June 10, 1952 W. STRAYER 2,599,952

GRINDING WHEEL BLOWER

Filed June 4, 1951

Fig. 1.

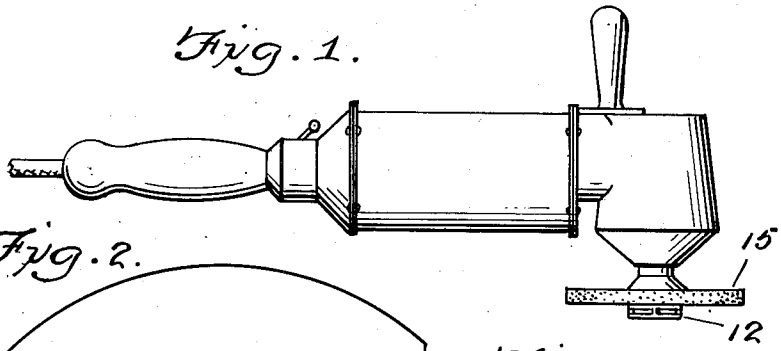


Fig. 2.

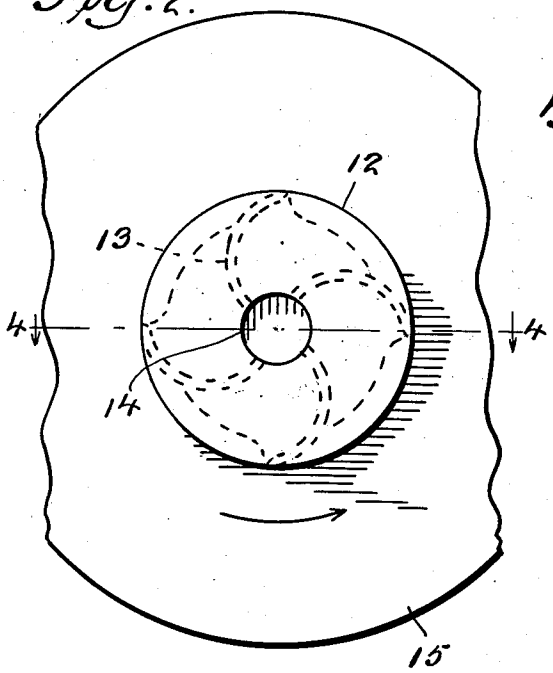
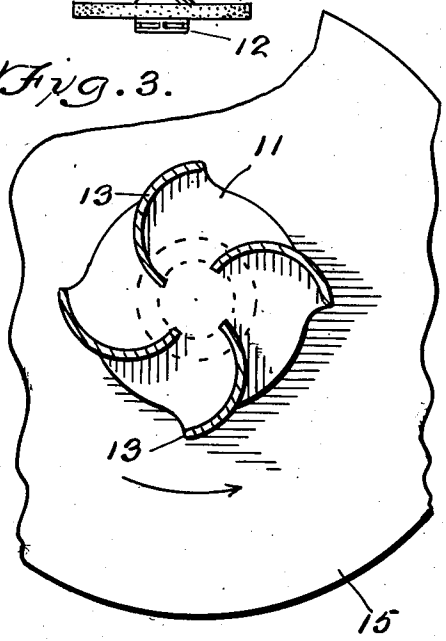


Fig. 3.



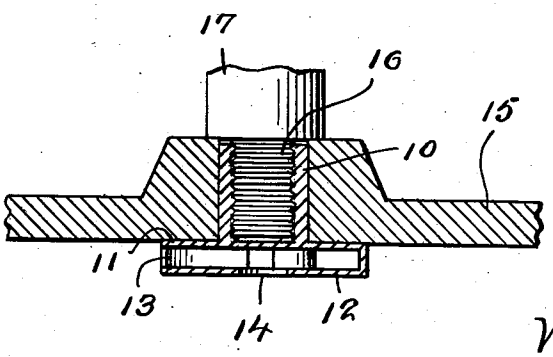


Fig. 4.

INVENTOR.
Wilfred Strayer
BY Victor J. Evans & Co.
ATTORNEYS

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GRINDING WHEEL BLOWER

Wilfred Strayer, Germantown, Ohio

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1 Claim. (Cl. 51—266)

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This invention relates to grinding wheels particularly of the portable type where a grinding wheel is mounted on a head adapted to be held by hand, and in particular a blower or fan formed with fan blades incorporated in the head of a cap screw or bushing for securing a grinding wheel on the end of a spindle wherein as the grinding wheel rotates the blades blow air across the grinding wheel, blowing away dust resulting from grinding and cooling the wheel.

The purpose of this invention is to provide means for continuously cooling a grinding wheel by providing a fan on the wheel that operates continuously with the operation of the grinding wheel.

Various methods have been used for flowing liquids over grinding wheels to facilitate cooling and other types of blowers have been employed for blowing grinding dust away from the grinding operation and also for cooling the grinding wheel, however, such devices have been provided as auxiliary attachments and attachments of this type interfere with freedom of grinding around the wheel. With this thought in mind this invention contemplates a device wherein a blower is incorporated in the mounting elements of the grinding wheel wherein a continuous draft of air is circulated over the entire surface of one side of the wheel.

Using the type of attachments where air and other fluids are directed against the grinding wheel the air or liquid is applied at one point only whereas with the device of this invention the draft of air is spread continuously over the entire area of the grinding wheel.

The object of this invention is, therefore, to provide means for incorporating air circulating means in a grinding wheel mounting whereby a continuous stream of air is circulated over the surface of the grinding wheel.

Another object of the invention is to provide a blower in combination with a grinding wheel whereby the blower rotates with the wheel, in which the blower may be incorporated in wheels now in use without changing the design or construction thereof.

A further object of the invention is to provide a grinding wheel blower that is incorporated in the mounting of the wheel in which the blower is of a simple and economical construction.

With these and other objects and advantages in view the invention embodies a bushing threaded on the stud at the end of a spindle of a grinding wheel mounting in which fan blades

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are positioned between parallel plates forming a head on the end of the bushing.

Other features and advantages of the invention will appear from the following description taken in connection with the drawings wherein:

Figure 1 is a side elevational view illustrating the improved grinding wheel mounting and showing the position of the blower in relation to the grinding wheel.

Figure 2 is a view looking upwardly toward the under surface of the blower and wheel with parts of the wheel broken away.

Figure 3 is a similar view with the lower plate of the blower broken away and with the fan blades shown in section.

Figure 4 is a cross section through the grinding wheel mounting taken on line 4—4 of Figure 2 and showing the parts on an enlarged scale.

Referring now to the drawings wherein like reference characters denote corresponding parts the improved grinding wheel blower of this invention includes an internally threaded bushing 10 having a head formed with an inner plate 11 and an outer plate 12 and a plurality of vanes or fan blades 13 positioned between the inner and outer plates.

As illustrated in Figure 4 the lower plate 12 is provided with a centrally disposed opening 14 and as the grinding wheel rotates air is drawn inwardly through the opening 14 and discharged from the ends of the blades and through the peripheral wall of the head formed by the blades and plates 11 and 12.

With the parts arranged in this manner the grinding wheel, as indicated by the numeral 15 is clamped on a threaded stud 16 on the end of a spindle 17 by the bushing whereby the blower mounting provides means for securing the grinding wheel on the spindle.

It will be appreciated that although this is a typical mounting for grinding wheels the blower may also be incorporated in different forms of mountings and particularly where a grinding wheel is secured on the end of a spindle with a cap screw wherein the plates 11 and 12 and blades 13 may form the head of the cap screw.

With the parts arranged as shown in the drawing rotation of the grinding wheel causes air to be drawn inwardly through the opening 14 and circulated over the lower surface of the wheel whereby dust, grit and the like are blown from the grinding area and at the same time the continuous stream of air spread over the entire surface of the wheel keeps the wheel at a comparatively low temperature and with the wheel

operating at a low temperature the granular particles do not work loose so that the life of the wheel is extended.

It will be understood that other modifications may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

In a grinding wheel, the combination which comprises a spindle having a threaded stud on the end thereof, a bushing threaded on the said stud and having spaced parallel plates with fan blades between the plates and with an opening through the center of the outer plate positioned in a plane perpendicular to the axis of the bushing forming a head for the bushing, and a grinding wheel positioned on the bushing and clamped between the said head and end of the spindle.

WILFRED STRAYER.

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