Jan. 14, 1930. F. O. HOAGLAND 1,743,604

ADAPTER FOR SEGMENTAL ABRASIVE WHEELS

Filed Aug. 5, 1926

Fig. 2.

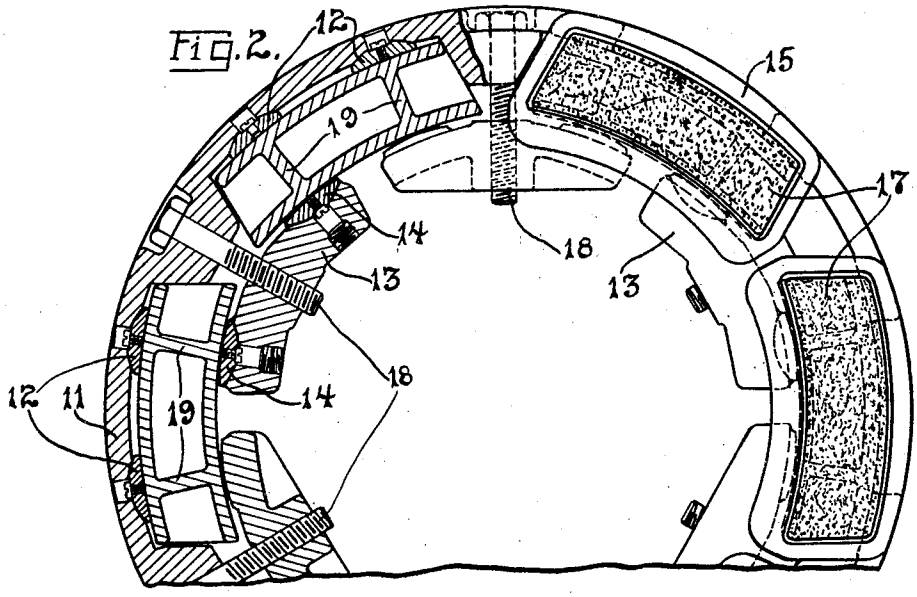


Fig. 1.

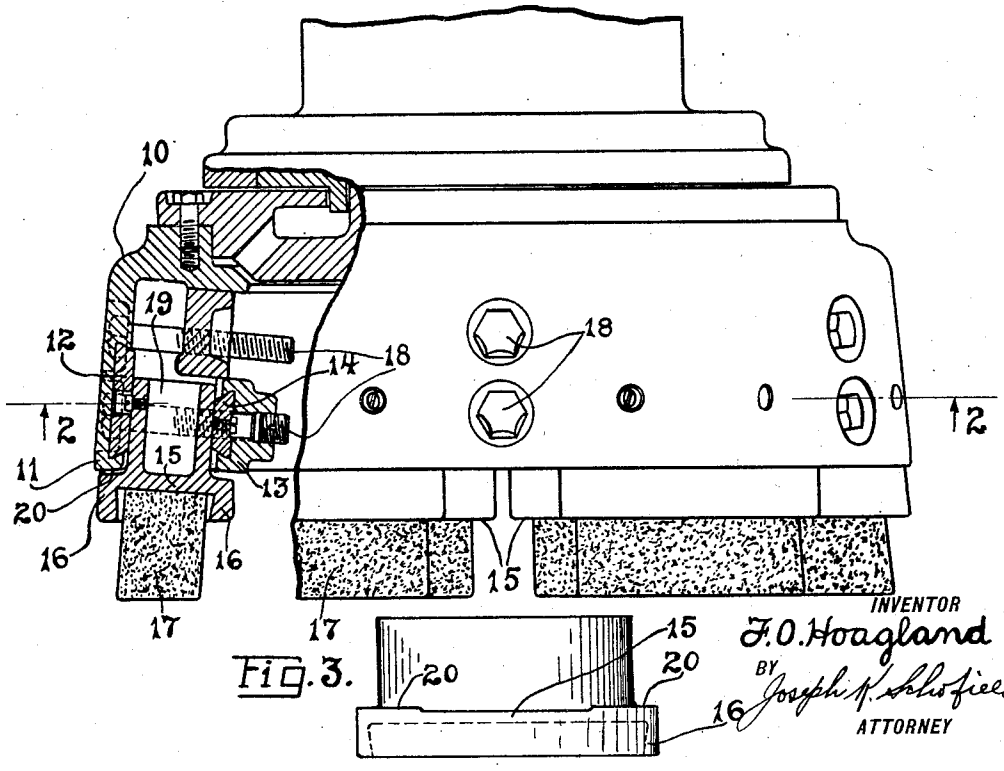


Fig. 3.

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UNITED STATES PATENT OFFICE

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ADAPTER FOR SEGMENTAL ABRASIVE WHEELS

Application filed August 5, 1926. Serial No. 127,323.

This invention relates to abrasive wheels and particularly to a wheel or chuck for supporting and rotatably mounting short abrasive segments arranged in a circular series.

An object of the present invention is to provide an adapter member having means for retaining partly used abrasive segments that have become greatly reduced in height and adapting them to be further used until reduced to a very short height.

Another object of the invention is to provide an adapter member for holding partly used abrasive segments which may be inserted within and retained within a chuck for abrasive segments in the same manner and by the same means as the original abrasive segments.

With these and other objects in view, my invention consists in the features of construction and operation set forth in the following specification and illustrated in the accompanying drawing.

In the accompanying drawing annexed hereto and forming a part of this specification, I have shown my invention embodied in a chuck for abrasive segments of the type shown in my copending application Serial No. 127,322 filed August 5, 1926, but it is to be understood that the invention can be otherwise embodied and that the drawing is not to be construed as defining or limiting the scope of the invention, the claims appended to this specification being relied upon for that purpose.

In the drawing:

Figure 1 is a side elevation, partly broken away, and showing one of the adapter members in cross section.

Fig. 2 is a horizontal sectional view taken upon the line 2—2 of Fig. 1 and looking in the direction of the arrows, and

Fig. 3 is a side elevation of one of the adapter members for the abrasive segments.

In the above mentioned drawing I have shown but one embodiment of the invention which is now deemed preferable, but it is to be understood that changes and modifications may be made within the scope of the appended claims without departing from the spirit of the invention.

Briefly and in its broadest aspect, my invention comprises the following principal parts: First, a chuck similar in every respect to that disclosed in the above referred to application; and second, adapter members having their upper portions secured between bearing members provided in the chuck and having abrasive segments secured within flanges provided on the lower portions of the adapter members.

Referring more in detail to the figures of the drawing, I show a chuck comprising a ring member 10 having an integral depending flange 11 similar to that shown and described in my copending application above mentioned. Bearing members 12 similar to those in the above referred to application are provided within the internal surface of this depending flange 11 and clamping members or strips 13 also having bearing members 14 therein are adapted to engage the inner surface of the adapter members 15.

The adapter members 15 comprise a single integral body portion, the lower portions of which are formed with flanges 16 between which a partially worn abrasive segment 17 may be secured, as by means of cement, sulphur, lead or other suitable retaining or adhesive member. The upper portions of the adapters 15 may be and preferably are arcuate in form, the outer surface of which is curved to correspond approximately to the radius of curvature of the internal surface of the depending flange 11. The outer and inner walls of these portions of the adapter are concentric and cylindrical. As shown clearly in Fig. 2, the bearing members 12, which are adjustable similarly to those in the above referred to application, are adapted to contact with portions of this outer cylindrical or convex surface of the adapter members 15 adjacent their ends. Within the adapter members 15 are the clamping members or strips 13 held in position and adjustable to clamp the adapter members 15 by means of screws 18 passing through the integral flange 11. The bearing members 14 are provided in these clamping strips 13 so positioned that they engage adjacent ends of the concave cylindrical surfaces of adjacent adapter members 15 substantially

opposite corresponding bearing members 12 on the integral flange 11.

The adapter members 15 are provided with reinforcing ribs 19 between the inner and outer arcuate portions, these ribs 19 being disposed so that they will extend between the bearing members 12 and 14 on the flange 11 and clamping strips 13 respectively.

At opposite ends of the adapter members 15 are suitably finished pad surfaces 20. These, as shown in Fig. 1, are disposed on the outer side of the adapter members when in operative position. These pad surfaces 20, when the adapter members 15 are in operative position, engage the end surface of the integral flange 11. In this manner the thrust of the work against the segments 17 is taken up positively by direct contact between the members forming the chuck.

In the use of abrasive wheels or chucks of this type, the segments become worn to such an extent that they cannot be satisfactorily retained within the chuck between the clamping members comprising the bearing members 12 and clamping strips 13 shown. In order to make use of these partially worn abrasive segments, such as shown at 17, the segments are cemented by sulphur or other material within the adapter members 15 between the flanges 16 on their lower portions. The upper portions are, as shown clearly in Fig. 1, elongated sufficiently to engage a substantial portion of the bearing members 12 on the integral flange 11 and also adapted to contact with the bearing members 14 on the clamping strips 13. With the abrasive segments 17 secured as shown, they may be used until worn to a very short height, thus obtaining a greater amount of use out of the same dimensions of abrasive blocks.

What I claim is:

1. An abrasive wheel comprising in combination, a ring member having an integral flange, adjustable bearing members positioned within said flange, adapter members having abrasive segments secured therein, and clamping means to retain said adapter member in position against the bearing members in said flange.

2. An abrasive wheel comprising in combination, a ring member having an integral flange, adjustable bearing members positioned within said flange, adapter members having abrasive segments secured therein, clamping members having adjustable bearing members therein disposed oppositely to said first mentioned bearing members when in operative position, and means to retain said clamping members in position.

3. An adapter for abrasive segments comprising a member having retaining flanges on its lower portions within which an abrasive segment may be secured and concentric external and internal cylindrical surfaces on its upper portions adapted to be secured within a chuck.

4. An adapter for abrasive segments comprising a member having retaining flanges on its lower portions, an abrasive segment secured within said flanges, externally and internally curved surfaces on its upper portions adapted to engage the clamping means within a chuck, and pad surfaces on the member adapted to contact with a surface of the chuck to resist the pressure of the work during operation.

In testimony whereof, I hereto affix my signature.

FRANK O. HOAGLAND.