Nov. 18, 1958 A. RASKE 2,860,458

ABRADING OR GRINDING WHEEL

Filed Aug. 16, 1956

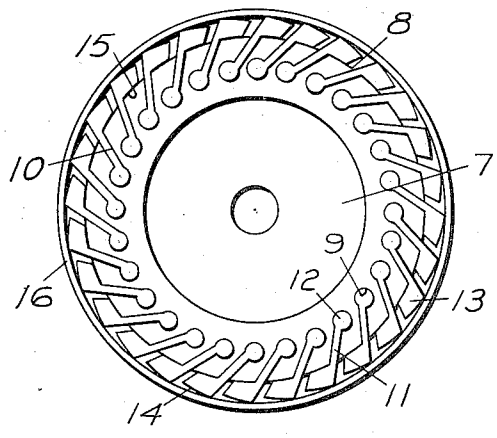


FIG 1

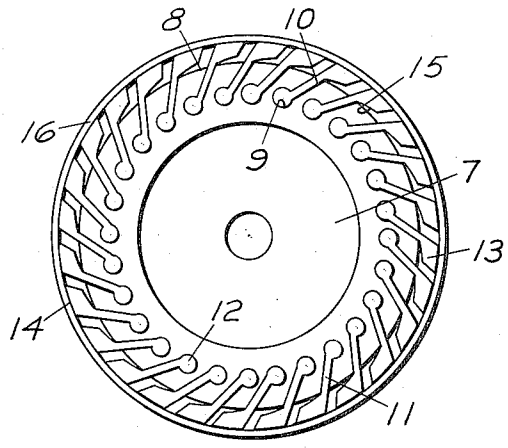


FIG 2

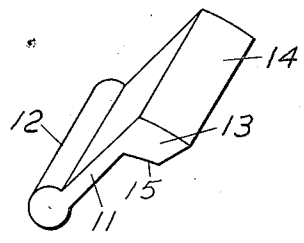


FIG 3

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United States Patent Office 2,860,458 Patented Nov. 18, 1958

2,860,458

ABRADING OR GRINDING WHEEL

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Application August 16, 1956, Serial No. 604,400

6 Claims. (Cl. 51—191)

My invention relates to a new and useful improvement in an abrading or grinding wheel in which a band of abrasive or grinding material is rotated by a body which it embraces.

It is an object of the present invention to provide a wheel of this class which will be simple in structure, economical of manufacture, durable, compact and highly efficient in use.

Another object of the invention is the provision of a wheel of this class embodying a rigid core having slots or notches for the reception of flexible band engaging members which serve to engage the inner surface of the encircling band and flex outwardly during rotation to securely fix the band in position relative to the core.

Another object of the invention is the provision in a wheel of this class of flexible presser members mounted in the slots of a rotatable rigid core so that the presser members may be removed and replaced when desired.

Other objects will appear hereinafter.

It is recognized that various modifications and changes may be made in the detail of structure illustrated and it is intended that the present disclosure shall be considered to be but a preferred embodiment.

Forming a part of this application are drawings in which:

Fig. 1 is a side elevational view of the invention showing the flexible members in position when the wheel is stationary;

Fig. 2 is an elevational view of the invention showing the flexible members in operative position during rotation of the wheel;

Fig. 3 is a perspective view of the removable flexible presser members.

As shown in the drawings, the invention comprises a rigid, preferably metallic, core **7**, having formed inwardly from the periphery **8** a plurality of axially directed spaced apart passages **9** arranged in a circumferential row. A chordally directed slot **10** is formed in the core **7** adjacent each of the passages **9** and opens at one end into the adjacent passage **9** and at the other end breaks outwardly through the periphery **8**.

An independent and separate flexible plate **11** is provided at one end with a bead **12** conforming in size and shape to the passage **9** so that this bead may be inserted into this passage, the plate **11** engaging in the slot **10**. Formed on the outer end of each of these plates **11**, which are made of flexible material, is an individual flexible head **13** extending the width of the plate and having its outer surface **14** curved.

The inner surface **15** of the head **13** is also curved so that when in the position shown in Fig. 1 the inner surface will lie and conform to the part of the periphery engaged.

Encircling these heads is a band **16** of an abrasive or grinding material. The band fits in snug relation over the heads. When the wheel is rotated the heads will swing outwardly, as shown in Fig. 2, this outward swinging being effected through a flexing of the material of which the wheel is made so that the band **16** is stretched

taut and held in fixed relation relative to the core **7** while the grinding operation is performed.

It is believed obvious that the band of abrasive or grinding material may be easily removed and replaced. Likewise, should any of the heads **13** become worn or damaged they may also be replaced by sliding the plate **11** axially out of the slot in which engaged. The bead **12** prevents radial outward movement of the plate **11** while this plate is engaged in the slot.

Experience has shown that a grinding or abrasive wheel of this type is one which is highly efficient in use and quite economical in its operation.

What I claim is:

1. A grinding or abrasive wheel of the class described, comprising: a rigid rotatable wheel having inwardly from the periphery thereof a plurality of axially directed passages formed therethrough and arranged circumferentially in spaced relation and provided with chordally directed slots extending outwardly from the passages and opening through the periphery, said slots being of less thickness than the diameter of said passages; a flexible plate engageable in each of said slots; a bead on one end of each of said plates conforming in shape and size to the said passages and engageable therein for preventing radial outward movement of the plates after insertion into the slots; an individual presser head on the opposite end of each of said plates and flexible relative thereto; and, an encircling band of abrasive or grinding material embracing said heads.

2. A grinding or abrasive wheel of the class described, comprising: a rigid rotatable wheel having inwardly from the periphery thereof a plurality of axially directed passages formed therethrough and arranged circumferentially in spaced relation and provided with chordally directed slots extending outwardly from the passages and opening through the periphery, said slots being of less thickness than the diameter of said passages; a flexible plate engageable in each of said slots; a bead on one end of each of said plates conforming in shape and size to the said passages and engageable therein for preventing radial outward movement of the plates after insertion into the slots; an individual presser head on the opposite end of each of said plates and flexible relative thereto; an encircling band of abrasive or grinding material embracing said heads; and, the adjacent faces of adjacent heads being spaced apart.

3. A grinding or abrasive wheel of the class described, comprising: a rigid rotatable wheel having inwardly from the periphery thereof a plurality of axially directed passages formed therethrough and arranged circumferentially in spaced relation and provided with chordally directed slots extending outwardly from the passages and opening through the periphery, said slots being of less thickness than the diameter of said passages; a flexible plate engageable in each of said slots; a bead on one end of each of said plates conforming in shape and size to the said passages and engageable therein for preventing radial outward movement of the plates after insertion into the slots; an individual presser head on the opposite end of each of said plates and flexible relative thereto; an encircling band of abrasive or grinding material embracing said heads; the adjacent faces of adjacent heads being spaced apart; and, said heads being flexible outwardly upon rotation of said wheel for firmly engaging said encircling band.

4. A grinding or abrasive wheel of the class described, comprising: a rigid rotatable wheel having inwardly from the periphery thereof a plurality of axially directed passages formed therethrough and arranged circumferentially in spaced relation and provided with chordally directed slots extending outwardly from the passages and opening through the periphery, said slots being of less thickness

than the diameter of said passages; a flexible plate engageable in each of said slots; a bead on one end of each of said plates conforming in shape and size to the said passages and engageable therein for preventing radial outward movement of the plates after insertion into the slots; an individual presser head on the opposite end of each of said plates and flexible relative thereto; an encircling band of abrasive or grinding material embracing said heads; the adjacent faces of adjacent heads being spaced apart; said heads being flexible outwardly upon rotation of said wheel for firmly engaging said encircling band; and, the outer faces of said heads being struck on a radius equal to the radius of the circle determined by said heads when flexed outwardly.

5. A grinding or abrasive wheel of the class described, comprising: a rigid rotatable wheel having inwardly from the periphery thereof a plurality of axially directed passages formed therethrough and arranged circumferentially in spaced relation and provided with chordally directed slots extending outwardly from the passages and opening through the periphery, said slots being of less thickness than the diameter of said passages; a flexible plate engageable in each of said slots; a bead on one end of each of said plates conforming in shape and size to the said passages and engageable therein for preventing radial outward movement of the plates after insertion into the slots; an inidvidual presser head on the opposite end of each of said plates and being flexible relative thereto; an encircling band of abrasive or grinding material embracing said heads; the adjacent faces of adjacent heads being spaced apart; and, the outer faces of said heads being curved.

6. A grinding wheel of the class described, comprising: a rigid rotatable circular core having inwardly from the periphery thereof a plurality of axially directed passages formed therethrough and arranged circumferentially in spaced relation and provided with chordally directed slots extending outwardly from the passages and opening through the periphery thereof; said slots being of less thickness than the diameter of said passages; a flexible plate engageable in each of said slots; a bead on one end of each of said plates conforming in shape and size to said passages and engageable therein for preventing radial outward movement of the plates after insertion into the slots; an individual presser head on the opposite end of each of said plates and flexible relative thereto; an encircling band of grinding material embracing said heads; the adjacent faces of adjacent heads being spaced apart; said heads being flexible outwardly upon rotation of said wheel in one direction to form a substantially continuous circular surface for firmly engaging said encircling band; the outer faces of said heads being struck on a radius equal to the radius of the circle determined by said heads when flexed outwardly; and, the inner faces of said heads being struck on a radius equal to the radius of said rigid core, whereby, said heads will rest on the outer periphery of said core when the wheel is at rest.

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