

J. L. CHANTEMERLE.
 CONTROLLER FOR SMALL MOTORS.
 APPLICATION FILED JAN. 14, 1918.

1,351,023.

Patented Aug. 31, 1920.

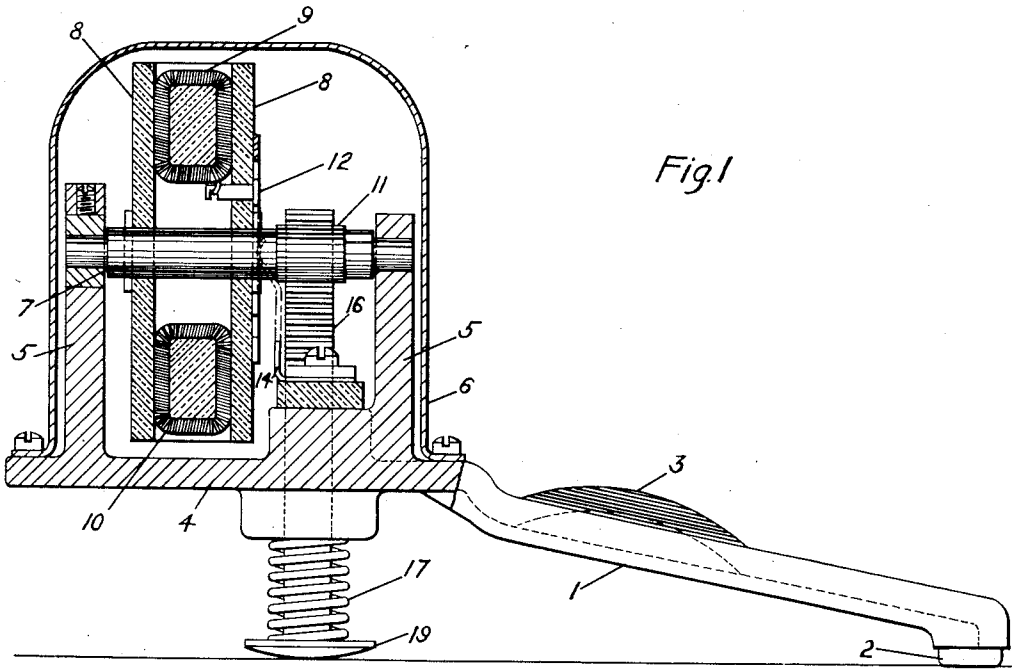


Fig. 1

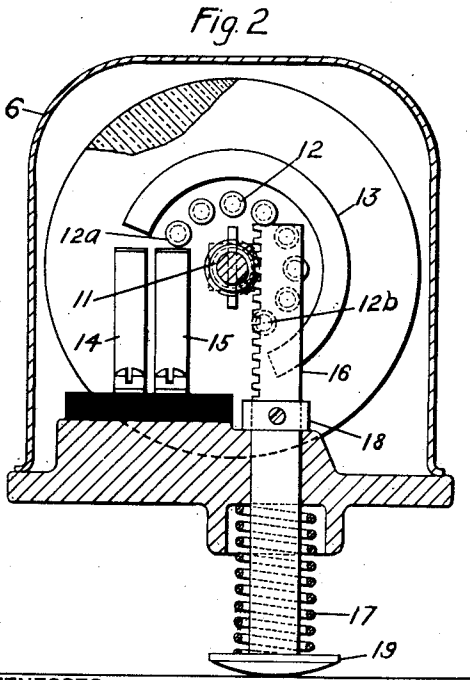


Fig. 2

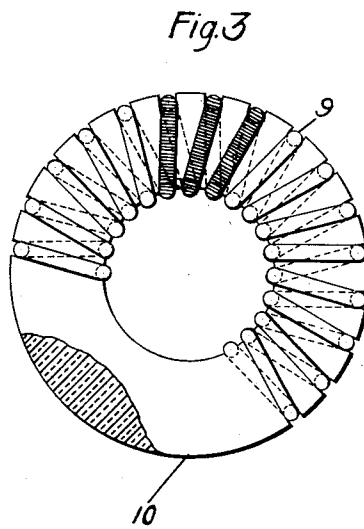


Fig. 3

WITNESSES:

W. S. Reece
a. a. Brand

INVENTOR

Joseph L. Chantemerle

BY

Merley G. Barr

ATTORNEY

UNITED STATES PATENT OFFICE.

JOSEPH L. CHANTEMERLE, OF TURTLE CREEK, PENNSYLVANIA, ASSIGNOR TO WEST-
INGHOUSE ELECTRIC AND MANUFACTURING COMPANY, A CORPORATION OF PENN-
SYLVANIA.

CONTROLLER FOR SMALL MOTORS.

1,351,023.

Specification of Letters Patent. Patented Aug. 31, 1920.

Application filed January 14, 1918. Serial No. 211,763.

To all whom it may concern:

Be it known that I, JOSEPH L. CHANTEMERLE, a citizen of the United States, and a resident of Turtle Creek, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Controllers for Small Motors, of which the following is a specification.

My invention relates to adjustable rheostats particularly adapted for foot operation as, for example, in the control of small power motors, and it has for its object to provide a device of the character designated which shall be compact, simple, inexpensive and rugged in construction and highly effective in operation.

In the accompanying drawing, Figure 1 is a side view, partially in section and partially in elevation, of a device embodying a preferred form of my invention; Fig. 2 is an end view, partially in section and partially in elevation, of the device shown in Fig. 1; and Fig. 3 is a plan view of the resistor employed in the device of Fig. 1.

In the control of small power motors, such, for example, as sewing-machine motors, it is usual to adapt an adjustable resistor for placing upon the floor, providing said resistor with suitable means for foot operation, whereby a simple and sensitive control may be insured and the necessity for operating chains or cords may be obviated. In the construction of a device of this character, it is desirable that a small motion of the foot shall cause a marked difference in the effective value of the resistor and, further, it is desirable that the device be strongly constructed and well protected in order to withstand the rough usage attendant upon its employment in the manner described.

With the desired objects in view, I preferably rotatably mount a resistor within a casing member and cause said casing member to be held away from the floor by a plunger which is pressed outwardly by a suitable spring. The plunger so engages said rotatably mounted resistor that, when the casing is pressed toward the floor, as by foot pressure, the resistor is rotated, relatively to fixed contact members, to change its effective value. By suitably connecting the fixed contact members in circuit with a current source and a motor or other current

consuming device, the desired control is attained in a well-known manner.

Referring to the drawing for a more detailed understanding of my invention, a frame member is shown at 1, said frame member comprising a floor-engaging portion 2, a foot-engaging portion 3 and a casing-supporting portion 4, said latter portion having two standards 5—5 and being provided with a suitable casing 6. A shaft 7 is journaled in the standards 5—5 and carries a pair of disks 8—8, preferably composed of insulating material, and between which is mounted a helically disposed resistor 9 wound upon an insulating ring 10. The shaft 7 is further provided with a pinion 11.

Contact members 12—12 project through one of the disks 8 to engage the resistor 9 on one side thereof and are disposed in an arc-shaped path on the other side thereof, as clearly shown in Fig. 2. One end of the resistor 9 is further connected to an arc-shaped member 13 upon the outer face of the disk 8. Two fixed contact members 14 and 15 are mounted upon the base member 4 and are adapted to engage the members 13 and 12, respectively, the arrangement being such that, for different positions of the disks 8—8, different portions of the resistor 9 are connected between the fixed contact members 14 and 15, said contact members being suitably adapted for connection to an external circuit.

A plunger 16 projects through the supporting member 4 and is pressed outwardly by a spring 17 but its outward movement is limited by a suitable collar 18. The outer end of the plunger 16 is provided with a suitable foot 19 to rest upon the floor and one edge of its inner end is provided with teeth to mesh with the teeth of the pinion 11.

Having thus described the arrangement of a device embodying my invention, the operation thereof is as follows: assuming the device to be in the position shown in Fig. 1, the plunger 16 is forced outwardly by the spring 17 to the fullest possible extent, so that the portion 4 of the frame 1 is at the maximum possible distance from the floor. The arc-shaped member 13 and the end contact button 12^a are out of contact with the fixed contact members 14 and 15, respectively, as

shown in Fig. 2. If the foot be now applied to the portion 3 of the frame 1, the entire frame structure will be pressed downwardly with respect to the plunger 16. The engagement of the rack teeth of the plunger 16 with the teeth of the pinion 11 causes rotative movement of the disks 8—8 and of the resistor 9 with respect to the casing to move the arc-shaped member 13 and the contact button 12^a into engagement with the fixed contact members 14 and 15, respectively, and include the entire resistor 9 between the members 14 and 15, thus closing the circuit, with all resistance in. Further pressure upon the portion 3 of the supporting frame causes further rotative movement of the disks 8—8, bringing the contact member 15 into successive engagement with each of the contact buttons 12—12 and eliminating more and more of the resistance until, in the final position, all resistance is out of circuit and maximum speed is obtained in the motor to be controlled or maximum current is permitted to flow to whatever type of consuming device is in circuit.

Upon removing the foot or lessening the pressure upon the portion 3 of the supporting frame, the above action is reversed. The resistance 9 is reinserted in circuit, and the circuit is finally opened, preventing further current passage.

While I have shown a revolubly mounted resistor coacting with fixed contact members, it is obvious that the structure shown might be re-organized to embody movable contact members and a fixed resistor without departing from the spirit of my invention.

While I have shown my invention in its preferred form, it will be obvious to those skilled in the art that it is susceptible of still further modifications and limitations without departing from the spirit thereof, and I desire, therefore, that only such limitations shall be placed thereupon as are imposed by the prior art or are specifically set forth in the appended claims.

I claim as my invention:

1. In an adjustable rheostat, the combination with a revolubly mounted resistor, and stationary contact fingers adapted to coact therewith, of a pedal member operatively

connected to said resistor and adapted for movement in one plane only.

2. In an adjustable rheostat, the combination with a revolubly mounted resistor, and stationary contact fingers adapted to coact therewith, of a pedal member operatively connected to said resistor and adapted for longitudinal movement only.

3. In an adjustable rheostat, the combination with a casing member, a resistor revolubly mounted therein and stationary contact fingers adapted to coact therewith, of a pedal operated plunger member projecting through the wall of said casing and adapted to rotate said resistor, said plunger being adapted for longitudinal movement only.

4. In an adjustable rheostat, the combination with a casing member, a resistor revolubly mounted therein and provided with a pinion, and stationary contact fingers adapted to coact with said resistor upon rotation of the same, of a plunger member projecting through one wall of said casing and provided with a rack which meshes with said pinion to rotate said resistor.

5. In an adjustable rheostat, the combination with a casing member, a rotatable shaft mounted therein, a resistor mounted on said shaft, a pinion fixedly mounted on said shaft, and stationary contact fingers adapted to make engagement with said resistor upon rotation of said shaft, of a plunger member projecting through one wall of said casing and provided with a rack adapted to mesh with said pinion to rotate said resistor.

6. In an adjustable rheostat, the combination with a casing member, a rotatable shaft mounted therein, a resistor mounted on said shaft, a pinion fixedly mounted on said shaft, and stationary contact fingers adapted to make engagement with said resistor upon rotation of said shaft, of a plunger member projecting through one wall of said casing and provided with a rack adapted to mesh with said pinion to rotate said resistor, and means tending to eject said plunger member from said casing.

In testimony whereof I have hereunto subscribed my name this 31st day of Dec., 1917.

JOSEPH L. CHANTEMERLE.