W. S. CRANDALL.

TOOL FOR POLISHING RINGS.

APPLICATION FILED FEB. 5, 1916.

1,181,114.

Patented May 2, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

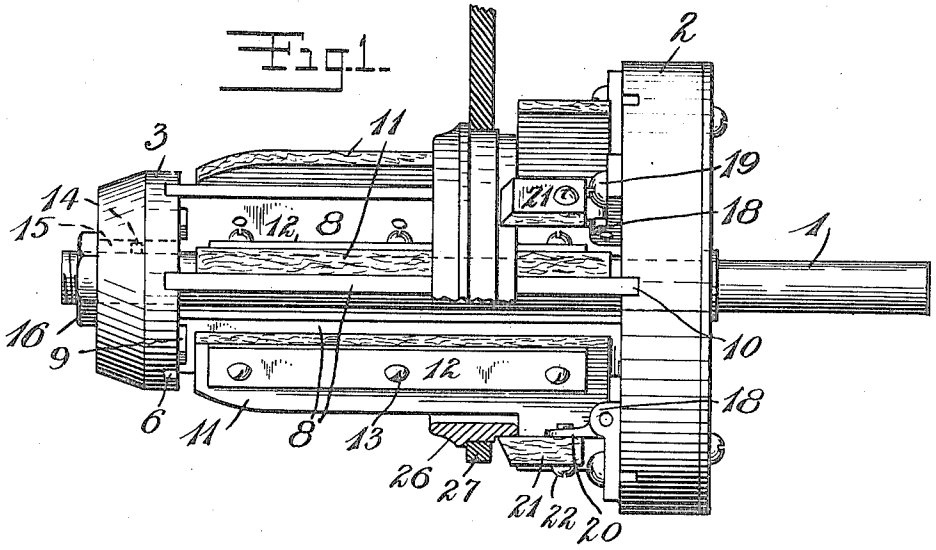


Fig. 2.

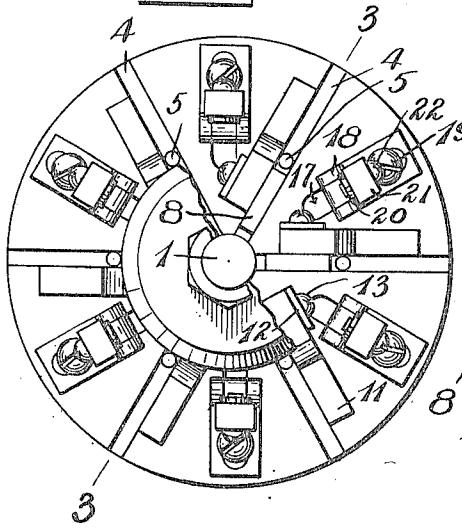
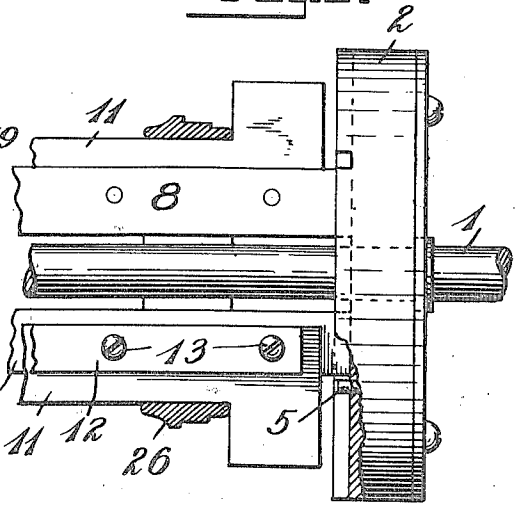


Fig. 3.



Inventor

W. S. CRANDALL

By his Attorneys

Bartlett & Brownell

W. S. CRANDALL.

TOOL FOR POLISHING RINGS.

APPLICATION FILED FEB. 5, 1916.

1,181,114.

Patented May 2, 1916.

2 SHEETS—SHEET 2.

Fig. 4.

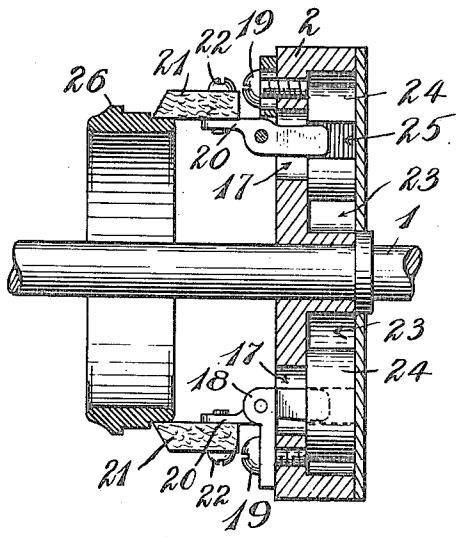


Fig. 5.

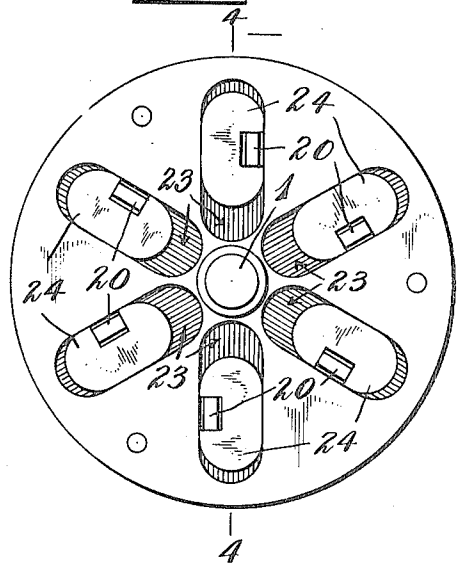


Fig. 6.

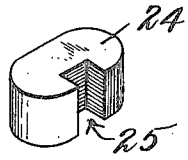


Fig. 7.

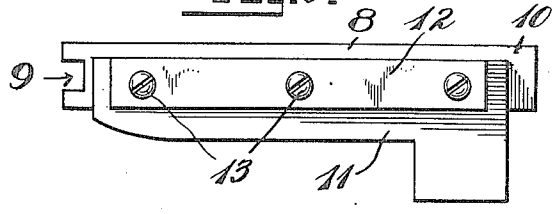
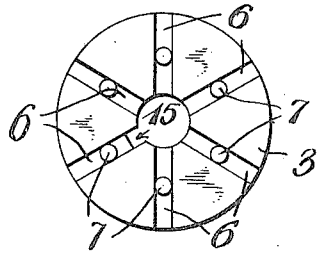


Fig. 8.



Inventor

W. S. CRANDALL

By his Attorneys

Bartlett & Brownell.

UNITED STATES PATENT OFFICE.

WILLIAM STATES CRANDALL, OF PAWCATUCK, CONNECTICUT, ASSIGNOR TO THE AMERICAN THREAD COMPANY, A CORPORATION OF NEW JERSEY.

TOOL FOR POLISHING RINGS.

1,181,114. Specification of Letters Patent. Patented May 2, 1916.

Application filed February 5, 1916. Serial No. 76,292.

To all whom it may concern:

Be it known that I, WILLIAM S. CRANDALL, a citizen of the United States, residing at Pawcatuck, Connecticut, have invented a certain new and useful Improvement in Tools for Polishing Rings, of which the following is a full, clear, and exact description.

My invention relates to a tool for polishing rings, such, for instance, as twister rings. In such rings it is of the utmost importance that the rings be thoroughly polished on the flange about which the traveler moves, and the object of my invention is to produce means for easily getting a high degree of polish upon surface with which the traveler makes contact.

A further object of my invention is to provide means for polishing the edge and the inner and outer sides of the ring simultaneously.

The following is a description of an embodiment of my invention, reference being had to the accompanying drawings in which—

Figure 1 shows a side elevation of my polishing tool with two of the polishing members removed for clearness of illustration. Fig. 2 is an end elevation of the same with all the members in position, other portions being broken away. Fig. 3 is a side elevation of one end of the device with parts removed for the sake of clearness. Fig. 4 is a sectional view of the same end of the device on the line 4—4 Fig. 5. Fig. 5 is an end elevation of Fig. 1 with the cover plate removed. Fig. 6 is a perspective view showing in detail one of the weights employed. Fig. 7 is a side elevation of one of the polishing arms. Fig. 8 is a plan view of the small end retaining member.

Referring more particularly to the drawings, 1 is a shaft or spindle which, when in use, is held in vertical position in the chuck in an ordinary drill press. Mounted upon this shaft is a large disk 2 and a small disk 3. The large disk has radial slots 4—4 in which are located pins 5—5 forming stops. The small disk is provided with radial slots 6—6 in which are located pins 7—7 forming stops. Loosely mounted in these slots are thick metal plates 8 having at one end, which extends in the slot 6, notches 9 which fit over the pins 7 of the disk 3. The other ends 10 extend into the slots 4 and are located inside the pins 5 so that the pins 5 and 7 limit the outward throw of the members 8. An L-shaped piece of leather 11 is secured to each of the metal plates 8 by a clamping plate 12 and screws 13. The slots 6 in the disk 3 and the slots 4 in the disk 2 are kept in alinement by a pin or spline 14 on the spindle 1 which fits in a cutaway portion 15 in line with one of the slots 6. The disk 3 is held upon the spindle 1 by a nut 16, the nut being adjusted so that the plates 8 are loosely held within the slots 4 and 6.

The disk 2 is provided with openings 17 alternating with the slots 4. Mounted over these openings are bearings 18, the same being secured to the disk 2 by screws 19 and provided with elongated slots so that they are readily adjustable upon the disk 2. Mounted in each of the bearings 18 is a lever 20 carrying a leather polishing piece 21 secured thereto by the screw 22. The lower end of the lever passes into a radially extending recess 23 in the disk 2. In this radially extending recess is an elongated weight 24, having a notch 25 in one side into which the inner end of the lever 20 protrudes.

When the tool is mounted in a drill press, the ring to be polished (shown at 26) together with its carrying plate 27 is placed upon the bed of the press beneath the tool. The press is then put in operation so as to rapidly revolve the spindle 1. The tool is then lowered until the horizontally extending portion of the leather 11 comes in contact with one edge of the ring, at which time the leathers 21 will be outside of the ring, with the result that the heavy members 8 together with their leathers 11 are thrown out by centrifugal force so as to come in contact with the inner surface of the ring. The weights 25 are also thrown out by centrifugal force and act upon the levers 20 so as to cause the leathers 21 to bear upon the outer surface of the ring. The result is that, proper polishing material being applied to the leathers where they contact the ring, the inner and outer surfaces, together with one edge of the ring, are simultaneously polished in a thorough and expeditious manner. During the polishing period the leathers 11 and 21 are held in engagement with the inner and outer lateral surfaces by centrifugal force acting on the

members 8 and 25, the pressure of the leathers 21 being due to the centripetal force necessary to restrain the weights 25. At the same time the upper edge of the ring is polished by reason of the pressure due to the downward movement of the drill press chuck which is regulated by hand as is usual in drill presses.

As will be evident to those skilled in the art, my invention permits of various modifications without departing from the spirit thereof or the scope of the appended claims.

What I claim is—

1. In a tool for polishing rings, the combination of a spindle, and polishing members carried thereby adapted to be thrown inward by centripetal force so as to engage the outer surface of the ring when said spindle is rotated, and weights carried independently of said polishing members but coacting therewith.

2. In a polishing tool, the combination of a revoluble spindle, heavy polishing members carried thereby adapted to be thrown out by centrifugal force and polishing members also carried thereby adapted to be thrown inward by centripetal force, said polishing members being alternately arranged.

3. In a tool for polishing rings, the combination of a spindle, and polishing members carried thereby adapted to be thrown outward by centrifugal force when said spindle is rotated, said polishing members each having a polishing surface substantially parallel to the axis of said spindle and a polishing surface on a portion substantially at a right angle thereto.

4. In a polishing tool, the combination of a spindle, two disks mounted thereon having radial grooves, polishing members movably mounted in said grooves and each having a polishing surface substantially parallel to the axis of said spindle and a polishing surface on a portion at substantially a right angle thereto.

5. In a polishing tool, the combination of a spindle, a disk mounted thereon having radial recesses, weights in said recesses, polishing members pivoted to said disk, one end of each adapted to engage the ring to be polished and the other end engaging one of said weights.

6. In a polishing tool, the combination of a spindle, two disks mounted thereon having radial grooves, polishing members movably mounted in said grooves, each having a polishing surface substantially parallel to the axis of said spindle and a polishing surface on a portion at substantially a right angle thereto, and a polishing member mounted adjacent to said second surface and provided with means for causing it to move inward under the action of centripetal force.

WILLIAM STATES CRANDALL.