Dec. 5, 1933. K. DRAPAK 1,938,520

GRINDING WHEEL

Filed May 26, 1930

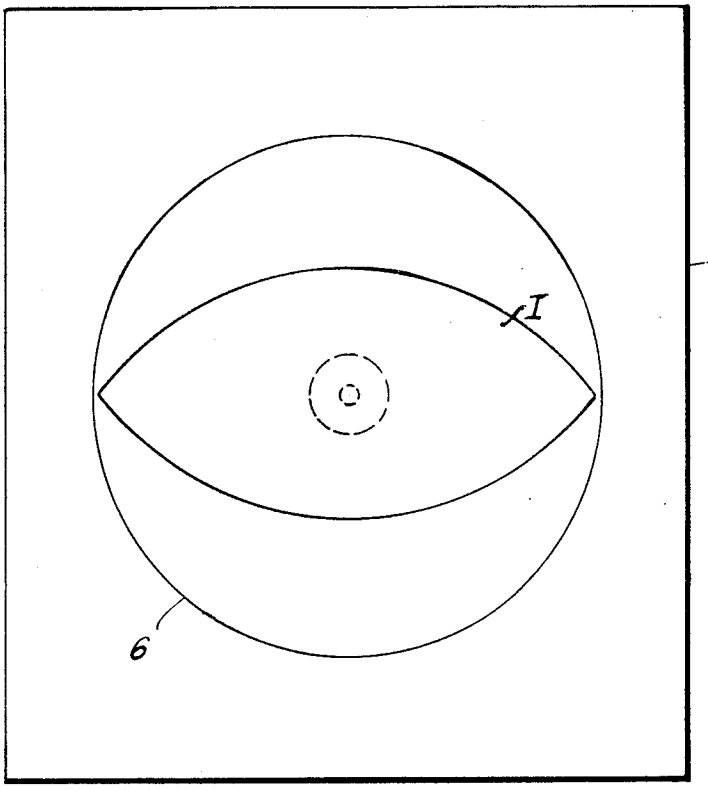


Fig. 2.

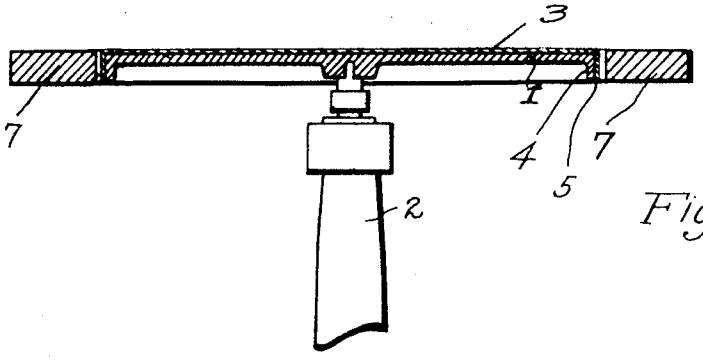


Fig. 1.

K. Drapak
Inventor
By: Marks & Clerk
Attys.

Patented Dec. 5, 1933 1,938,520

UNITED STATES PATENT OFFICE

1,938,520

GRINDING WHEEL

Karel Drapák, Rochlice, near Liberec, Czechoslovakia

Application May 26, 1930, Serial No. 455,800, and in Czechoslovakia June 6, 1929

2 Claims. (Cl. 51—209)

Grinding wheels, used till now for grinding of surfaces have the form of circular disks. There is a certain disadvantage as their grinding surface increases from the centre of the disk to the periphery and the greatest part of their surface thus becomes useless in the beginning of the grinding and therefore a faultless grinding of the surfaces of large disks becomes practically impossible.

For the removing of the dust it is inevitable to establish a suction arrangement, but this is very expensive and a perfect removing of the dust cannot be obtained. The consumption of grinding material is therefore very considerable.

These disadvantages are eliminated by the present invention, in which a wheel is arranged in such a manner, that its grinding surface decreases in proportion to the increasing circumferential speed. This fundamental idea is followed for example by a lens-shaped grinding wheel, as indicated in Figs. 1 and 2 on the accompanying drawing.

Fig. 1 is a vertical section and

Fig. 2 a bottom plan view of the device.

On the vertical spindle 2 of the machine, constructed for this purpose in the manner of a vertical milling tool, the grinding wheel I is secured. This grinding wheel has not the usual form of a circular disk, but is lens-shaped; the largest grinding surface is therefore in the centre and is decreasing gradually in the direction from the axis of rotation to the periphery where the circumferential speed of the wheel is the greatest.

The wheel is provided on its surface in usual manner with grinding means 3, for example with sandpaper, which is held tight against the perpendicular flange 4 by a steel band 5.

The grinding wheel I is provided in the circular opening 6 of a table 7. Owing to the fact that the grinding wheel is placed entirely within the opening 6 of the table 7, a downwardly directed air current is produced during the rotation of the biconvex disk or wheel I.

The advantages of the present invention are the following: The entire grinding surface is used and it is thus possible to completely grind the surface of wood or other substances in a clean and quick manner. The removing of dust takes place in a perfect manner, because the wheel itself sucks off automatically all the dust resulting from the grinding and the consumption of grinding means is very small.

I claim:

1. A grinding machine, comprising a table having a circular opening, an ovaloid grinding wheel mounted to rotate with the grinding surface in the top plane of said table, said grinding surface having its greatest dimension substantially equal to the diameter of said opening and decreasing gradually in the direction from the axis of rotation to the periphery of the circular opening, whereby the grinding action of the wheel is substantially constant from the axis to the periphery.

2. A grinding machine comprising a table having a circular opening and a grinding wheel having a grinding surface of ovaloid shape mounted to rotate in the top plane of said circular opening of said table, the edges of said surface being formed by circular arcs, whereby the grinding action of the wheel is substantially constant from the axis to the periphery and means is provided for the removal of the grinding dust.

KAREL DRAPÁK.