C. ERK.

Polishing Round Wooden Rod.

No. 223,722. Patented Jan. 20, 1880.

*Fig. 1.*

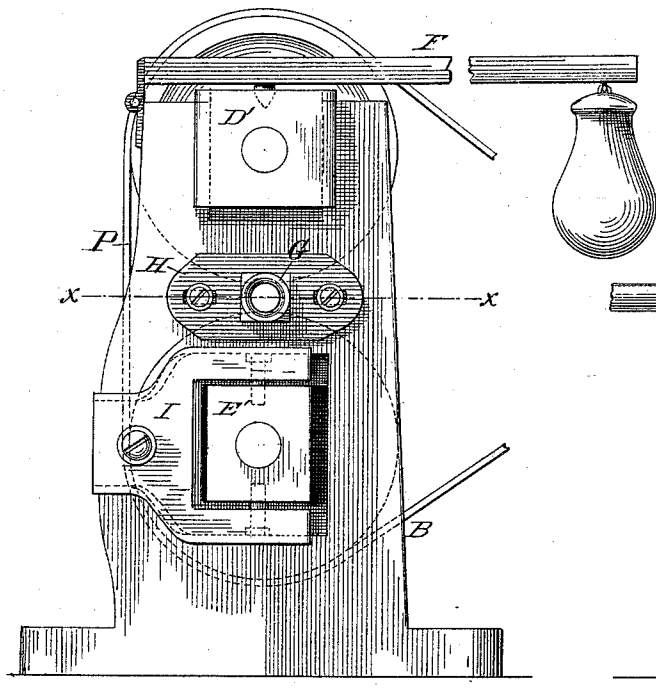



*Fig. 2.*

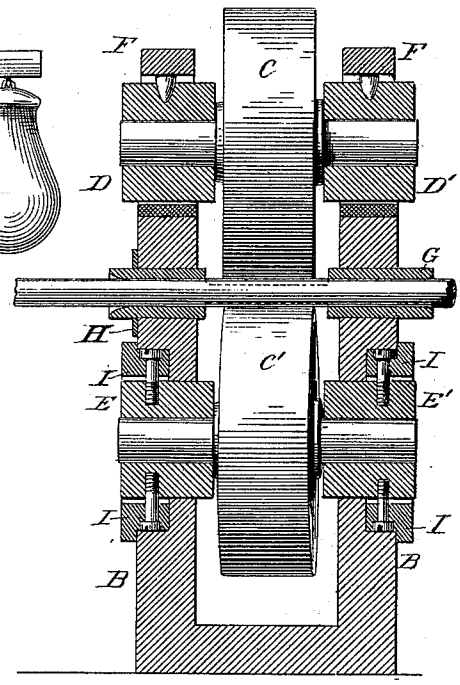



*Fig. 3.*

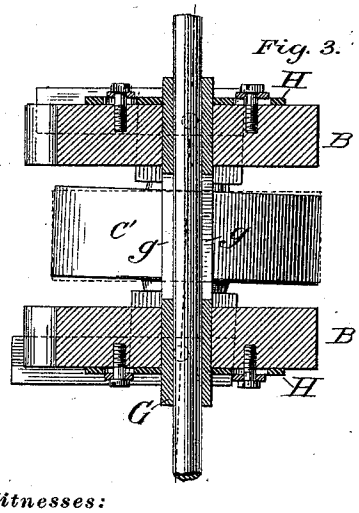
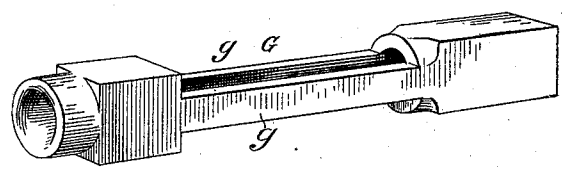



*Fig. 4.*




*Witnesses:*

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# UNITED STATES PATENT OFFICE.

CHRISTIAN ERK, OF SEELYVILLE, PENNSYLVANIA.

## POLISHING ROUND WOODEN RODS.

SPECIFICATION forming part of Letters Patent No. 223,722, dated January 20, 1880.

Application filed November 8, 1879.

*To all whom it may concern:*

Be it known that I, CHRISTIAN ERK, of Seelyville, in the county of Wayne and State of Pennsylvania, have invented certain new and useful Improvements in Polishing Round Wooden Rods; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

In the manufacture of round wooden rods intended for use as umbrella-sticks, canes, and similar articles, it has heretofore been customary to give the final polishing to such rods, preparatory to varnishing or after the first coat of varnish has been applied, by means of sand-paper, by hand—a mode which necessarily consumed much time without fully accomplishing the desired result; and, so far as I am aware, no means have yet been invented for performing the operation speedily and economically.

The machine which I have invented has for its object the polishing of these rods not only in a more thorough manner than heretofore possible, but much more rapidly and cheaply, since the device performs the work of several men in a simple, convenient, and effective manner.

My invention consists in the construction, arrangement, and means of adjusting the various operative parts of my device, all as fully hereinafter explained.

In the accompanying drawings, Figure 1 represents a side view; Fig. 2, a central cross-section; Fig. 3, a section on the line *x x*, Fig. 1 and Fig. 4, a separate view of the guide.

The same letters represent the same parts throughout the drawings.

The frame of the machine consists of a bed-piece and two upright standards, B B, which may be set up in a factory or shop in any suitable manner. C C′ are metallic drums or cylinders journaled in boxes D D′ E E′, which boxes are placed in mortises in the standards of the main frame, bringing the cylinders or wheels one above another in close proximity, their distance apart being sufficient to admit the smallest size of stick to be polished. The revolution of the cylinders is accomplished by a belt, as P, passing over both cylinders and communicating with any suitable power. By this means the cylinders are given a rapid rotation in the same direction, the points on their periphery which are in closest proximity, of course, passing each other in opposite directions. Supposing the cylinders to be in line and a round wooden rod introduced between them and passed through in contact with both, such rod would be thoroughly smoothed and polished.

In order, however, that rods of different sizes may be polished by the machine, I have devised the following means of adjusting the cylinders vertically and increasing or diminishing their distance from one another; and this mode of adjustment may be applied to both the upper and lower cylinder, if desired; but in practical use I have found that the vertical adjustment of the upper cylinder is sufficient for the purpose. The mortises in which the journal-boxes D D′ are placed are not closed at their upper end, but extend to the top of the standards, and the edges of the boxes are grooved, allowing them to slide in such mortises as far as their length will permit, but preventing any but a vertical motion. The upper cylinder may thus be raised to any height, allowing sticks of any size to be placed beneath it.

In order to maintain a constant pressure of the upper cylinder on the rod, I provide two levers, F F, which are hinged to the upper end of the standards, as shown, and have at their outer ends weights, by means of which they are kept in contact with the movable journal-boxes, and press such boxes down, and consequently keep the upper cylinder in contact with the stick. The levers are thrown back while the boxes are being adjusted. It is evident, of course, that a leaf or other spring may be used to maintain this pressure on the journal-boxes, and I do not therefore limit myself to the construction shown in the drawings.

Between the cylinders is placed a guide, G, consisting of two parallel strips, *g*, having a square head at each end, which heads rest in mortises cut in the sides of the standards, such mortises, or one of them, being a little longer

than the head of the guide for purposes of adjustment, as hereinafter described. Holes are bored through the heads large enough to permit of the insertion of the largest size of rod to be polished, and the width of the strips forming the sides of the guide between the cylinders is such that the cylinders in polishing a stick are not liable to come in contact with such guide. If it should be desired to have the guide inclose the stick tightly, it may be made in two parts, sliding on one another at the end, so that the parallel strips may approach or recede; or this adjustment may be effected in any other suitable manner. A plate, H, is placed on each side of the machine, and the heads of the guide G pass through these plates, which are adjustably secured to the main frame by screws or pins passing through slots, as shown. By loosening the screws the plates can be given a slight motion, and the guide thereby placed at an angle to the sides of the machine, which angle may be varied as desired. Supposing, therefore, the planes of rotation of the cylinders to be in line, a stick introduced between them at an angle to such planes when the cylinders are revolving in the same direction will be automatically fed through by the revolution of the cylinders, and will be polished in the operation, the speed at which the stick is fed depending upon the angle at which it is placed.

Although the device can be used to great advantage in the manner just described, I prefer the following construction, the object of which is to adjust the cylinders themselves so that their planes of revolution cross one another, and so that the stick, if introduced at right angles to the sides of the machine, will be automatically fed through on account of the peculiar position of the polishing-cylinders themselves.

In carrying out this construction I may provide for the adjustment of both cylinders, if desired; but usually it will be sufficient to change the plane of rotation of the lower cylinder alone.

The mortises which contain the journal-boxes E E′ are somewhat enlarged in both directions for the admission and free movement therein of bifurcated yokes I I, one on each side of the machine. These yokes inclose the journal-boxes on three sides, and are securely attached to them by screws or otherwise, in order that any motion of the yoke will compel the boxes to move also. The yokes are removably secured to the main frame of the machine, and it is evident that, if one of such yokes is moved forward while the other remains stationary, the polishing-cylinder will be placed with its plane of rotation at an angle to that of the other cylinder, and that this angle may be varied as desired. Under these circumstances the revolution of the cylinders will cause a rod placed on the guide to pass through, and it will be smoothed and polished in the same manner as by the other methods of operating the machine. This last construction is the one I prefer to use.

It will be evident to those skilled in the art that a great saving in time, labor, and expense is accomplished by my device. The sticks are polished in a more thorough manner and very much more rapidly than by the old method. The sticks may be passed through immediately after they are turned, or the first coat of varnish may be applied before polishing.

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

1. The combination, with the guide G, of the adjusting-plates H, substantially as and for the purposes set forth.

2. The combination, with a polishing-cylinder and its adjustable bearing, of the adjustable yoke I, substantially as and for the purposes set forth.

3. A machine for polishing round wooden rods, consisting of standards B B, cylinders C C′, adjustable journal-boxes D D′ E E′, weighted levers F F′, guide G, adjusting-plates H, and bifurcated yokes I, all constructed, arranged, and operating substantially as described and shown.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

CHRISTIAN ERK.

Witnesses:
HOMER GREEN,
JOHN MCINTOSH.