No. 683,122. Patented Sept. 24, 1901.

C. A. KNILL.

POLISHING WHEEL.

(Application filed Jan. 23, 1899.)

(No Model.)

Fig. 1

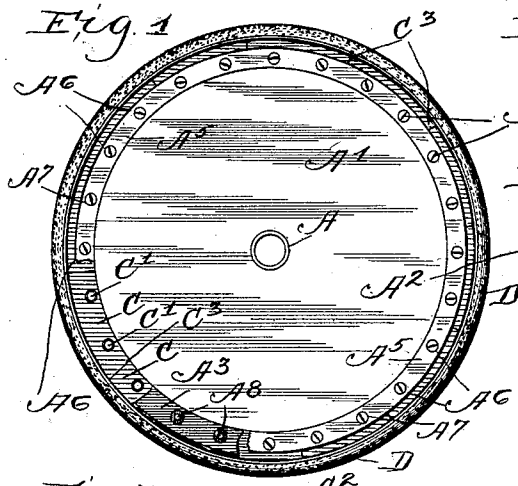


Fig. 2.

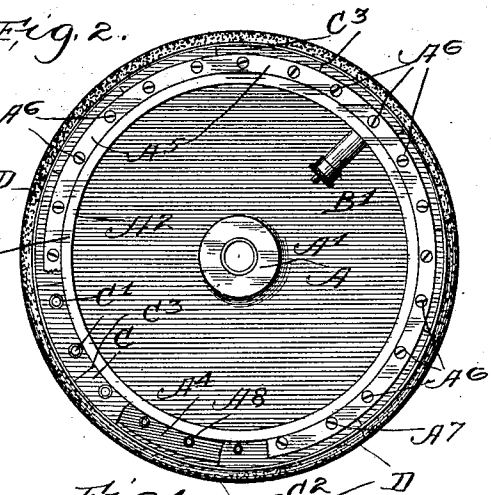


Fig 3

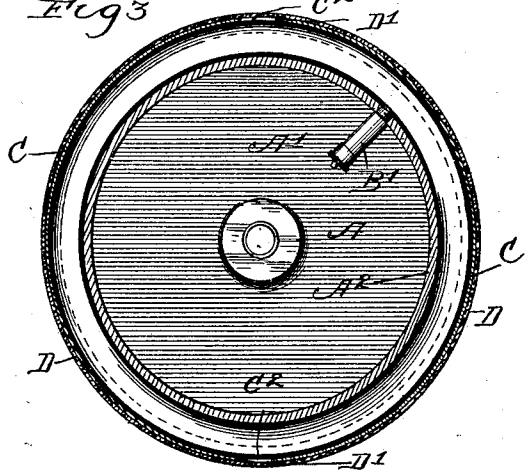


Fig 4

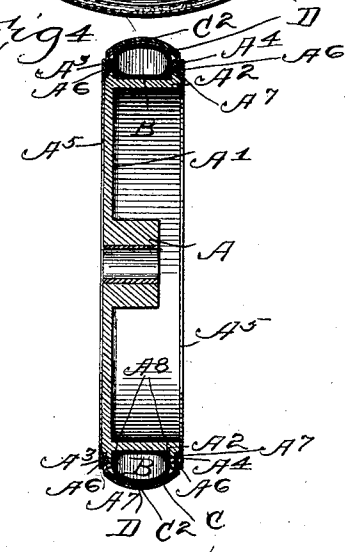


Fig. 6.

Fig. 7.

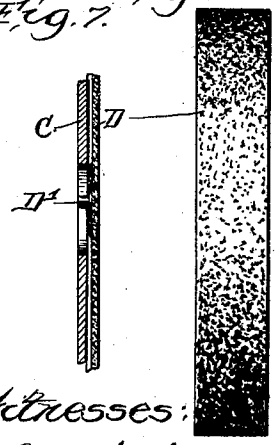
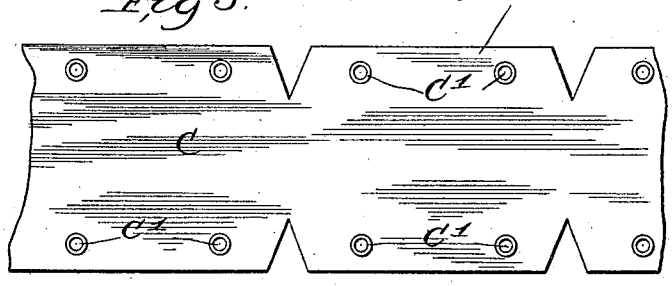


Fig 5.



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UNITED STATES PATENT OFFICE.

CHARLES A. KNILL, OF BELOIT, WISCONSIN.

POLISHING-WHEEL.

SPECIFICATION forming part of Letters Patent No. 683,122, dated September 24, 1901.

Application filed January 23, 1899. Serial No. 703,115. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. KNILL, a citizen of the United States, residing at Beloit, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Polishing-Wheels, of which the following is a specification.

The object of this invention is the production of a polishing-wheel having a pneumatic cushioned polishing-surface.

In the accompanying drawings, Figure 1 is a side elevation of this polishing-wheel, showing a portion of the securing-ring and the covering for the air-tube broken away. Fig. 2 is a similar view of the opposite side of the wheel. Fig. 3 is a section through the wheel on a plane midway between its two faces. Fig. 4 is a diametrical section through the wheel. Fig. 5 is a fragmental view of a portion of the casing for the air-tube. Fig. 6 is a fragmental view of a portion of the endless polishing-band, and Fig. 7 is a detail view showing the connection between the covering for the air-tube and the endless polishing-band.

Like letters of reference indicate corresponding parts throughout the several views.

In the construction of this polishing-wheel I have provided a wheel having an ordinary hub A, with the solid web A′, supporting the rim A^2, and on the periphery of said rim A^2 have formed the two annular flanges A^3 and A^4. These flanges are a little distance from the edge of the rim A^2 to provide for the reception of the flat securing-rings A^5, held in position on said flanges by the screws A^6, passing through the openings A^7 in the securing-rings and into the threaded openings A^8 in the flanges A^3 and A^4.

B is an endless rubber air-tube.

B′ is an air-valve of common construction, forming a communication with the interior of the air-tube B. The air-tube lies on the peripheral face of the polishing-wheel, between the annular flanges A^3 and A^4.

C is an outer covering of canvas for the air-tube B. This canvas covering overlies and protects the air-tube B, being secured at its edges between the flanges A^3 and A^4 and their securing-rings A^5, the screws A^6 for said rings passing through properly-spaced eyelet-openings C′ in the edges of the canvas covering C.

C^2 represents two elongated metal-bound openings in the canvas covering for receiving studs fixed on the inner face of the polishing-band, to be next described, for preventing the "creeping" of said band. The ends of the canvas covering C are joined together by sewing or in any other suitable way, and its edges notched, as at C^3, to permit them to lie flat under the securing-rings A^5.

D is an endless polishing-band, preferably formed of some suitable fabric, the outer face of which band is intended to be coated with emery or other abrasive material. The circumferential length of the band D is just sufficient to permit it to be placed over the canvas covering C when the air-tube B is deflated, the inflation of the air-tube holding the polishing-band D firmly in position. The oppositely-disposed metallic studs D′ are intended to enter the elongated openings C^2 in the canvas covering C to prevent the creeping of the endless polishing-band on the canvas cover C.

In operation the polishing-wheel here described is secured to a spindle and used in substantially the same manner as wheels of common form. Among its advantages over solid wheels are its light even contact with the surface to be polished and the ease with which its polishing-surface may be renewed.

I claim as my invention—

1. In a polishing-wheel, in combination, a wheel, two annular flanges on the periphery thereof, an air-tube between the annular flanges, a covering for the air-tube, means for securing the covering in position on the wheel, an endless polishing-band, and means for attaching the polishing-band to the wheel to prevent "creeping" of the band.

2. In a polishing-wheel, in combination, a wheel, two annular flanges on the periphery thereof, an air-tube between the annular flanges, a covering for the air-tube having an opening therein, means for securing the covering to the annular flanges, an endless polishing-band having a stud for entering the opening in the covering for the air-tube, to prevent the "creeping" of the polishing-band.

3. In a polishing-wheel, in combination, a wheel, two annular flanges on the periphery of said wheel having screw-threaded openings in said flanges, an air-tube between the

annular flanges, an air-valve for the air-tube, a covering for the air-tube, which said covering has a series of perforations near its edges, a securing-ring for each annular flange, which ring is provided with openings coincident with the screw-threaded openings in the annular flanges, screws for said openings, and an endless polishing-band.

4. In a polishing-wheel, in combination, a wheel, two annular flanges on the periphery of said wheel having screw-threaded openings in said flanges, an air-tube between the flanges, an air-valve for the air-tube, a covering for the air-tube, which covering is provided with notches along its edges, a series of perforations near its edges and two longitudinally-elongated openings, a securing-ring for each annular flange, which ring has openings coincident with the screw-threaded openings in the annular flange, screws for said openings, and an endless polishing-band having studs for engaging the longitudinally-elongated openings in the covering for the air-tube, for preventing the "creeping" of the polishing-band.

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