

No. 675,636.

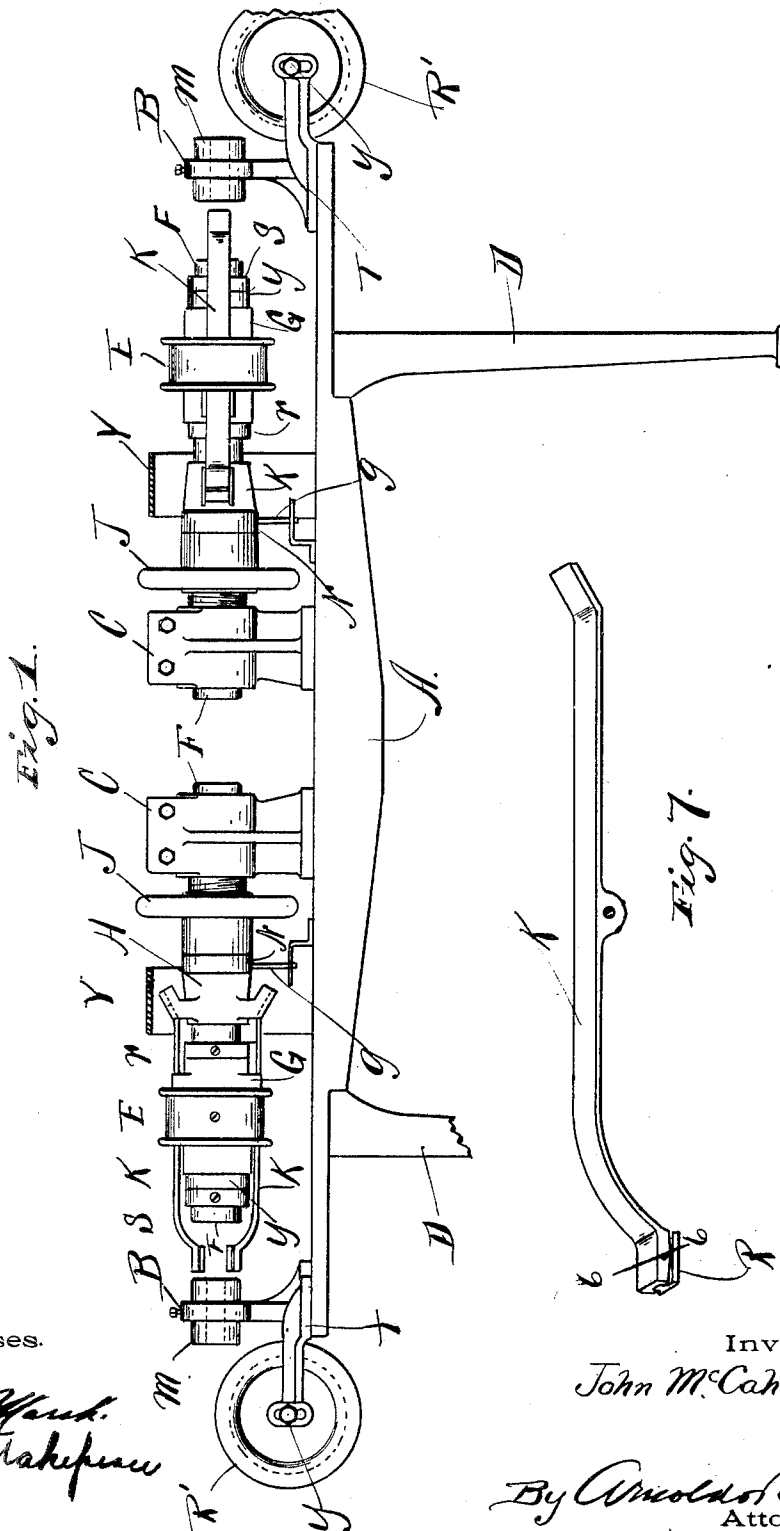
Patented June 4, 1901.

J. McCahey.
ROTARY POLISHING MACHINE.

(Application filed Apr. 4, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.

C. S. Marsh.
A. L. Makepeace

Inventor.

John M. Cahey.

By Arnold & Barber
Attorneys

No. 675,636.

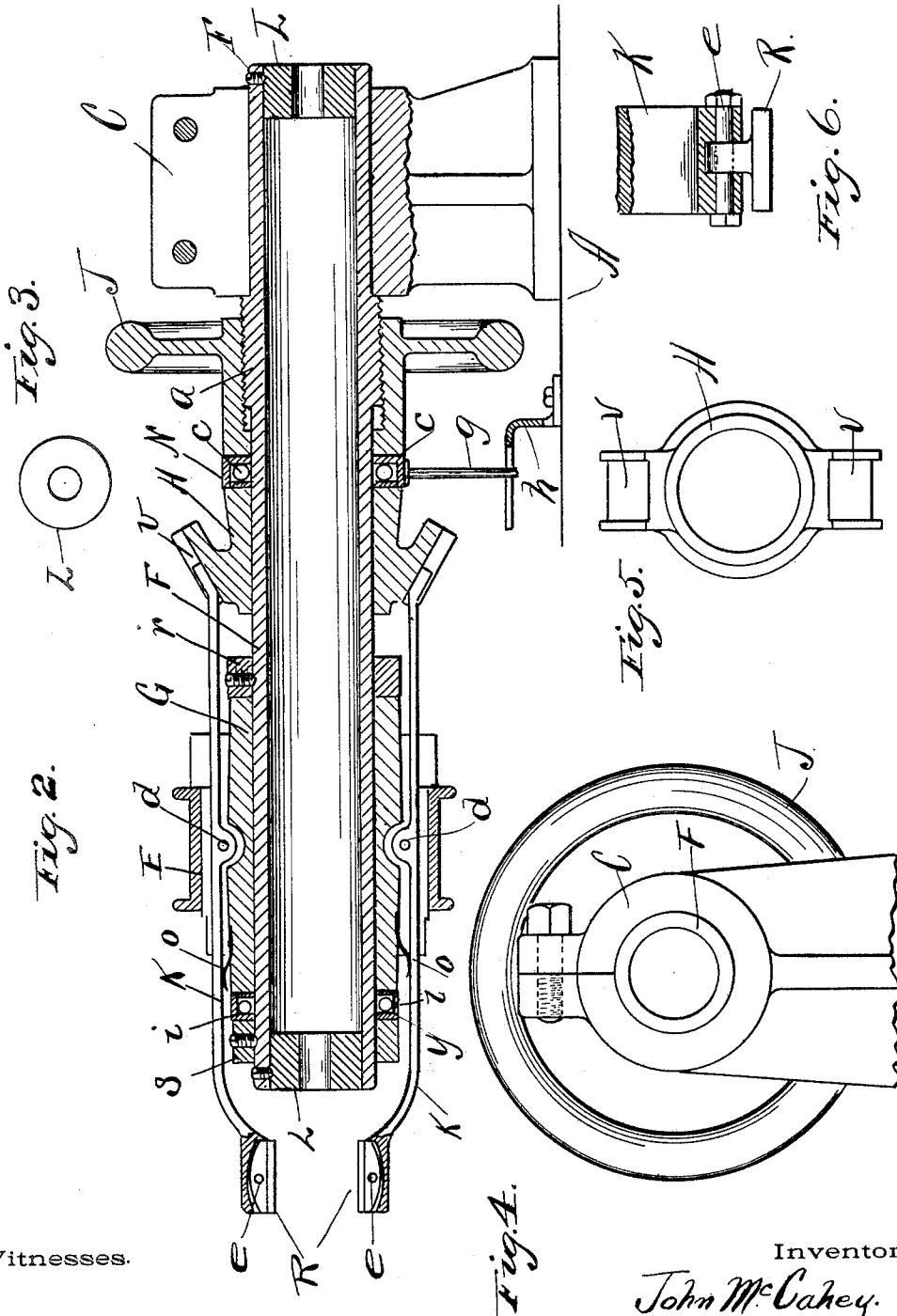
Patented June 4, 1901.

J. McCahey.
ROTARY POLISHING MACHINE.

(Application filed Apr. 4, 1901.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses.

C. S. Marsh.
A. L. Makepeace.

Inventor.

John McCahey.

By *Arnold & Barton*
Attorneys

UNITED STATES PATENT OFFICE.

JOHN MCCAHEY, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE NEW ENGLAND BUTT COMPANY, OF SAME PLACE.

ROTARY POLISHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 675,636, dated June 4, 1901.

Application filed April 4, 1901. Serial No. 54,304. (No model.)

To all whom it may concern:

Be it known that I, JOHN MCCAHEY, a resident of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Rotary Polishing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to the class of rotary polishing-machines used for polishing insulated electric cables and articles of like form.

The object of the invention is to produce a machine for this purpose in which the pressure on the article being polished can be increased or diminished, as occasion may require, while the machine is in operation, which saves the loss of time made by stopping and gives all the advantage of being able to apply a harder pressure than can safely be done when the machine is stopped; also, to arrange the parts so that the speed can be greatly increased and one machine made capable of operating on a wide range of sizes of cables, and also to allow a second coating to be applied to the cable while being polished. It is fully explained and illustrated in this specification and the annexed drawings.

Figure 1 represents a front elevation of the machine. Fig. 2 shows a vertical section, enlarged, of one half of the machine on a line taken lengthwise down through the center of the axis of revolution, the two halves being alike in construction. Fig. 3 is an end view of one of the bushings. Fig. 4 is a view of the inner end of each half of the machine. Fig. 5 is a view of the outer ends of the blocks that close the clamps. Fig. 6 shows a section of one of the clamps, taken on line 6-6, Fig. 7. Fig. 7 represents one of the polishing-clamps separate.

The construction and operation are as follows:

A is a plain bed or table supported on the two leg-frames D D, upon the top of which the four stands C C and B B are secured. The two parts of the machine from the cen-

ter to each end are exact counterparts, only reversed in position on the table A. Therefore a description of one half will suffice for both divisions.

F is a tube held fast by one end in a stand C in a horizontal position, and a screw-thread α is made on its outer surface for a short distance in from the stand C, upon which a hand-wheel J is placed, having a screw-thread made in its hub fitting in the thread α on the tube. (See Fig. 3.) A pulley E, with a long hub G, is fitted to turn freely on the tube F between a collar r and a collar S, which are both made fast on the tube by set-screws. A case, with balls i , is placed between the outer end of the hub G and the collar S to receive the outward pressure of the hub, caused mainly by the drawing of the cable through the polishing-clamps K K, which are held on pivots $d d$ in openings through the pulley.

The polishing-clamps K K consist of long flat bars pivoted near the middle and having heads on their outer ends with hard steel blocks R held on pivots e in them, so arranged as to have their faces, which are highly polished, accommodate themselves to the surface of the various sizes of cables to be polished. The inner ends of the clamps are turned outward to slide in inclined grooves V V, made in a revolving collar H, (see Fig. 5, outer end view,) which collar is fitted to revolve and slide easily on the tube F between the collar r and the hub of the wheel J. A ball-bearing is placed between the hub of the wheel J and the collar H to lessen the friction of the back thrust of the collar. This bearing consists of balls $c c$, held in a case N, that is held from turning by a rod g , fast to the case and having its lower end held in a slot in a guide h , bolted to the table A. The case N is held from turning with the collar H to prevent the wheel J from being turned by the revolving collar H. Bushing-collars L (see Fig. 3) are provided with holes to accommodate different sizes of cables, in which bushings are held the ends of the tube F by means of set-screws to guide the cable in the center of the tube, and a collar or bushing M is held in the stand B by a set-screw for the same purpose. A grooved pulley R' is held

in a forked bracket T, fast on the end of the table A, by a stud and nut y, that passes through vertical slots in the arms of the bracket, so that the pulley R' can be set
 5 higher or lower to accommodate cables of different sizes. A guard-case Y is placed over the collar H to prevent injury to the hands in turning the wheel J when the machine is running.

10 As before stated, the two halves of the machine are alike, though in Fig. 1 the revolving members of one half are shown quartering to those of the other half to give another view of the clamps. The object of having duplicate
 15 parts is to polish the cable in both directions by revolving the mechanism of one part in the opposite direction to that of the other, which may be done by means of an open and a crossed belt or otherwise, and to allow of
 20 the application of a second dressing or coating to the cable after it has had one polishing and is still warm before having the second, the space between the two divisions being left for that purpose.

25 The operation is as follows: The cable is first put through the openings in the bushing-collars in the tube in both divisions of the machine and then connected with a reel or other drawing apparatus and the machine is
 30 started, one pulley having an open belt and the other pulley a crossed belt to drive them in opposite directions. The clamps K K, which are normally held open by the small springs o o, placed under them on the outer
 35 sides of the pivots, are then closed down on the cable by turning the hand-wheels J J, which screws their hubs against the ball-bearing cases N and forces the collars H in under the rear ends of the clamp-bars K K, which
 40 opens them and closes their outer ends, with the polishing-blocks R R, together on the cable, the pivots e of the block allowing them to right themselves and bear equally their full length on the surface of the cable. The
 45 application of the pressure of the blocks on the cable while they are in motion allows of much greater pressure than can be applied with safety before starting, as is usually
 50 done, because of the high speed—about fifteen hundred turns per minute—which is liable to rupture the cable-covering with a heavy pressure on the clamps when started.

Great advantage is found in polishing the cable in both directions, as it has the effect
 55 of leveling raised places and equalizing the surface, and the pivoting of the clamp-bars in their centers and applying the force to operate them to their back ends allows of sufficient spring in the bars to cause the outer
 60 ends to operate on any hollow places as well as on the general surface of the cable. The space between the two divisions allows of the application of a coating or dressing to the cable after it has been partially polished, so
 65 that a more satisfactory finish can be made with one passage through the machine.

Having thus described my improvements, I claim as my invention and desire to secure by Letters Patent—

1. In a polishing-machine the combination 70 of two sets of polishing devices running in opposite directions and arranged to operate at the same time on a cable, with a space between the sets to allow a dressing to be applied to the cable after being partly polished 75 and before finishing, substantially as described.

2. In a polishing-machine the combination of a table, a stand secured thereto, a tube rigidly held by one end in said stand and having a screw-thread made on it, a hand-wheel 80 having a screw-thread inside its hub fitting in the screw-thread on the tube, a block with a pulley fitted to turn on the tube, clamp-bars held on pivots in said pulley, a collar 85 fitted to slide and turn on the tube and having inclined grooves in its face to receive the ends of the clamp-bars, substantially as described.

3. The combination of a stationary tube, a 90 pulley having a long hub fitted to turn on said tube, clamp-bars pivoted in said pulley, polishing-blocks held on pivots in the ends of the clamp-bars, with means for opening and closing said clamp-bars, substantially as described. 95

4. A hollow tube, in combination with a pair of revoluble clamp-bars pivoted near their centers, and means for opening and closing the outer ends of said arms while revolving, 100 substantially as described.

5. A fixed tube supported from one end, a hub arranged to rotate mounted on said tube, a pair of clamp-bars pivoted in said hub in combination with means for opening and closing 105 the outer ends of said bars while rotating, substantially as described.

6. The combination of the fixed tube, a hub arranged to rotate mounted on said tube, a pair of clamp-bars pivoted in said hub, adjustable blocks in the outer ends of said bars with means for opening and closing the outer 110 ends of said bars while rotating, substantially as described.

7. In a polishing-machine, a fixed tube, a 115 hub arranged to rotate mounted on said tube, a pair of clamp-bars pivoted in said hub, a driving-pulley fixed on said hub, in combination with means for opening and closing the outer ends of said arms while rotating, substantially as described. 120

8. In a polishing-machine a hollow tube, a pair of spring clamp-bars pivoted near their centers revolubly mounted on said tube, in combination with means for opening and closing 125 the outer ends of said bars while revolving, substantially as described.

9. In a machine for polishing cables the combination of a fixed tube rigidly supported from one end, a hub arranged to rotate on 130 said tube, a pair of clamp-bars pivoted in said hub, a collar with inclined grooves arranged

to receive the ends of said clamp-bars, with means for sliding said collar on the shaft to open and close said clamp-bars, substantially as described.

5 10. In a cable-polishing machine the combination of two rotary polishing-heads running in opposite directions with friction polishing-blocks on their outer ends, a space between said heads for applying dressing to the
10 cable, with means for adjusting at will the

pressure of the polishing-blocks on the work at each end of the machine while rotating, substantially as described.

In testimony whereof I have hereunto set my hand this 2d day of April, A. D. 1901.

JOHN McCAHEY.

Witnesses:

RUSSELL W. KNIGHT,
BENJ. ARNOLD.