March 1, 1927. 1,619,442

J. STEINER

POLISHING WHEEL

Filed Dec. 16, 1924 2 Sheets-Sheet 1

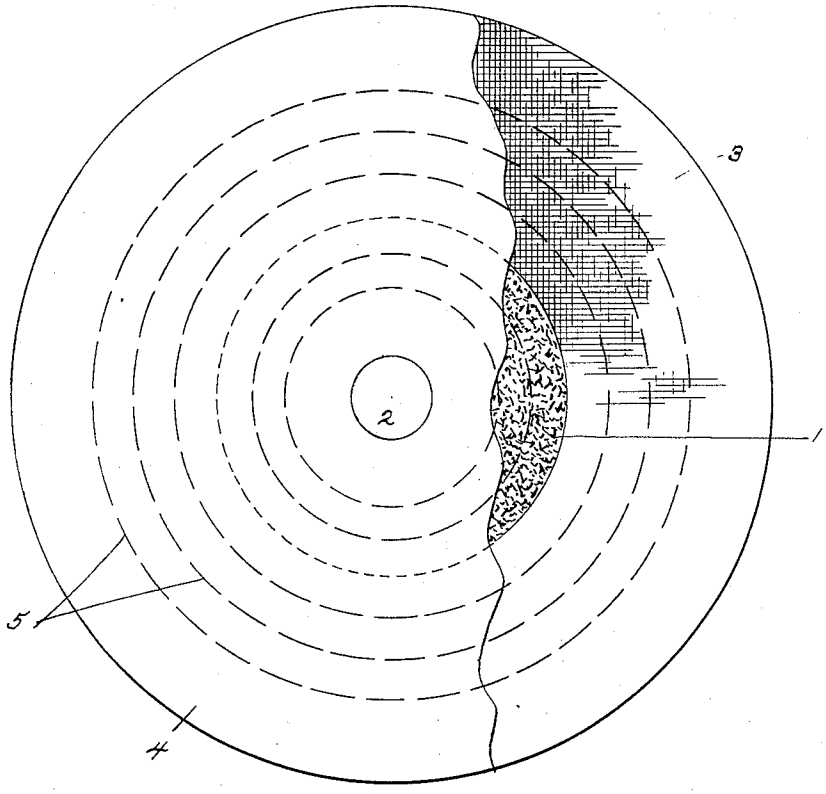


Fig 1

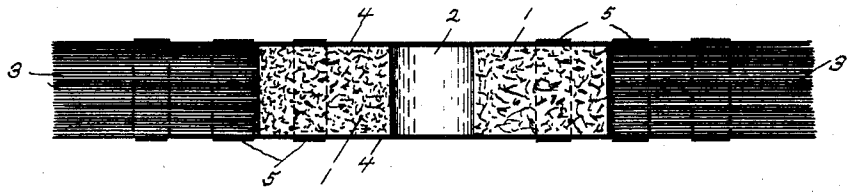


Fig 2

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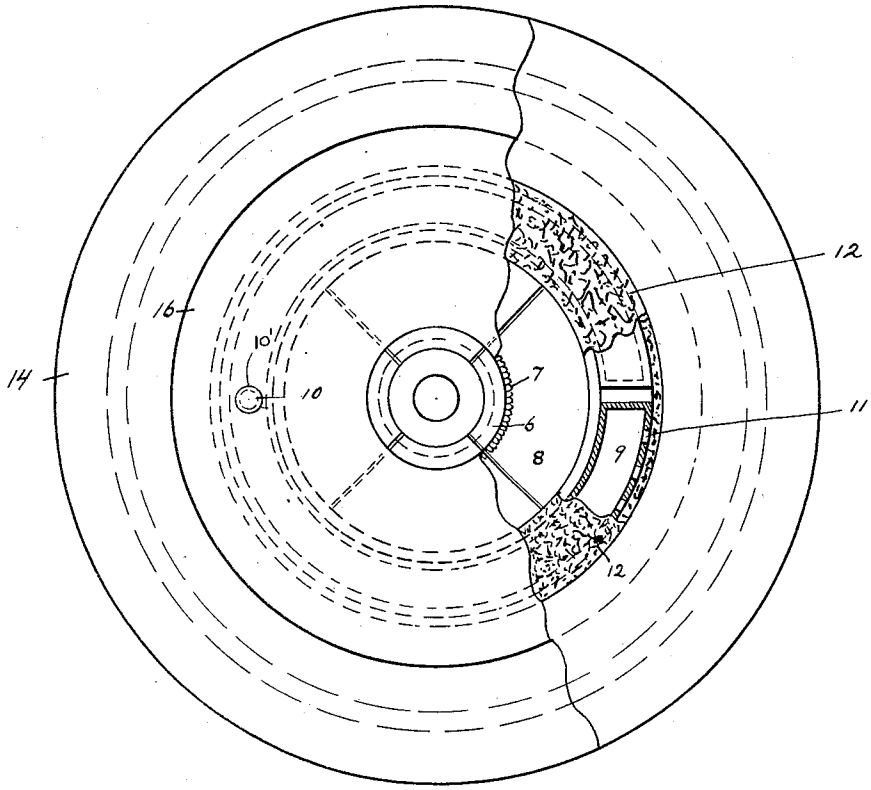


Fig 3

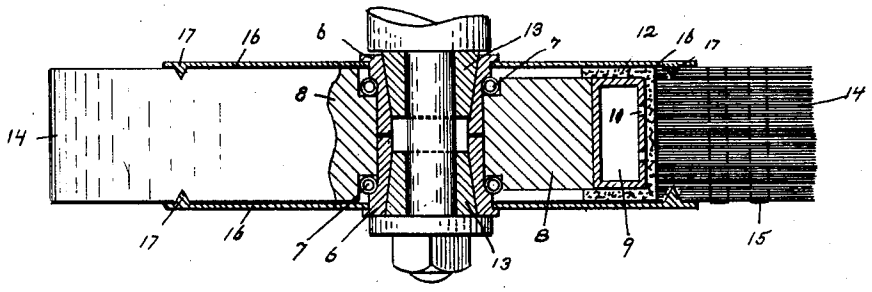


Fig 4

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Patented Mar. 1, 1927. 1,619,442

UNITED STATES PATENT OFFICE.

JOHN STEINER, OF POUGHKEEPSIE, NEW YORK.

POLISHING WHEEL.

Application filed December 16, 1924. Serial No. 756,201.

This invention relates to a polishing wheel of that class employed for buffing or polishing castings or other objects to be given a high polish by being brought into contact with the surface of a wheel composed of cloth or other suitable material and rotating at a high rate of speed.

In the operation of such a wheel, the cutting surface of the wheel must be constantly supplied with a cutting or polishing compound in a semi-liquid state or the wheel will burn and become worn out quickly.

The object of the present invention is to provide a wheel of this class, so constructed that a constant and even flow of liquid and compound is automatically fed to the surface of the wheel while in use.

Another object of the invention being to provide a wheel in which the cutting part may be renewed from time to time without having to furnish an entire new wheel.

Still another object being to construct a polishing wheel that shall be cheap, durable and efficient, under all speeds and for use in all classes of polishing.

With these and other objects in view, my invention consists in certain constructing and combination of parts as will hereinafter be fully described and claimed, and illustrated in the accompanying drawings which form a part thereof and in which like figures of reference refer to corresponding parts in all of the views, but it is fully understood that I do not confine myself to the exact design as shown as changes may be made therein.

In the drawings:

Figure 1 is a side view, partly in section of a polishing wheel embodying my invention.

Figure 2 is an edge view of the same, also partly in section.

Figure 3 shows a side view partly in section of a modified form of the device.

Figure 4 shows an edge view of the same partially in section, illustrating the construction thereof.

Referring to the drawings and particularly to Figures 1 and 2, the wheel is composed of a felt portion 1, which surrounds the hole 2 for the shaft of the grinding stand to which it is attached in the usual way, by flanges, etc.

Beyond said felt portion 1 and in contact therewith is placed the polishing or cutting portion of the wheel which is composed of many layers or laminations of cloth 3 in a series of rings, which are sewed together in the usual way.

To each side of the wheel is secured a cloth disk 4 which is stitched through both the felt 1 and the cloth 3 by the threads 5, to bind the same together.

When this wheel is made up, the felt portion 1 is soaked with a chemical compound of such a nature that when the wheel is put into use, the heat generated by friction and the speed of the travel of the wheel, will feed the compound in an even manner through the laminated cloth to the cutting surface of the wheel.

Referring to Figures 3 and 4, of the drawings, the wheel shows essentially the same principles with the addition of a reservoir to hold a supply of the polishing compound, and also by the construction of a renewable cutting surface.

The wheel comprises a hub member 6 composed of two or more parts and normally held together by coiled springs 7 which embrace the same; surrounding this hub are a series of spokes or body members 8, upon the outer surface of which is mounted a tube 9 curved to a uniform radius with spaced ends permitting expansion or contraction and which forms a reservoir for the polishing compound, and which may be filled through the side opening 10.

Said tubular reservoir 9 is formed with a series of outlet or feed holes 11 in its outer face, and embracing said reservoir, on the sides and outer face, is a felt pad 12.

To retain the reservoir on the spokes 8, there is provided the two tapered bushings 13 which fit into the tapered bore of the hub 6, in such a manner that when the wheel is placed on the spindle of the machine and secured by the usual flange and nut, said bushings will be forced towards each other and will expand the hub parts and the spokes thus holding the reservoir ring in place.

Circumjacent the felt pad 12 is a cutting section, made of rings of cloth 14 laminated in the usual way, and stitched together as at 15.

To retain the cutting portion or laminated cloth rings 14 to the rest of the wheel in a renewal manner, there is provided upon each side of the wheel, a disk of metal or other suitable material, which is of less diameter than the cutting ring 14, and which is formed with the spurs 17 designed to en-

ter said cloth 14, to hold the same in place when said disks 16 are pressed together on the other portions of the wheel by the clamping action of the hubs.

It will thus be seen that the reservoir being filled with a suitable compound, as the wheel is put into action, the centrifugal force, combined with the heat generated, will force the compound in an even manner through the holes 11 into the cloth 14 to the work, and the amount thus fed will be automatic as compared with the speed of the wheel, the felt 12 acting as a check or break and to evenly distribute the flow.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is—

1. A polishing wheel composed of an inner porous portion and an outer portion secured together, said inner portion being comprised of felted fibers, said outer portion including a structure through which abrasive particles may pass comparatively readily, but adapted to hold and move them over a surface to be abraded, said porous portions being impregnated with an abrasive compound and adapted to feed the compound to the outer portions by centrifugal action as said wheel is revolved.

2. A polishing wheel of the class described comprising a body portion of abrasive impregnated felt and a rim portion of cloth laminated disks, and a cloth disk disposed on each side of the wheels, and to which the felt and the rim portion is secured.

3. A polishing wheel of the class described comprising a tubular reservoir adapted to contain a polishing compound, an expanding hub for holding said reservoir, a felt pad mounted on said reservoir, a laminated polishing ring mounted circumjacent said felt pad, side plates for holding said reservoir, felt pad and polishing ring in place, said compound being fed through the felt and polishing ring to the surface of said wheel by centrifugal force generated by rotation of the wheel.

In testimony whereof I hereunto affix my signature.

JOHN STEINER.