E. T. POLLARD.

POLISHING HEAD.

APPLICATION FILED JULY 29, 1910.

976,689. Patented Nov. 22, 1910.

Fig. 1.

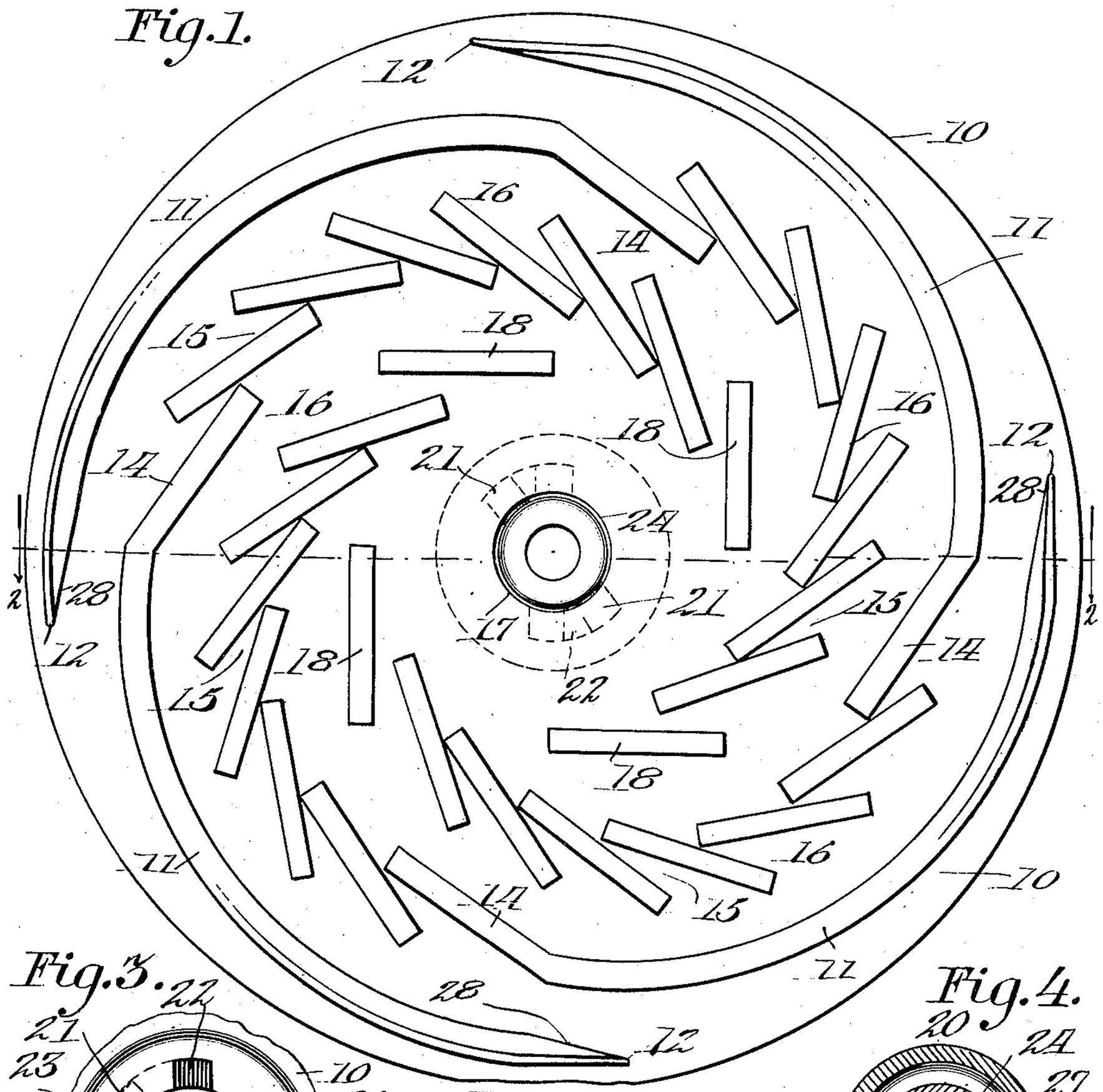

Fig. 3.

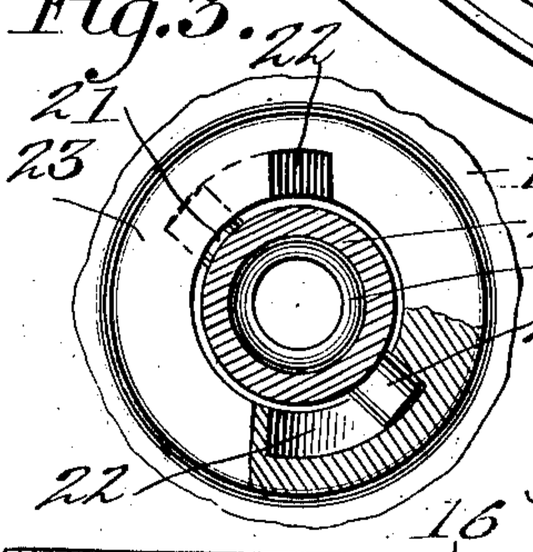

Fig. 4.

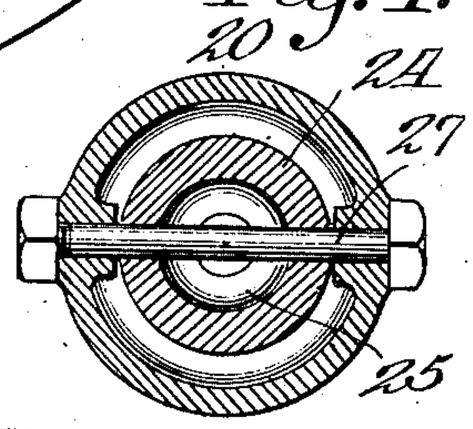

Fig. 2

Witnesses
Phil E. Barnes
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by E. R. Stockbridge Attorney

UNITED STATES PATENT OFFICE.

EDSON T. POLLARD, OF RUTLAND, VERMONT.

POLISHING-HEAD.

976,689. Specification of Letters Patent. Patented Nov. 22, 1910.

Application filed July 29, 1910. Serial No. 574,504.

To all whom it may concern:

Be it known that I, EDSON T. POLLARD, a citizen of the United States, residing at Rutland, county of Rutland, State of Vermont, have invented certain new and useful Improvements in Polishing-Heads, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a polishing head and particularly to a construction of the members of said head and their mounting for universal movement.

The invention has for an object to provide a novel and improved construction of polishing head provided with leaders disposed tangentially to the center of said head and provided with scrolls at its periphery to lead the abrading material toward the liquid feed at the center of the head.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

In the drawing—Figure 1 is a bottom plan of the polishing head; Fig. 2 is a vertical section on line 2—2 of Fig. 1; Fig. 3 is a horizontal section on line 3—3 of Fig. 2; and Fig. 4 is a section on line 4—4 thereof.

Like numerals of reference refer to like parts in the several figures of the drawing.

In the drawing presented, the polishing head or disk 10 is provided with a series of leaders or scrapers 11 adapted to bear upon the material to be polished. As shown in Fig. 1, these leaders 11 are provided with a point 12 at their free outer ends and at their inner ends communicate with a series of separate angular blocks 16 disposed in communication with the inner ends 14 of the leaders 11. These blocks being disposed at an angle to each other, form a series of pockets 15 adapted to retain the abrasive material after it has been successively fed about the head 10. The members extending from the leaders 11 are continued in a spiral course by a series of blocks or members 16 forming pockets 15 intermediate thereof and adapted to retard the flow of abrasive material toward or from the central opening 17 of the disk or head. The final member 18 of the series of contacting members 16 is spaced from members of its own series and from the surrounding series to provide a space through which the abrasive material, reaching this point, can travel to the next adjacent scroll through the centrifugal force and then continue its grinding action. In the assemblage of the parts of the head, it is desirable to cast the head plate 10 upon the wrought iron or steel grinding leaders which forms a convenient and economical means for assembling the parts.

The head is supported by a tubular coupling 20 provided at its lower ends with pins 21 adapted to seat and travel in bayonet slots 22 formed in the central projection of the head at 23. Within this socket, a coupling member 24 extends which is provided with a passage 25 through which liquid may be introduced to and through the head by means of the nozzle 26. The member 24 has a tap 29 for a set screw for attachment to the usual driving spindle or shaft and is pivotally mounted upon the socket by means of a bolt 27 extending through these parts so as to permit a limited pivotal movement upon the head and yet maintain a constant liquid communication with the center of the head. The outer leader 11 of this head may, if desired, be tapered toward its point, as shown at 28 in Fig. 2.

In the operation of the invention, the abrasive material is fed inward from the periphery of the head by means of the leaders and then encounters the centrifugal force of the head, and also liquid, if used, which is forced outward from the center thereof. In the continued movement of these scrolls, the centrifugal force is overcome and the abrasive material is fed inward at an angle to the polishing members upon the head so as to be received by the pockets thereof and, in its inward movement, retained to complete a perfected polishing action. The construction permits the scraper members to have a cross-cutting action upon the material which increases their effectiveness in connection with the abrasive material fed. The construction also keeps the abrasive material and water in active circulation while the feature of a continuous curve in the leaders, formed of members set at an angle to each other, breaks up the flow in that direction under centrifugal force. The bending of these leads which are relatively short, can be effected by a single heating and the remainder of the scroll is formed of short rectangular wrought iron pieces secured to the head by casting therein or

otherwise. The opening between the final member of each scroll and its adjacent member permits the material caught thereby to be delivered to the next outer scroll by centrifugal force and thus continue the grinding action.

The invention presents a simple, efficient and economical construction of polishing head adapted for application to any machine for that purpose.

Having described my invention and set forth its merits what I claim and desire to secure by Letters Patent is—

1. In a polishing head, a leader and a feeding portion having a series of pockets upon its periphery.

2. In a polishing head, a leader and a feeding portion having a series of pockets upon its periphery, the final member of said leader being separated therefrom.

3. In a polishing head, a series of concentric scrolls, each formed of a curved leader, and a series of feeding members having retaining pockets disposed at an angle to each other.

4. In a polishing head, a series of concentric scrolls, each formed of a curved leader, and a series of feeding members disposed at an angle to each other, the final central member of each series being separated from the remaining members of the scroll.

5. In a polishing head, a curved leader having an angularly disposed inner end, and a series of feeding members extending from said end and disposed at an angle to each other.

6. In a polishing head, a series of curved leaders disposed concentric to each other, and a feeding portion composed of separate members disposed at an angle to each other to form a series of pockets upon the outer face of said leaders.

7. In a polishing head, a series of curved leaders disposed concentric to each other, and a feeding portion composed of separate members disposed at an angle to each other to form a series of pockets upon the outer face of said leaders, the final member of said series being spaced from the final member of the scroll to provide a passage into the next adjacent scroll.

8. In a polishing head, a curved leader having at its inner end a series of feeding members disposed at an angle to each other and its outer end tapered both laterally and longitudinally.

9. In a polishing head, a head plate, a series of concentric scrolls secured thereto, the outer ends of said scrolls at the periphery of said head being provided with a tapering free end, an angular portion at the opposite end of said scrolls, and a series of feeding members in contact with said end and disposed at an angle to each other.

10. In a polishing head, a series of tangentially disposed leaders, feeding members disposed at an angle to each other and disposed at the inner end of said leaders, a head cast upon said leaders, and a feeding connection disposed at the center of said head.

11. In a polishing head, a series of concentric scrolls, each formed of a curved leader, a series of angularly disposed blocks at the inner end of each leader, and means for feeding liquid at the center of said head.

12. In a polishing head, a series of concentric scrolls, each formed of a curved leader, a series of angularly disposed blocks at the inner end of each leader, means for feeding liquid at the center of said head, a socket pivotally mounted upon said head at the center thereof, and a nozzle pivoted upon said socket to discharge therein.

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

EDSON T. POLLARD.

Witnesses:
GEO. C. COBB,
WM. J. MCGARRY.