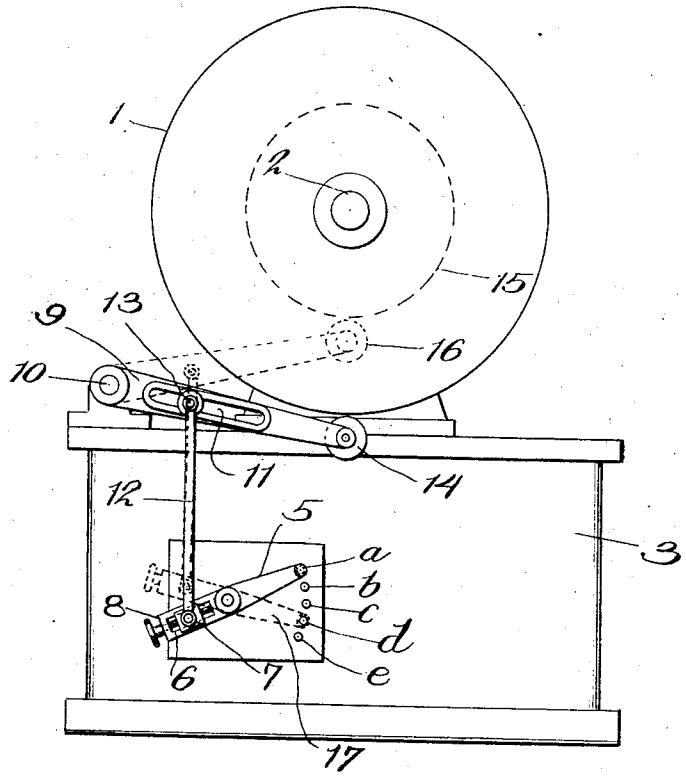
No. 766,229. PATENTED AUG. 2, 1904.

E. R. DOUGLAS.

SPEED CONTROLLER.

APPLICATION FILED FEB. 24, 1903.

NO MODEL.



WITNESSES:

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No. 766,229. Patented August 2, 1904.

UNITED STATES PATENT OFFICE.

EDWIN RUST DOUGLAS, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO CROCKER-WHEELER COMPANY, OF AMPERE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SPEED-CONTROLLER.

SPECIFICATION forming part of Letters Patent No. 766,229, dated August 2, 1904.

Application filed February 24, 1903. Serial No. 144,669. (No model.)

To all whom it may concern:

Be it known that I, EDWIN RUST DOUGLAS, a citizen of the United States of America, and a resident of East Orange, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Speed-Controllers, of which the following is a specification.

My invention relates to speed-controllers for motor-driven tools where it is desirable to regulate the speed of a revolving member according to its diameter.

There is a large variety of machines—such as emery-grinders, circular saws, buffing-machines, and the like—where the emery-wheels or circular saws, as the case may be, are frequently changed or wear from a larger to a smaller diameter at the same time. To obtain the best results with such implements, the peripheral speed should be maintained practically the same for all diameters for any given implement, or, what is the same thing, the number of revolutions per minute should vary inversely as the diameter.

The object of my invention is to provide a convenient means for readily determining and fixing the speed of the revolving member.

My invention consists in providing a movable member—such, for instance, as a lever-arm—which is adapted to have its movement in one direction limited by coming in contact with the periphery of the revolving member whose speed is to be regulated, in providing a controller for the motor which drives the revolving member, and in providing connections between the controller-handle and the movable member whereby the movement of the controller-handle and consequently the speed of the driving-motor and of the revolving member are limited by the diameter of the revolving member.

In the drawing accompanying and forming part of this specification, numeral 1 represents an emery-wheel mounted on the shaft 2.

3 represents the framework of any suitable construction for the bearings for the shaft 2, adapted to support the emery-wheel.

5 represents the controller-lever of an electric controller of any suitable construction, and it is adapted to make contact with the lugs *a*, *b*, *c*, *d*, and *e* and adapted in these successive positions from *a* to *e* to increase the speed of the motor by successive steps. The rear of the controller-lever is provided with an opening 6 and sliding block 7, the sliding block 7 being controlled in its position in the slot by means of the screw 8.

9 is a lever pivotally mounted on the stud 10 in any suitable support. The lever 9 is provided with a slot 11 and is connected with the controller-lever 5 by means of the link 12. The upper end of the link 12 is provided with a bolt 13, by means of which the position of the upper end of the link is adjusted in the slot 11 and clamped in its proper position. The end of the lever 9 carries the roller 14, which is in the plane of the wheel 1 and as the controller-lever is moved from *a* toward *e* comes in contact with the wheel 1, and thereby limits the movement of the controller-lever according to the size of the wheel 1.

15 represents in dotted lines a wheel of smaller diameter, and 16 represents the roller in the position in which it would be with the wheel 15. The position of the controller-lever would then be as represented in dotted lines at 17, making contact with the lug *d* and giving a speed proportionately higher as the wheel 15 is smaller than the wheel 1.

In the operation of the controller the controller-handle is moved in the direction from *a* to *e* until the wheel 14, which in case the wheel 1 were a circular saw would preferably be made of wood, is moved up in contact with the wheel 1 or until it is seen to be close thereto. The controller-handle is then moved back to the next lug on the controller. In this way the speed of the wheel 1 is never permitted to exceed a certain limit, which depends upon the size of the wheel.

It is well known that in order to obtain best results with revolving emery-wheels, as well as with revolving cutters of various kinds—such as milling-cutters, circular saws, and the like—a certain peripheral speed should be maintained and that a higher speed does not only fail to produce as good results, but may

be attended by danger of the wheel bursting from centrifugal force. By means of my improved device all danger from this source is removed, and the wheel itself is made to act as a gage for the speed at which it should be run. In order to provide for different grades of wheels which are adapted to run at different peripheral speeds, I provide the slots 11 and 6 in the lever 9 and controller-lever 5, respectively. By means of these slots, as will readily be understood, the adjustment may be changed to suit the varying conditions due to the different characters of the wheels used.

Having thus described my invention, what I claim is—

1. In a motor-driven tool having a revolving member, the combination with the controller and controller-handle, of a movable member adapted to move in the plane of said revoluble member, and connections between said movable member and said controller-handle.

2. In a motor-driven tool having a revoluble member, the combination with the controller, of a movable roller and connections between said movable roller and said controller-handle whereby said movable roller is made to approach the periphery of the revoluble member by the movement of the controller-handle in the direction to increase the speed.

3. In a motor-driven tool having a rotatable cutting member, the combination with a controller and controller-handle, of means connected with said controller-handle and adapted to make contact with the periphery of said rotatable cutting member whereby the movement of said controller-handle is limited by contact of said means with said rotatable cutting member.

4. In a motor-driven tool having a revoluble cutting member, the combination with the controller and controller-handle, of a lever mounted on said tool, a roller mounted in the end of said lever and connections between said lever and said controller-handle.

5. In a motor-driven tool having a revoluble cutting member, the combination with a support, of a controller mounted on said support, a lever mounted on said support adapted to swing in the plane of said revoluble member, a link connecting said lever and said controller-handle and means for adjusting the connection between said link and said lever.

6. In a motor-driven tool having a revoluble member, the combination with a support, of a controller mounted on said support, a lever mounted on said support adapted to move toward said revoluble cutting member, a link connecting said lever and said controller-handle and means for adjusting the connection between said link and said controller-handle.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWIN RUST DOUGLAS.

Witnesses:
S. N. THOMAS,
J. A. WILKINS.