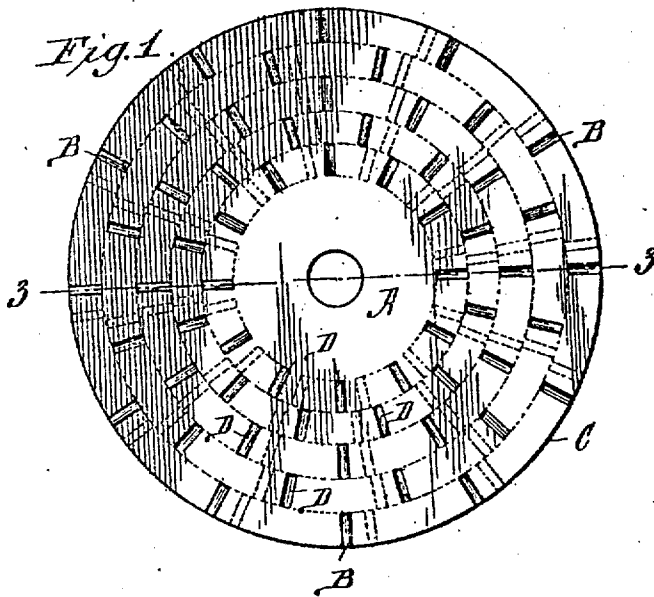


E. F. LANDIS.
GRINDING OR ABRADING WHEEL.
APPLICATION FILED NOV. 29, 1907.

Patented Jan. 19, 1909.

909,913.



Witnesses:
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UNITED STATES PATENT OFFICE.

EZRA F. LANDIS, OF WAYNESBORO, PENNSYLVANIA.

GRINDING OR ABRADING WHEEL.

No. 909,913.

Specification of Letters Patent.

Patented Jan. 19, 1909.

Application filed November 29, 1907. Serial No. 404,277.

To all whom it may concern:

Be it known that I, EZRA F. LANDIS, a citizen of the United States, residing at Waynesboro, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Grinding or Abrading Wheels, of which the following is a specification.

This invention relates to an improved grinding or abrading-wheel and its primary object is the construction of a wheel having a plurality of transverse peripheral grooves and a plurality of openings extending transversely through the wheel and arranged in a plurality of circular series, said grooves and openings being arranged obliquely to the axis of the wheel and the openings of adjacent series having their obliquity in opposite directions. By these means the grinding-wheel will at all times have a series of circumferential grooves arranged at an angle to the axis of the wheel so that the edges of the grooves act on the object being ground or polished in a shearing manner, whereby a more effective grinding action is obtained and the tendency of the grinding surface glazing is reduced to the minimum. The openings of each series are staggered with respect to the openings of adjacent series so that the material between the openings of any one series bridges the openings of the next series nearer the axis of the wheel. By means of this construction the formation of openings in the wheel does not materially weaken the latter.

The invention consists in an abrading-body having lateral grooves and openings arranged in the manner hereinafter described and particularly pointed out in the appended claims.

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 section taken on line 3—3, Fig. 1.

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

The reference letter A designates the wheel having a series of peripheral grooves B, comparatively narrow and deep and extending across the abrading or grinding face C, preferably at an angle to the axis of the wheel.

D designates transverse openings in the wheel which are also comparatively narrow

and high and arranged in a plurality of circular series. The openings of the outer circular series have their outer walls arranged the same distance from the grinding face as the inner walls of the peripheral grooves, and they are disposed in radial lines between said grooves. Said openings are also placed at an angle to the axis of the wheel, but in a direction opposite that of the peripheral grooves. The remaining circular series of openings are similar to the outermost series with the exception that the direction of obliquity of the openings of alternate series is opposite that of the outermost series of openings.

In use, the grinding-wheel becomes worn away, and when the peripheral grooves vanish, the openings of the outermost series become uncovered, and when said openings become ground away and vanish, the second series of openings become uncovered, this being continued until the grinding surface is worn to the inner ends of the openings of the last series; each series of openings when uncovered by the wearing away of the wheel, becomes peripheral grooves.

By staggering the openings and changing the direction of the angle in alternate series, as shown, the wheel is weakened but very little and a perfectly durable wheel is obtained which has many advantages over a solid wheel.

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

1. An abrading-wheel having a series of peripheral grooves and a circular series of openings whose outer walls are the same distance from the grinding surface as the inner walls of said grooves.

2. An abrading-wheel having a series of peripheral grooves arranged at an angle to the axis of the wheel and a circular series of openings arranged out of line with said grooves and having their outer walls the same distance from the grinding surface as the inner walls of said grooves, said openings being arranged at an angle opposite that of said grooves.

3. An abrading-wheel having a series of peripheral grooves and a circular series of openings in radial planes between said grooves and so arranged that when the material between said grooves wear away said openings are exposed.

4. An abrading-wheel having a series of peripheral grooves and a plurality of cir-

cular series of openings, said openings being staggered and each series being arranged at an angle to the axis of the wheel but at an angle opposite that of the openings of the adjacent series.

5 An abrading-wheel having a plurality of circular series of openings arranged at an angle to the axis of the wheel, the angle of the openings of alternate series being in the same direction but at an angle to the axis of the wheel opposite that of the openings of the intermediate series.

10 6. An abrading body having transverse grooves in its grinding-face and transverse openings in planes between said grooves.

7. An abrading body having transverse grooves in its grinding-face and transverse openings so arranged with respect to said grooves that when the latter vanish by reason of the abrading body wearing away said openings become grooves on the grinding-face.

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

EZRA F. LANDIS.

Witnesses:

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