

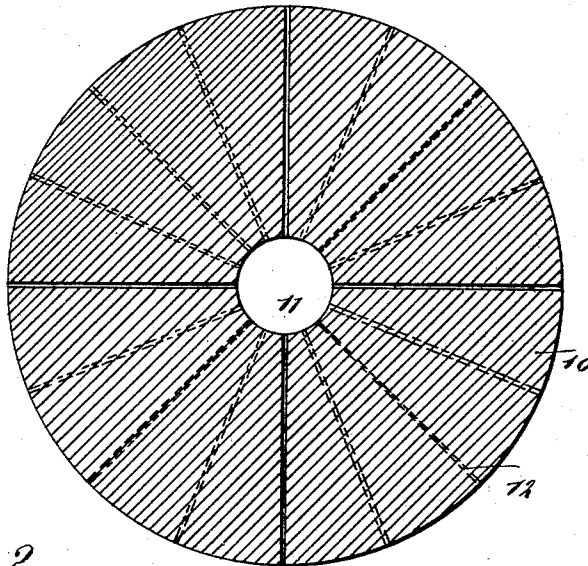
(No Model.)

F. W. BECKERT.  
GRINDING WHEEL.

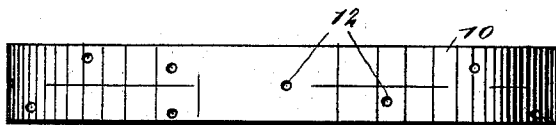
No. 524,572.

Patented Aug. 14, 1894.

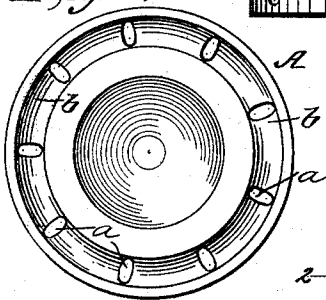
*Fig. 1.*



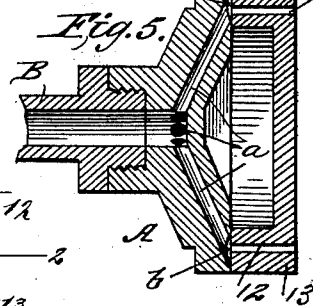
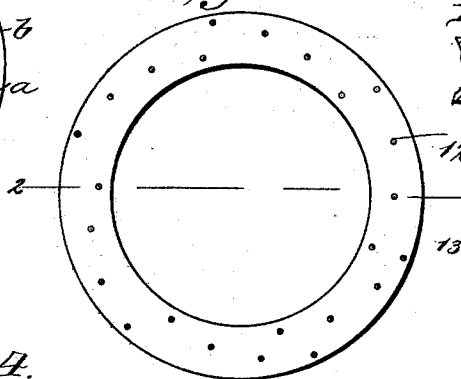
*Fig. 2.*



*Fig. 6.*



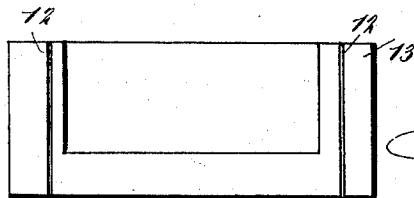
*Fig. 3.*



*Fig. 4.*

WITNESSES:

*H. M. Andle.*  
*E. M. Clark*



INVENTOR

*F. W. Beckert*

BY

*Munn & Co.*  
ATTORNEYS

# UNITED STATES PATENT OFFICE.

FRED WILLIAM BECKERT, OF OTTUMWA, IOWA.

## GRINDING-WHEEL.

SPECIFICATION forming part of Letters Patent No. 524,572, dated August 14, 1894.

Application filed September 13, 1893. Serial No. 485,403. (No model.)

### *To all whom it may concern:*

Be it known that I, FRED WILLIAM BECKERT, of Ottumwa, in the county of Wapello and State of Iowa, have invented a new and Improved Grinding-Wheel, of which the following is a full, clear, and exact description.

My invention relates to improvements in grinding wheels and particularly to emery, corundum and similar wheels which are usually driven at a high speed. The common difficulty with such wheels is that they soon glaze and also get out of shape. This difficulty is occasioned in a great measure, by the fact that the water is applied externally to the surface of the wheel, and in consequence a portion of the water is thrown off by centrifugal force and the wheel is unevenly watered, so that some parts wear away faster than others.

The object of the invention is to produce a wheel having means for feeding the water from its center, and to arrange the feed in such a way that the water will be distributed in a perfectly even manner over the surface of the wheel and thus glazing and irregular wear are abolished.

To these ends my invention consists of a grinding wheel, the construction of which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a cross section on the line 1—1 of Fig. 2, of an ordinary flat grinding wheel showing my improvements. Fig. 2 is an edge or plan view of the wheel. Fig. 3 is a plan view of a cup grinding wheel constructed in accordance with my invention. Fig. 4 is a cross section of the form of wheel shown in Fig. 3, on the line 2—2 in said figure. Fig. 5 is a sectional elevation on a reduced scale showing the manner of supplying water to the cup wheel, and Fig. 6 is a plan view of the wheel carrying head.

The wheel 10 is constructed like an ordinary flat grinding wheel having the usual

bore 11 for the shaft, and it is provided with my improvement which consists of water passages or channels 12, which extend radially from the bore 11 to the surface of the wheel. It is my intention to run the wheel on a hollow shaft connected with a source of water supply, and when the wheel is in motion the centrifugal force causes a suction to be set up in the water passages or channels, which draws the water through the said channels and causes the same to be distributed over the face of the wheel.

It will be observed that the channels cannot clog, because the water pressure caused by the centrifugal force referred to causes the water to eject any material which may be collected in the channels. It will be understood that these channels may be produced in any form of wheel and in Figs. 3 and 4, they are shown in a cup wheel 13, the channels extending through the flange of the wheel, as shown clearly in Fig. 4.

In practice the cup wheel will be secured to a head A, which is secured to hollow shaft B connected with a source of water supply. The head A is provided with a series of channels *a* leading from the hollow shaft B to the annular groove or chamber *b* in the face of the head, as shown in Fig. 5, so that water can pass from the shaft through the channels *a* to the chamber *b* and from thence to the channels 12 of the said wheel.

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

1. As an improved article of manufacture, a grinding wheel having water channels extending radially from its center to its grinding surface, substantially as described.

2. As an improved article of manufacture, a grinding wheel having water passages through it, said passages terminating at the grinding face of the wheel, as specified.

FRED WILLIAM BECKERT.

Witnesses:

WILLIAM KRONER,

ADOLPH BARNHARDT HEYDRICH.