

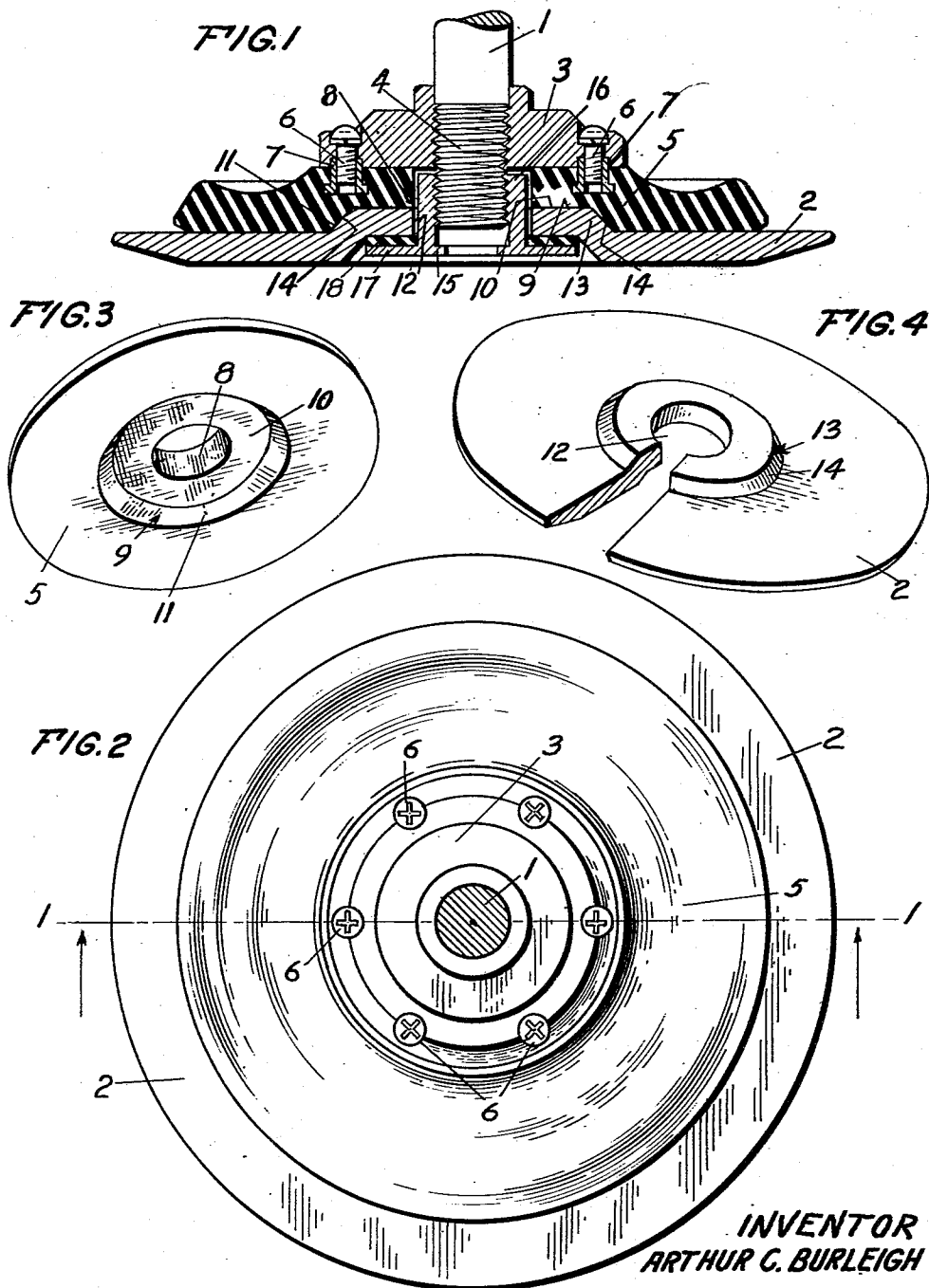
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A. C. BURLEIGH

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HOLDER FOR ABRASIVE DISK

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INVENTOR
ARTHUR C. BURLEIGH
BY Louis C. Smith
ATTORNEY

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HOLDER FOR ABRASIVE DISK

Arthur C. Burleigh, Wellesley, Mass.

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1 Claim. (Cl. 51—168)

This invention relates to a holder for abrasive disks such as are used in surfacing machines.

It appears to be an accepted fact that a surfacing machine in which the abrasive element is coupled with the driving shaft through a resilient or cushioning coupling gives more satisfactory results than a surfacing machine in which the abrasive element is rigidly attached to the driving shaft.

It is an object of the present invention to provide a novel resilient or cushioning coupling construction for connecting the abrasive element to the drive shaft, which coupling connection is simple in construction and inexpensive to manufacture.

In the drawings wherein I have illustrated a selected embodiment of my invention:

Fig. 1 is a section on the line 1—1, Fig. 2;

Fig. 2 is a top plan view of Fig. 1;

Fig. 3 is an under side perspective view of the rubber pad; and

Fig. 4 is a perspective view of the abrasive disk with a portion broken out.

In the drawings, 1 indicates the drive shaft of a surfacing machine and 2 is the abrasive disk, which is herein shown as a rigid disk.

The shaft 1 has fast thereon a collar 3, said collar in the drawing being shown as being screw threaded to the shaft, the end 4 of the shaft projecting below the collar.

Secured to the collar 3 is a backing pad 5 of rubber or some other similar resilient material, said pad being connected to the collar by means of screws 6 which extend through the collar and are anchored in nuts 7 that are embedded in the rubber pad element 5.

The pad element has an enlarged central hole or opening 8 which is coaxial with the shaft, said opening being considerably larger than the shaft.

The pad 5 is formed on its under side with a circular recess 9 which is coaxial with the shaft, said recess presenting the flat bottom surface 10 and the annular side wall 11 which is shown as slightly inclined.

The abrasive disk also has a central opening 12 which registers with the opening 8 in the pad and is considerably larger than the shaft 1. The central portion of the abrasive disk is offset relative to the body thereof, thereby to form a raised hub portion 13. This raised hub portion has a size and shape corresponding to that of the recess 9 so that when the abrasive disk and pad are assembled as shown in Fig. 1 the raised hub portion 13 fills the recess 9 of the pad and the side wall 14 of the

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hub contacts the wall 11 of the recess throughout its extent.

The abrasive disk is held in its operative position shown in Fig. 1 by means of a clamping element 15 which is shown as having a hub portion 16 screw threaded to the end 4 of the drive shaft and a laterally extending clamping flange portion 17 which underlies the hub portion 13 of the abrasive disk. A washer 18 of rubber or other suitable material is interposed between the flange 17 and the hub portion 13.

The size of the openings 8 and 12 in the pad and abrasive disk is such that when the parts are assembled as shown, the hub 16 of the clamping element is spaced from the walls of said openings.

With this construction the torque or driving force for rotating the abrasive disk is transmitted from the shaft 1 to the resilient backing pad 5 and then through the side walls 11 and 14 of the pad 5 and abrasive disk as well as through the faces of the pad and washer 18 which engage the top and bottom surfaces of the abrasive disk.

With this arrangement the abrasive disk is free to yield slightly in a lateral direction and also it may have a slight rocking movement whenever said disk engages a hard or uneven spot in the surface being treated, thereby increasing the efficiency of the machine in properly finishing a surface.

It will be noted that the only parts of the holder assembly with which the abrasive disk 2 contacts are the resilient rubber pad 5 and the resilient washer 18. The size of the apertures 12 and 14 in the abrasive disk and the pad is sufficient so that there is no direct contact between the clamping element 15 and the abrasive disk.

I claim:

A holder for an abrasive disk comprising a drive shaft, a collar fast thereon through which the shaft extends with the end portion of the shaft projecting below the collar, a backing pad of resilient material secured to the collar and having an enlarged central opening through which the projecting end of the shaft extends, said backing pad having a circular recess in its lower face which is concentric with the shaft and which presents a flat bottom wall and a circular side wall, a rigid abrasive disk having a raised central hub portion and an opening therethrough registering with the opening through the resilient pad, said hub portion having a flat top surface and a circular wall and being of a size and shape to fit accurately the recess in the under side of the pad, a clamping element presenting a hub portion screwed to the lower end of the drive shaft and occupying the openings in the backing pad and abrasive disk and also presenting a laterally extending clamping flange which lies beneath the raised portion of the abrasive disk, and a washer of resilient material interposed between the clamping member and the under face of the raised hub portion of the abrasive disk, the diameter of the clamping element being smaller than the diameter of the openings through the pad and abrasive disk whereby said abrasive disk has contacts with the resilient pad and resilient washer only and the entire torque for rotating said abrasive disk is transmitted thereto from the shaft entirely through the resilient backing pad and the resilient washer.

No references cited.