May 3, 1932. A. J. DOERMANN 1,856,321

ABRASIVE DISK

Filed March 30, 1931

Fig. 1.

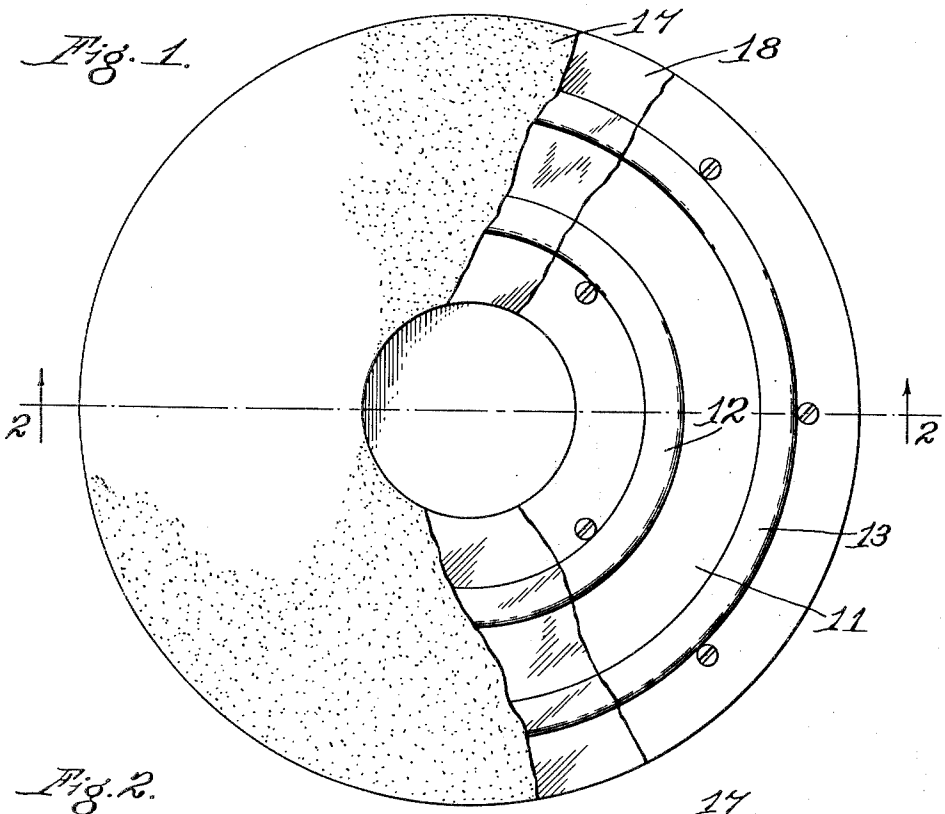


Fig. 2.

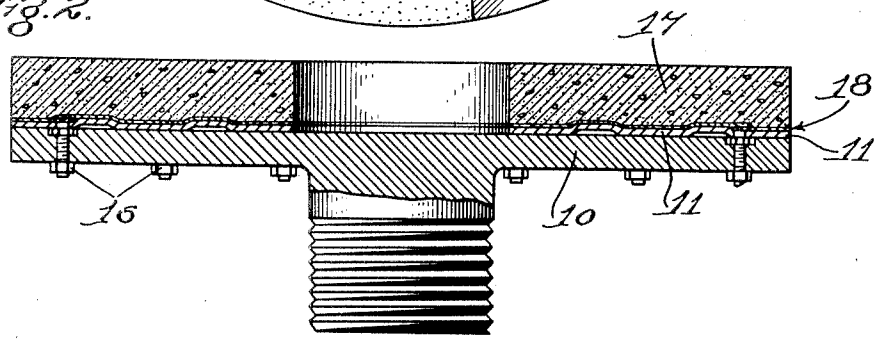
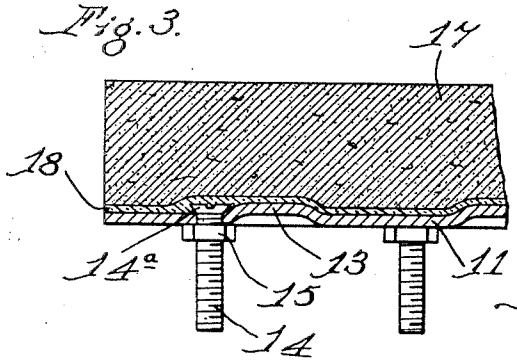


Fig. 3.



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UNITED STATES PATENT OFFICE

ALBERT J. DOERMANN, OF CHICAGO, ILLINOIS, ASSIGNOR TO TITAN ABRASIVES CO., INC., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS

ABRASIVE DISK

Application filed March 30, 1931. Serial No. 526,479.

This invention relates to improvements in abrasive disks, grinding disks, and the like, and, more especially, an abrasive disk mounted on a steel back. Among the features of my invention is the provision of a device of this kind using a very thin preferably pressed sheet metal back. I contemplate the formation of the back out of sheet metal of relatively thin gage, for example, 10, 14 or 16 gage sheet steel so that the material will be relatively inexpensive. The back can also be formed with slight labor, for example, by one or more pressing or punching operations. It is contemplated that the cost, therefore, of producing such a thin pressed sheet metal back will be so low that when the abrasive is used up, the back can be discarded. This will save the expense of boxing, handling and shipping backs to have them resurfaced with an abrasive.

Among the features of my invention is the provision of such a steel back that is strong and durable. Improved means are provided for mounting fastening devices on the back and for protecting the heads thereof. Another feature of the invention is the provision of raised rings or corrugations in the back, thereby protecting the heads of fastening devices and adding rigidity and stiffness to the back member.

Other features and advantages of my invention will appear more fully as I proceed with my specification.

In that form of device embodying the features of my invention shown in the accompanying drawings—

Figure 1 is a view in front elevation with parts broken away; Fig. 2 is a central sectional view; and Fig. 3 is a fragmentary view similar to Fig. 2 on an enlarged scale.

As shown in the drawings, 10 may indicate the face plate, steel disk or other similar member of a disk grinder or other machine. It is to be understood that 10 indicates the rotatable member upon which abrasive disks of the kind referred to are customarily mounted.

Numeral 11 indicates the metal back of the abrasive disk, here shown as made of relatively thin pressed sheet steel. This back is provided on its face with two raised rings 12 and 13 concentric with the center thereof. As here shown, these raised rings are somewhat wider than they are high and are flat on top.

The back is provided with a plurality of holes adjacent said rings for the accommodation of fastening devices. Such fastening devices are here shown as comprising threaded bolts 14 extending through said holes, said bolts having heads 14^a adjacent the face of the back. As here shown, the heads 14^a are lower than the height of the rings 12 and 13. By means of this construction, said rings serve as a protection to the heads. It will be noted that the heads are close to the rings and do not project above them. With this construction, it will be seen that when the abrasive is nearly used up, the tops of the rings 12 and 13 will be exposed as soon as the heads 14^a. Any work then being applied to the disk will, therefore, contact with the rings 12 and 13 before it will be struck by the heads 14^a of the fastening devices. This will protect the work from injury by such heads and will also indicate to a user that the abrasive wheel needs to be renewed. The fastening devices 14 may be held in place on the back 11 by lock nuts 15. It is to be understood that the fastening devices 14 are adapted for the attachment of the abrasive disk to the face plate 10 in any suitable manner. For example, the bolts 14 may extend through holes in the face plate 10 and be engaged by nuts 16 at the back of said plate.

Numeral 17 indicates a layer of abrasive on the back fastened in any suitable manner as, for example, by the layer of cement 18.

While I have shown and described certain embodiments of my invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of my invention as disclosed in the appended claims, in which it is my intention to claim all novelty inherent in my invention as broadly as permissible, in view of the prior art.

What I regard as new, and desire to secure by Letters Patent, is:

1. An abrasive disk, including; a relatively thin metal back with a raised ring on the face thereof concentric with its center, said back being provided with a plurality of holes; fastening devices extending through said holes, said fastening devices having heads adjacent the face of said back, said heads not projecting substantially above the top of said raised ring; and a layer of abrasive on the face of said metal back.

2. An abrasive disk, including; a relatively thin pressed sheet metal back with a raised ring on the face thereof concentric with its center, said back being provided with a plurality of holes; fastening devices extending through said holes, said fastening devices having heads adjacent the face of said back, said heads not projecting substantially above the top of said raised ring; and a layer of abrasive on the face of said metal back.

3. An abrasive disk, including; a relatively thin metal back with a raised ring on the face thereof concentric with its center, said back being provided with a plurality of holes adjacent said ring; fastening devices extending through said holes, said fastening devices having heads adjacent the face of said back, said heads not projecting substantially above the top of said raised ring; and a layer of abrasive on the face of said metal back.

4. An abrasive disk, including; a relatively thin pressed sheet metal back with a raised ring on the face thereof concentric with its center, said back being provided with a plurality of holes adjacent said ring; fastening devices extending through said holes, said fastening devices having heads adjacent the face of said back, said heads not projecting substantially above the top of said raised ring; and a layer of abrasive on the face of said metal back.

In witness whereof I have hereunto set my hand this 28th day of March, 1931.

ALBERT J. DOERMANN.