

No. 676,953.

Patented June 25, 1901.

D. B. HYDE.
GRINDING AND POLISHING WHEEL.

(Application filed June 11, 1900.)

(No Model.)

Fig. 1.

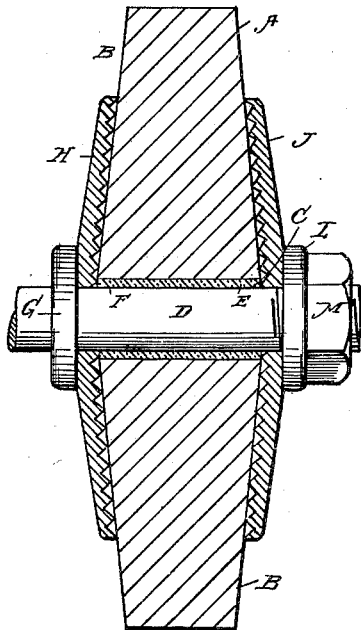


Fig. 2.

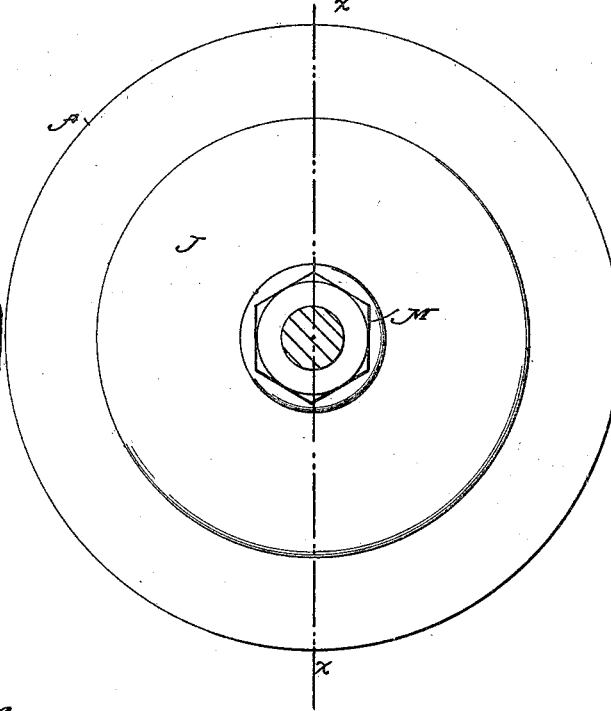


Fig. 3.

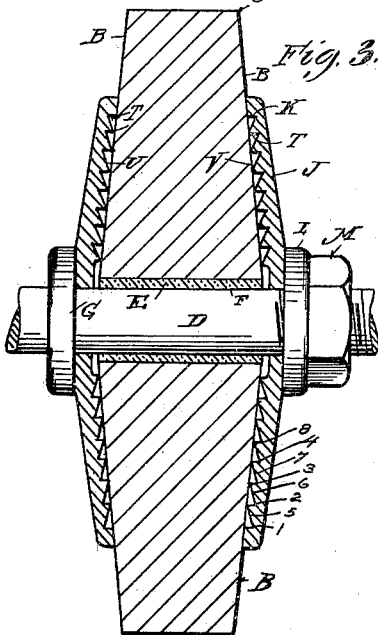
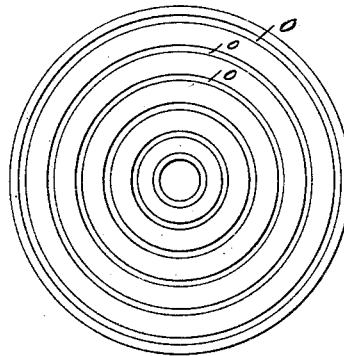


Fig. 4.



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GRINDING AND POLISHING WHEEL.

SPECIFICATION forming part of Letters Patent No. 676,953, dated June 25, 1901.

Application filed June 11, 1900. Serial No. 19,800. (No model.)

To all whom it may concern:

Be it known that I, DAVID B. HYDE, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Grinding and Polishing Wheels, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in grinding and polishing wheels.

The general object of this invention is to provide concave holding or clamping plates with serrations or teeth which are adapted to contact with the sides of a grinding-wheel proper, such grinding-wheel tapering from substantially the center toward its outer periphery, whereby the greater the centrifugal force acting upon the wheel or the parts of the wheel, should it become broken, the more the teeth or serrations will impinge against the wheel, so as to retain the wheel intact within the collars or clamping-plates.

My invention also relates to details of construction and organization hereinafter appearing, and particularly pointed out in the claim.

In the accompanying drawings, on which like reference-letters indicate corresponding parts, Figure 1 represents a vertical sectional view on the line *xx* of Fig. 3; Fig. 2, a side elevation of my improved wheel; Fig. 3, another vertical sectional view showing a different form of tooth, as also a different arrangement of teeth, and leaving a flat circular surface in the central part of the clamp; Fig. 4, a side elevation of one of the clamping-plates, showing the teeth illustrated in Fig. 3.

I am aware that it is old to provide an emery-wheel proper with tapering sides; but with my present improvements I have provided annular teeth, which act to press into the emery-wheel should such wheel become broken, due to centrifugal force or from any other cause. The wheel is thus held in position, thereby avoiding accidents. Occasionally through carelessness or otherwise particles of material are allowed to stick to the sides of emery-wheels, and the surfaces of the sides of the wheels thereby become irregular, and unless thoroughly cleaned where

plain collars or clamps are employed the clamping-nut in drawing such collars against the emery-wheel produces unequal pressure on the wheel, due to such uneven surfaces on the sides of the emery-wheel, and the wheels are often broken. Where my invention is employed, however, this difficulty is overcome, and even though the sides of the emery-wheel may be more or less irregular the teeth settle in the uneven surfaces and press upon the wheel itself evenly all around. In actual practice it has been ascertained that where the same thickness of collar or clamping-plate is employed the one having teeth will hold against centrifugal force much better and upon a different principle, for where the clamping-plates are plain a mere frictional grip is had, while with my plates a positive hold is taken, so that a much thinner collar or clamp may be employed to hold the wheel. This will oftentimes prevent the overweighting of the mandrel, and consequently the wheel will run more evenly and do much better work.

The letter A represents an emery-wheel having tapered sides B, joining with parallel surfaces C near the center of the wheel. Such emery-wheel is mounted upon the usual spindle D, with a filling of lead E or other suitable material within the hole or opening F. A collar G is shrunk upon the spindle D some distance from its outer end, as shown in Fig. 1. Between this collar and the emery-wheel fits a collar or clamp H, which conforms to the exterior surface of the wheel. The inner surface of the clamp is provided with annular teeth I, which are adapted to take hold of the outside surface of the wheel A on one side, while upon the other side of the wheel a similar clamp J is provided, having similar teeth K. A loose collar L is mounted on the spindle so as to bear against the clamp J, and a nut M is mounted upon the threaded portion of the spindle and may be screwed up against the loose collar L, so as to securely clamp the emery-wheel between the clamps H and J, the fixed collar G receiving the thrust and serving as an abutment.

It will be understood, of course, that the exterior surface of the emery-wheel is more or less rough, due to the material of which it is made, or is slightly roughened in the

process of manufacturing it. Thus should the wheel become broken while running the toothed projections engaging with the rough sides more readily act to hold it snugly in position, thereby preventing the wheel from flying apart where it is run at a very high rate of speed.

Of course it will be understood that my improved clamping-plates may be employed with any form of grinding or buffing wheel, and I do not wish to confine myself to emery-wheels alone.

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

In a grinding and polishing wheel, the combination with a wheel proper having its sides converging toward its outer periphery, of a pair of clamping-plates or collars having their inner faces concave for engaging with said wheel proper on opposite sides thereof, teeth or serrations formed on said clamping-plates adjacent to said wheel proper, all substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID B. HYDE.

Witnesses:

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