June 16, 1936. E. OFFENBACHER 2,044,442

GRINDING DISK WITH CORE OF WIRE NETTING

Filed Dec. 21, 1934

Fig. 2

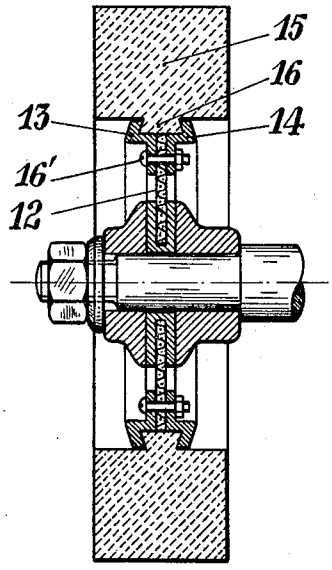
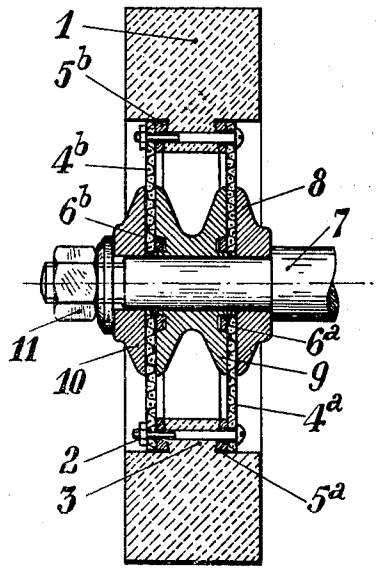


Fig. 1



Inventor:
Emil Offenbacher
By Jas. Laurie Attorney:

Patented June 16, 1936

2,044,442

UNITED STATES PATENT OFFICE

2,044,442

GRINDING DISK WITH CORE OF WIRE NETTING

Emil Offenbacher, Nuremberg, Germany

Application December 21, 1934, Serial No. 758,696
In Germany December 28, 1933

3 Claims. (Cl. 51—206)

In my Patent No. 1,977,952, I have described a cutting disk, especially intended for cutting stones and other hard material, whose characteristic is that the core or central part is of wire netting, whose periphery is enclosed in the abrading material. Practice has proved that this central part of wire netting also offers great advantages when applied to wider grinding disks intended for shaping stones and other hard material. As compared with solid disks of abrading material, such wide disks with a central part of wire netting, have the following advantages:

1. The disks revolve absolutely in the same plane, because of the tension to which the metallic core is subjected by the centrifugal force, and the wear takes place regularly, i. e. the disk remains perfectly round.

2. The covering in silicium carbide is utilized better owing to the elastic working pressure caused by the core or support of wire netting.

3. The total weight is less, hence economy in power.

4. The working cost is reduced. In fact the disks according to the invention have only an external crown of abrading matter, which can be almost completely utilized and replaced by a new one, after wear, whereas in solid disks, only about ⅓ of the material can be utilized, the remaining ⅔ having to be rejected, because of the diminished speed of the disk when the diameter is diminished by ⅓.

In the accompanying drawing two forms of embodiment of the object of the invention are shown in cross section.

Figure 1 shows an abrasive annulus supported upon a hub member by means of two disks of wire netting.

Figure 2 shows a modification in which the abrasive annulus is supported upon the hub by only one disk of wire netting.

In Fig. 1, 1 indicates the crown of abrading material. This crown or ring has a continuous internal rib 3 of trapezoidal cross-section, pierced by holes or slots. The wire netting used 4*a* and 4*b* has on its periphery two soldered on rings 5*a* and 5*b* also of tapered cross section, and in the centre, two centering rings 6*a* and 6*b* soldered on. The shaft 7 carries a hub 8 on which the core or support 4*a* of wire netting is mounted. Then the crown 1, the central part or core 9 and the external support 4*b* is fitted. Through the holes or slots of the rib 3 bolts or screws 2 are inserted to assemble the whole device and to make the complete disk absolutely rigid; then the hub 10 is placed and by means of the nut 11 the disk is fixed on the shaft 7. Centering is assured by the internal rings 6*a* and 6*b*, soldered on at a predetermined distance from the external strengthening rings 5*a* and 5*b*.

This embodiment, owing to the tapered shape of the strengthening rings 5*a* and 5*b* and to the fact that said rings are strongly pressed against the internal trapezoidal rim of the abrading crown, has the special advantage, besides those already mentioned, of preventing entirely that particles or pieces escape, for instance in case the crown of abrading material bursts. Any technical expert knows that this constitutes a considerable advantage as regards the safety of the workmen, especially in consideration of the fragility of bodies with a ceramic binder.

If the elastic action of the wire netting is discarded though it is very useful, also in case of bursting, disks of sheet iron may be used instead of said netting.

Referring to Fig. 2, the core or central part of the grinding disk is made of a single disk 12 of wire netting, provided with peripherical rim made of two parts 13—14. The parts 13—14 are both removable or one of them may be soldered on or otherwise secured on one side of the wire disk 12. The crown or ring 15 of abrading material has a continuous internal rib 16, trapezoidal in cross section, said rib being fastened and secured between both parts 13—14 by means of bolts and nuts 16 engaged through corresponding holes made in these parts 13—14. In this case, the internal rib of the annular ring 15 remains without any holes or slots.

Having now fully described my said invention, what I claim and desire to secure by Letters Patent, is:

1. A grinding disk for shaping stones and other hard material, comprising a wide crown or ring of abrading material, an internal continuous rib of trapezoidal cross section on this ring, a core made of two parallel disks of wire netting, a ring of tapered cross section soldered on the internal side of the periphery of each of said disks, holes made through said rings and said rib, and bolts through said holes for rigidly assembling the crown of abrading material to the disks of wire netting.

2. A grinding disk for shaping stones and other hard material, comprising a wide crown or ring of abrading material, an internal continuous rib of trapezoidal cross section on this ring, a core made of two parallel disks of wire netting, means whereby said disks of wire netting may be rigidly assembled with said internal rib, a hub made

of three parts on the shaft, one of these parts being connected to the external side of one disk of wire netting, another being connected to the outer side of the other disk of wire netting, the central part of the hub being provided at each side with a central circular slot, and two centering rings soldered on the central part of the internal side of each disk of wire netting, the rings engaging the said slots for centering purposes.

3. A grinding disk for shaping stones and other hard material, comprising a wide crown or ring of abrading material, an internal continuous rib of trapezoidal cross section on this ring or crown, a core made of a disk of wire netting, two rims of tapered cross section embracing the internal rib of the abrading disk, and means whereby said rings are removably connected to the periphery of the disk of wire netting.

EMIL OFFENBACHER.