

(No Model.)

J. L. PERRY.  
POLISHING CYLINDER.

No. 399,629.

Patented Mar. 12, 1889.

Fig. 1.

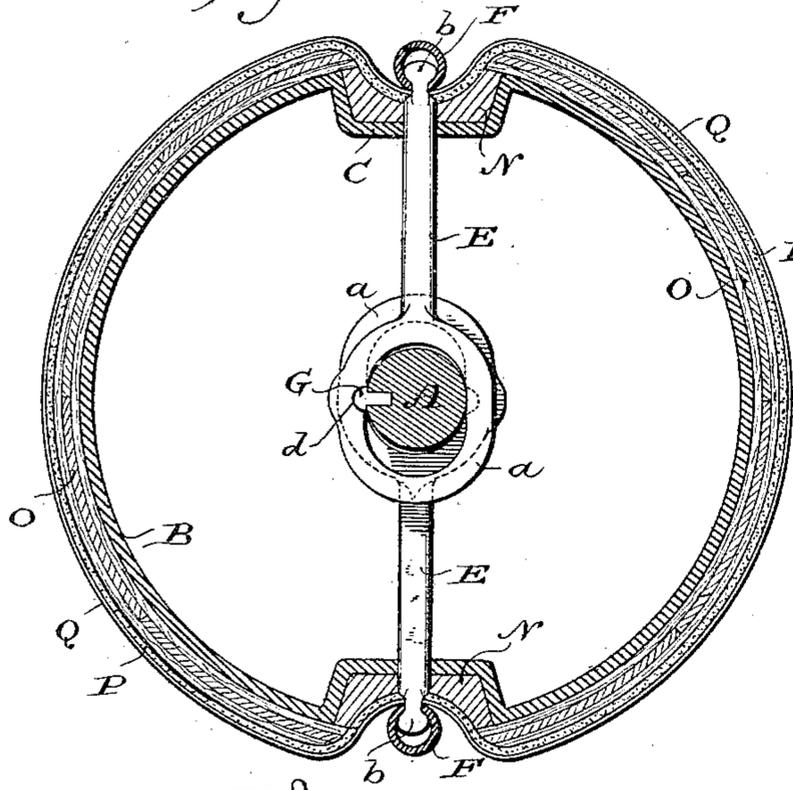


Fig. 2.

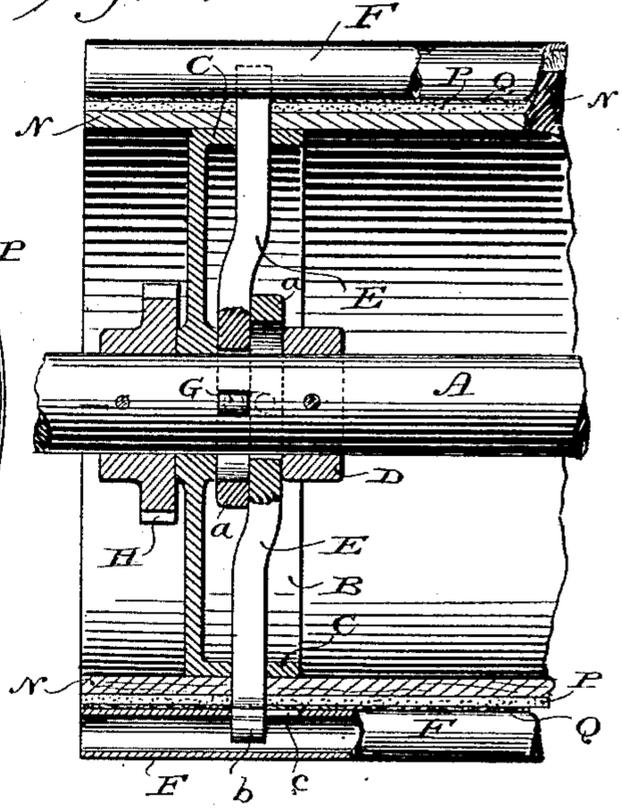


Fig. 3.

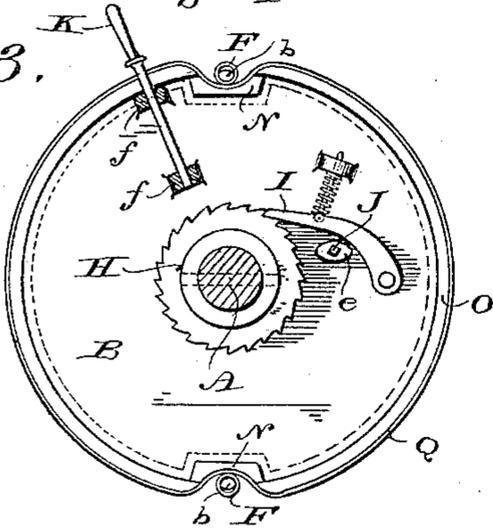


Fig. 4.

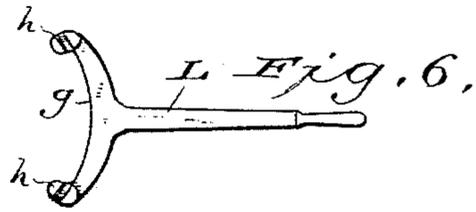
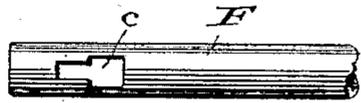
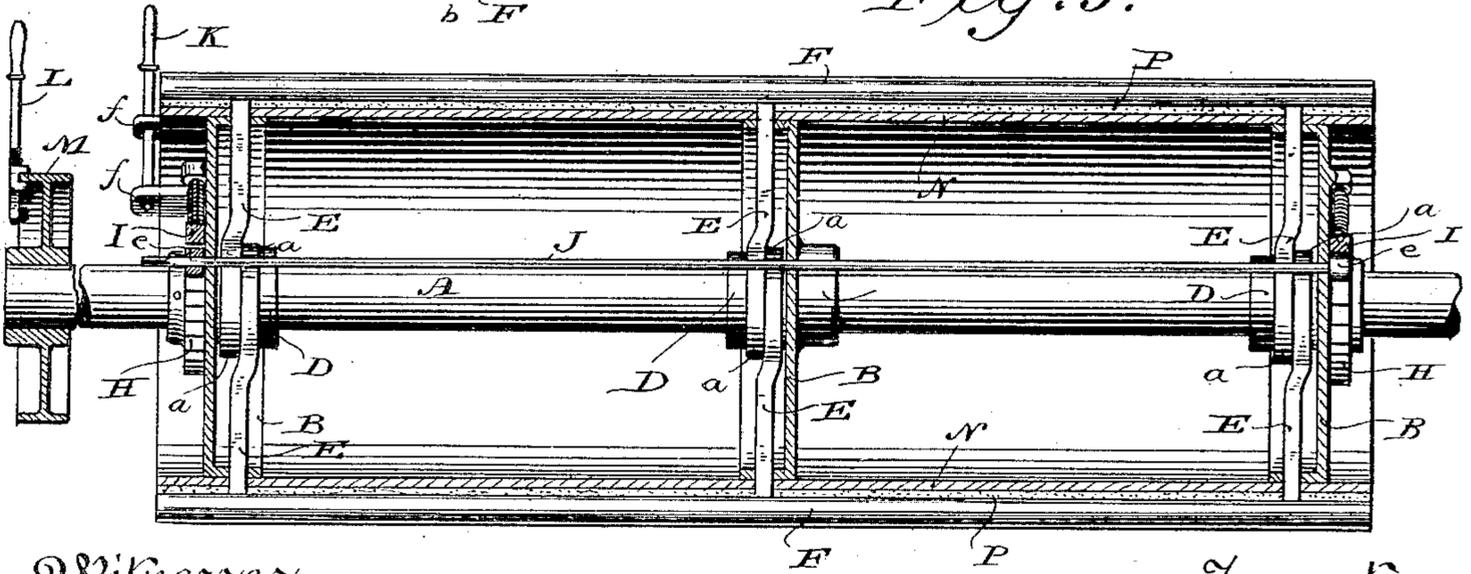


Fig. 5.



Witnesses,

Geo W Young  
N. E. Oliphant

Inventor

James L. Perry  
By Stout & Underwood  
Attorneys,

# UNITED STATES PATENT OFFICE.

JAMES L. PERRY, OF WATERTOWN, ASSIGNOR TO THE BERLIN MACHINE WORKS, OF BELOIT, WISCONSIN.

## POLISHING-CYLINDER.

SPECIFICATION forming part of Letters Patent No. 399,629, dated March 12, 1889.

Application filed October 25, 1887. Serial No. 253,304. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES L. PERRY, of Watertown, in the county of Jefferson, and in the State of Wisconsin, have invented certain new and useful Improvements in Polishing-Cylinders; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to polishing-cylinders; and it consists in certain peculiarities of construction and combination of parts, to be hereinafter described with reference to the accompanying drawings, and subsequently claimed.

In the drawings, Figure 1 represents a vertical transverse section of a polishing-cylinder constructed according to my invention; Fig. 2, an enlarged vertical longitudinal section of a portion of the cylinder; Fig. 3, an end view of the same; Fig. 4, a detail view of a clamping-rod employed in my invention; Fig. 5, a vertical longitudinal section of a complete cylinder, and Fig. 6 a detail view of the lever.

Referring by letter to the drawings, A represents a shaft, on which is arranged at suitable intervals a series of flanged supporting-heads, B, for a cylinder, that may be of wood, metal, or other suitable material, said heads having their peripheries provided with two or more recesses, C.

The shaft A is engaged at suitable intervals by the slotted inner ends, *a*, of radial arms E, that are held in place on said shaft by collars D, and have their outer ends, *b*, passed through suitable openings in the cylinder, these outer ends of said arms being shaped to engage key-hole slots *c* in longitudinal clamping-rods F, the latter being preferably made from gas-pipe to save expense.

Each of the arms E has its slotted end *a* provided with a socket or groove, *d*, in line with the shaft A, this groove being described to fit a pin-head or lug, G, projecting from said shaft.

By the construction just described I establish an eccentric connection between the shaft A and the several arms E, and it will be noticed that this connection for one of the arms is on the opposite side of said shaft from that for the adjacent arm.

On the shaft A, adjacent to the outer face of the end heads of the cylinder, are keyed ratchet-wheels H, and pivoted to said heads are spring-jaws I, that normally engage said ratchet-wheels to lock said shaft and cylinder together. Passed through the cylinder is a rod, J, shaped at one or both ends to fit a wrench, and secured to said rod, to come under the jaws I, are lugs or buttons *e*. One or both end heads of the cylinder are also provided with perforated lugs *f*, that serve to engage a detachable hand-lever, K, and a similar lever, L, provided with an arc-shaped end, *g*, having grooved ears *h* thereon, is designed to be detachably connected to the rim of the driving-pulley M on the shaft A, for the purpose to be hereinafter set forth. The cylinder is preferably constructed in the following manner: All the recesses C in the peripheries of the heads B being in line, I place therein longitudinal wooden strips N, designed to have their upper edges flush with the greatest circumference of said heads, and these wooden strips are concave upon their outer faces. I now secure upon the circumference of the heads B a jacket comprising two or more sections, O, of such length as to extend beyond the end ones of said heads, as best illustrated in Figs. 2 and 5, these jacket-sections being made of two, three, or more layers of veneer glued and pressed together, said layers being arranged in such a manner that the grain of one will be across the grain of those immediately adjacent thereto.

Each section O of the veneer jacket is secured to the heads B between two of the wooden strips N. The edges of the sections meeting the concavities in said strips are rounded off to form continuations of these concavities. To the outer face of each jacket-section I glue or otherwise secure a layer, P, of cork, and, as shown by Fig. 1, I may carry this cork layer over into the concavities of the wooden strips N. Over the cork layer P, I arrange a layer, Q, of sand-paper or other suitable polishing material, this latter layer being held in place by the clamping-rods F, as will be presently described.

By employing cork upon the outer face of the cylinder I obtain a hard smooth backing for the polishing material, this backing of

itself possessing sufficient elasticity to yield to the friction engendered by the centrifugal force of the cylinder against the surface to be polished; and I have found in practice that when said cylinder is used on wood-work there is no discoloration of the latter, and that the polished surface is perfectly smooth—a result that has hitherto been very difficult, if not impossible, to obtain. The sand-paper now on the cylinder being worn out, I turn the rod J to actuate the lugs or buttons *e* against the spring-pawls I, and thereby bring the latter out of engagement with the ratchet-wheels H. The hand-levers K L being in place, the polishing-cylinder is held stationary, while the shaft A is given a partial revolution, to cause an outward movement of the arms E, that will bring the clamping-rods F out of the concavities in said cylinder, this outward movement of said arms being caused by their eccentric connection with said shaft, as above described. The clamping-rods are now moved longitudinally to bring the enlarged portions of their key-holes *c* in line with the ends *b* of the arms E, and when this is done said clamping-rods can be readily lifted off. The worn-out polishing material on the cylinder is now removed and said cylinder wrapped with a fresh supply of such material, the latter being suitably notched or slotted to fit the arms E. The clamping-rods F are replaced and the shaft given a reverse movement to that already described, whereby these rods are again brought in the concavities of said cylinder against said polishing material and out of the line of travel of the work. The rod J having in the meantime been given a turn reverse to that already described, the lugs or buttons *e* are out of contact with the spring-pawls I, and the latter automatically engage the ratchet-wheels H to hold the arms E and clamping-rods F in the position to which they may be adjusted.

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

50 1. A polishing-cylinder having longitudinal concavities in its circumference, a series of radial arms that have their outer ends passed through the periphery of the cylinder to extend beyond said concavities, clamping-rods connected to said outer ends of the arms, and suitable means for actuating said arms to bring the clamping-rods in and out of contact with the polishing material on said cylinder, substantially as set forth.

2. A polishing-cylinder having longitudinal concavities in its circumference, a shaft for the cylinder, radial arms eccentrically connected to the shaft, and having their outer ends passed through said cylinder to extend beyond the concavities therein, clamping-rods arranged on said ends of the arms, and suitable means for holding the cylinder stationary and actuating the shaft to bring the clamping-rods in or out of contact with the polishing material on said cylinder, substantially as set forth.

3. A polishing-cylinder having longitudinal concavities in its circumference, a shaft for the cylinder provided with a series of lugs, a series of radial arms having slotted inner ends arranged on the shaft and provided with grooves or sockets to engage the lugs thereon, the outer ends of said arms passed through the cylinder to extend beyond the concavities therein, clamping-rods arranged on said outer ends of the arms, and suitable means for holding the cylinder stationary and actuating the shaft to bring the clamping-rods in or out of contact with the polishing material on said cylinder, substantially as set forth.

4. A polishing-cylinder, a shaft for the cylinder, ratchet-wheels fast on the shaft, pawls pivoted to the adjacent heads of the cylinder to normally engage the ratchet-wheels, and a pivotal rod passed through said cylinder, and provided with lugs or buttons that come under against the pawls, substantially as set forth.

5. A polishing-cylinder having longitudinal concavities in its circumference, a shaft for the cylinder, ratchet-wheels fast on the shaft, pawls pivoted to the adjacent heads of the cylinder to normally engage the ratchet-wheels, a pivotal rod passed through the cylinder and provided with lugs or buttons that come under against the pawls, a series of radial arms eccentrically connected to the shaft, and having their outer ends passed through the cylinder to extend beyond the concavities therein, clamping-rods arranged on these outer ends of the arms, and suitable means for holding said cylinder stationary and actuating the shaft, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

JAMES L. PERRY.

Witnesses:

GEO. W. YOUNG,  
N. E. OLIPHANT.