W. A. PAINTER.

BUFFING OR POLISHING WHEEL.

APPLICATION FILED NOV. 12, 1908.

1,106,833.

Patented Aug. 11, 1914.

2 SHEETS—SHEET 1.

Fig. 1.

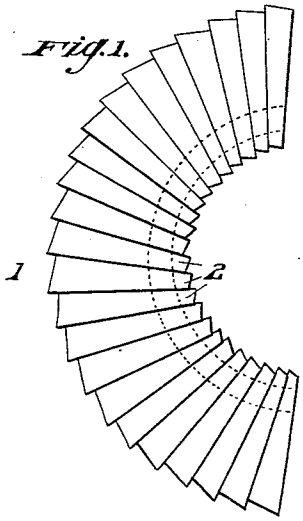


Fig. 2.

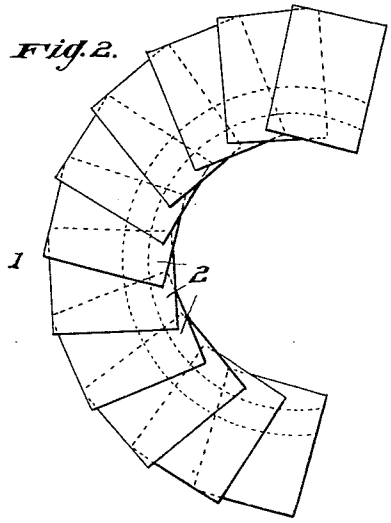


Fig. 3.

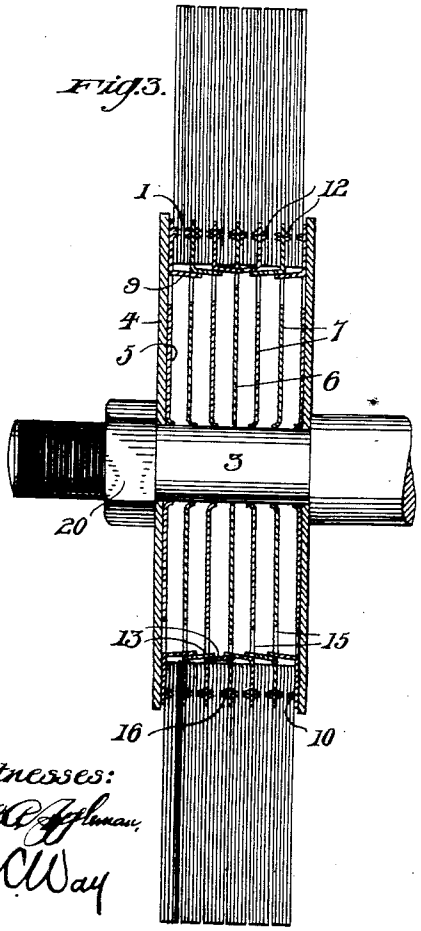


Fig. 4.

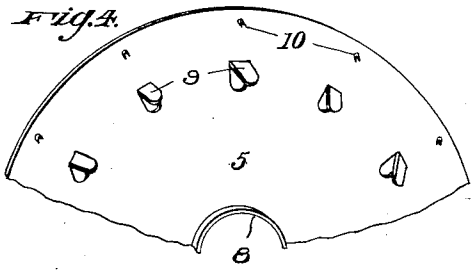


Fig. 5.

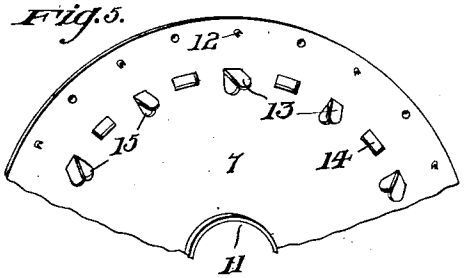
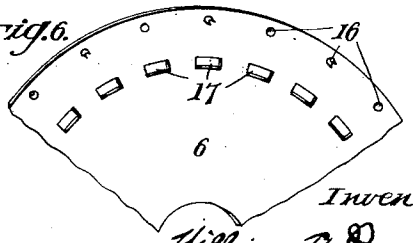


Fig. 6.



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2 SHEETS—SHEET 2.

Fig. 7.

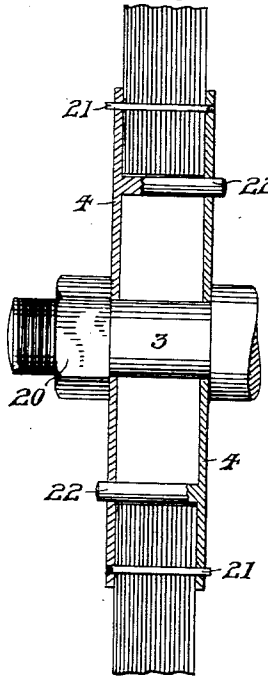


Fig. 8.

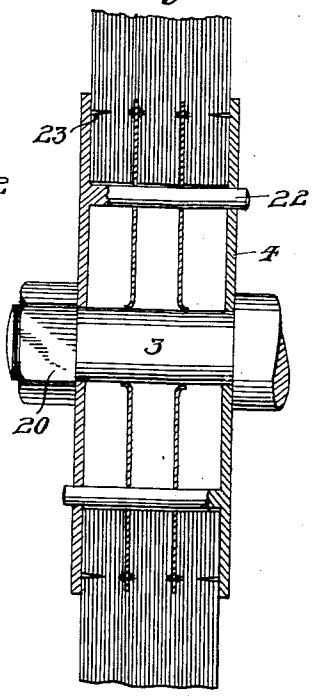


Fig. 9.

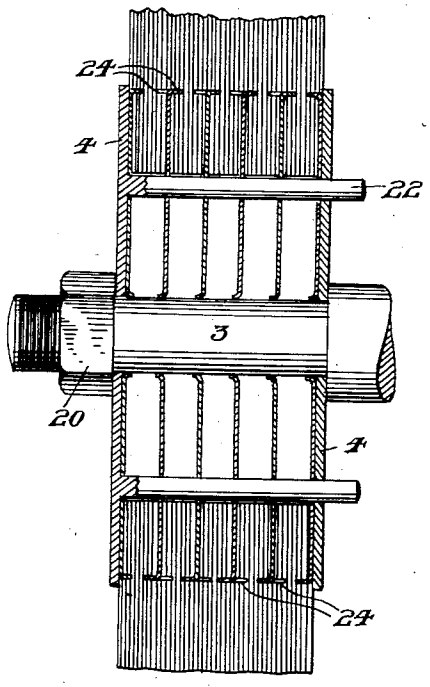


Fig. 14.

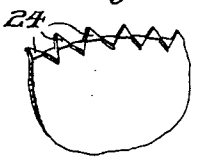


Fig. 11.

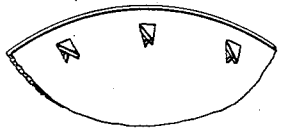


Fig. 10.

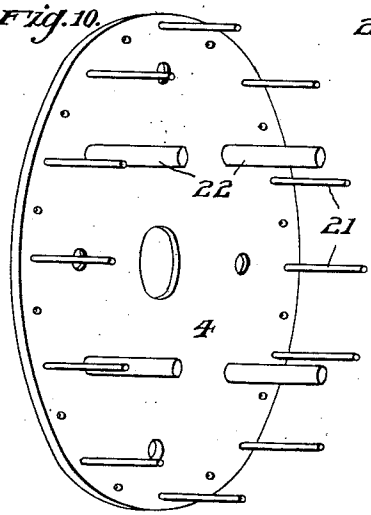


Fig. 12.

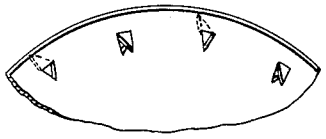


Fig. 15.

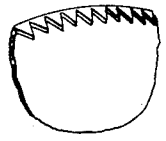


Fig. 13.



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UNITED STATES PATENT OFFICE.

WILLIAM A. PAINTER, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO PATRICK H. BERGIN, OF PITTSBURGH, PENNSYLVANIA.

BUFFING OR POLISHING WHEEL.

1,106,833. Specification of Letters Patent. Patented Aug. 11, 1914.

Application filed November 12, 1908. Serial No. 462,204.

To all whom it may concern:

Be it known that I, WILLIAM A. PAINTER, of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Buffing or Polishing Wheels, of which the following is a specification.

In the accompanying drawings, which illustrate applications of my invention, Figure 1, is a plan view of one half of a section of folded buffing or polishing material constituting the peripheral portion or rim of the wheel; Fig. 2, a view similar to Fig. 1, showing the pieces comprising a section of slightly different form; Fig. 3, a central vertical sectional view of a wheel embodying my invention mounted on a spindle; Figs. 4, 5, and 6 detail elevational views of portions of the plates or disks comprising the wheel-center; Figs. 7, 8, and 9 central vertical sectional views of modified forms of wheels embodying my invention mounted on spindles; Fig. 10 a perspective view of one of the plate-members or disks employed in the form of Fig. 7; and Figs. 11, 12, 13, 14 and 15, detail views of plates or disks particularly showing various forms of spurs, points or projections designed to engage the sections of the buffing or polishing material of the wheel.

My invention relates to that class of buffing or polishing wheels especially designed for buffing or polishing metals, and, as heretofore constructed, have usually comprised a number of cloth sections, of circular form made with a small central opening to permit the sections to be assembled on a spindle of a lathe. Each section comprises a great number of pieces superimposed on one another. The sections constituting a wheel are held on the spindle of the buffing or polishing lathe between two circular clamping-plates.

In the use of wheels of the class to which my invention relates, that is to say, wheels for buffing or polishing metals, and of the form above referred to, the wheels or the cloth sections thereof soon wear away and after their diameters have been reduced to six or seven inches, the sections are usually discarded. Thus under the present method of making and using these wheels there remains a central portion of from six to seven inches that cannot be used and in practice is usually thrown away.

An object of my invention is to provide a wheel by which this great waste of buffing or polishing material may be overcome. I accomplish this end by providing a wheel having a metallic wheel-center and a rim or peripheral portion of buffing or polishing material made of one or more ring-sections of cloth or other suitable material. With wheels constructed in accordance with my invention, the buffing or polishing material may be used until it is worn down to within a very short distance from the metallic wheel-center, thus leaving only a thin collar or rim of buffing material to be discarded.

A further object of the present invention is to provide new and improved means for mounting ring-sections of buffing or polishing material on a spindle.

Referring to the drawings, the buffing or polishing portion of my wheel preferably comprises a number of ring-sections 1. These sections are formed by superimposing folded pieces 2 on one another as particularly shown by Figs. 1 and 2. Sections 1, when assembled constitute the rim or periphery of the wheel.

The wheel-center, which is shown in Fig. 3, mounted on a spindle or shaft 3 of a buffing or polishing lathe, between circular clamping plates 4, comprises two outer plates or disks 5, a central key-plate or disk 6, and intermediate disks or plates 7. As shown in the form of Fig. 3, and more particularly in the detail view Fig. 4, each of the outer plates 5 is formed with a central cupped opening 8, centering lugs or keys 9, and with projections or spurs or points 10.

The intermediate plates 7, in addition to being provided with a central opening 11, similar to the opening 8 of plates 5, penetrating projections 12 and centering lugs or keys 13, are each formed with openings 14, alternating with the lugs 13, and openings 15. The penetrating projections 12 are arranged on both faces of the intermediate plates, and are adapted when the parts are assembled to engage two adjacent ring-sections 1. The central key-plate or disk 6 is formed with projections 16 and with a series of keys or lug receiving-openings 17.

In the form of Fig. 3, I show six ring-sections each held between the plates or disks constituting the wheel-center and with the spurs or points of the plates penetrating or gripping the ring-sections. By pro-

viding gripping projections in the form of spurs, points or teeth, adapted to enter the material of the ring-sections for the purpose of maintaining said sections in place, I am enabled to greatly reduce the amount of gripping or holding surface heretofore required for holding the buffing or polishing material in place, consequently more of said material is exposed outside of the wheel-center and may be utilized for buffing or polishing. A further advantage I derive by this construction, over constructions having disks or plates formed with flat or non-penetrating holding or gripping members for the buffing material is, that I do not depend upon the compression of the plates or disks alone for maintaining the gripping portions in contact with the buffing material as is the case where non-penetrating gripping or holding members are employed. These spurs, points or penetrating-projections may be formed from the material of the plates or disks and on their outer edges or periphery as shown by Figs. 14 and 15, or they may be arranged as illustrated by Figs. 11, 12 and 13; or the penetrating projections may be formed separately, or the plates or disks suitably secured thereto.

Fig. 10, shows a construction employing separate penetrating-projections inserted in a disk.

In an assembled wheel of the form of Fig. 3, the guide or centering lugs 9 of the respective outer disks 5 project into the openings 15 of the adjacent intermediate disks 7 and rest upon the centering lugs 13 thereof, and the lugs 13 of the first intermediate disks project through the openings 15 of the second intermediate disks and rest on the corresponding lugs of said second intermediate disks. The lugs 13 of the second intermediate disks project through the openings 17 of the central disk 6. A wheel of this form may be readily assembled by first placing a ring-section 1 on an outer disk, then alternately placing the disks and ring-sections on each other. When thus assembled the wheel is mounted on a spindle and its center compressed by means of a nut 20.

In the form of Fig. 7 I dispense with the disks or plates 5, 6 and 7 and provide the outer clamping-plates 4 with penetrating pins 21 and with centering means in the form of pins 22. In this form, the ring-sections of the buffing or polishing material are formed with holes through which the pins 21 pass.

Fig. 8 shows a form of wheel in which the clamping-plates 4 are provided with centering pins 22 and with penetrating points 23; in this construction I employ intermediate disks having projections formed on each face of the disk.

In the form of Fig. 9, I show intermediate disks provided with teeth 24, as particularly shown in Fig. 14, and only one of the clamping plates formed with the centering pins.

What I claim is:

1. The combination with clamping plates, of a buffing or polishing wheel of the class described comprising a separable rim formed of ring-sections of buffing or polishing material, and a wheel center formed of flexible interlocking sheet metal plates or disks with their peripheries entered between the ring-sections, said plates formed with ring-gripping means, and means for centering the rings on the disks.

2. The combination with clamping plates, of a buffing or polishing wheel of the class described comprising a separable rim formed of ring-sections of buffing or polishing material, and a wheel center formed of sheet metal plates or disks having central cupped openings and ring-section gripping-means, and means for centering the rings on the disks.

3. A buffing or polishing wheel of the class described having its rim formed of ring-sections of buffing or polishing material, and its center of a series of sheet metal disks comprising two outer disks provided with means for gripping the ring-sections, said disks provided with central cupped openings, intermediate interlocking disks, said intermediate disks provided with means for gripping a ring-section, and means for centering the ring-sections on the disks.

4. A buffing or polishing wheel of the class described comprising a separable rim formed of ring-sections of buffing or polishing material, and a wheel center including a series of sheet metal disks comprising two outer disks each provided with gripping means, and intermediate disks having gripping means and centering lugs.

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

WILLIAM A. PAINTER.

Witnesses:
A. C. WAY,
W. G. DOOLITTLE.