C. H. TEEGARDEN.

RHEOSTAT.

APPLICATION FILED OCT 18, 1918.

1,381,093. Patented June 7, 1921.

Fig. 1.

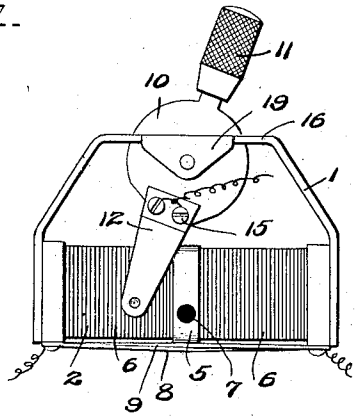


Fig. 2.

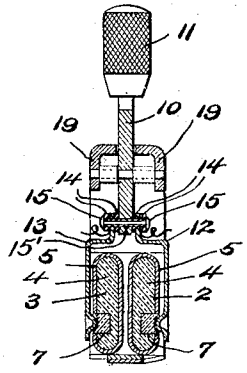


Fig. 3.

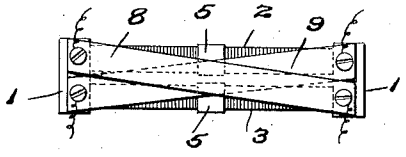
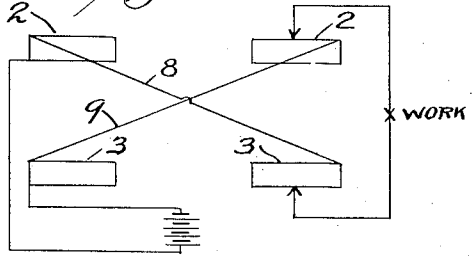


Fig 4.



Inventor
Chester H. Teegarden
By Robert H. Young
Major, A.S.C.
His Att'y

UNITED STATES PATENT OFFICE.

CHESTER H. TEEGARDEN, OF WASHINGTON, DISTRICT OF COLUMBIA.

RHEOSTAT.

1,381,093. Specification of Letters Patent. Patented June 7, 1921.

Application filed October 18, 1918. Serial No. 258,752.

To all whom it may concern:

Be it known that I, CHESTER H. TEEGARDEN, a citizen of the United States, and a resident of Washington, in the District of Columbia, have invented certain new and useful Improvements in Rheostats, of which the following is a specification.

My invention relates to rheostats and in particular to a rheostat used in connection with other devices to form a potentiometer for use in telegraphy. One of the objects of my invention is to provide a rheostat which may be encompassed in a minimum possible space and which is of rugged construction and simple design. In order to carry out this object I have incorporated in my rheostat novel features and the connection between these features and this object of the invention will appear as my device is described.

In the drawings I have illustrated the embodiment of my device which I now prefer. In these drawings Figure 1 represents a side elevation of my rheostat; Fig. 2 represents a central section; and Fig. 3 represents a bottom plan; Fig. 4 is a diagram of the wiring system showing the course of the circuit.

My rheostat comprises a U-shaped frame 1 provided with two resistors 2 and 3 secured thereto across the open end thereof. Each resistor is provided with a core 4 of insulating material which is covered with a single layer of wire 6. This wire is interrupted midway to permit the insertion of a metal strip 5 in which is inserted an insulating plug 7 interposed in the path of contact of the contact arm 12 or 13 which moves over that resistor. These arms 12 and 13 are connected to a lever 10 by means of the binding posts 15 and sleeve 15′ but are insulated from this lever by means of the insulating segments 14. The lever 10 is provided with a handle 11 and is pivoted in the ears 19 of the frame 1. Secured to the one end of the coil 2 is a cross connector 8 connected with the opposite end of the coil 3. The two remaining ends of the coils 2 and 3 are connected by the cross connector 9. These cross connectors 8 and 9 are insulated from each other.

In the use for which I have designed my rheostat it is desirable that the contact arms 12 and 13 may be insulated from the resistance in the mid-position and for this reason I have provided the insulating segments 7 embedded in the metal strip 5. By the use of my U-shaped frame I secure a very compact arrangement inasmuch as the resistors may be mounted across the open end of the frame while the contact arms may be pivoted at the base of the frame. Further the entire rheostat may be suitably mounted on the back of a panel by securing the flat base 16 of the frame 1 to the back of the panel and providing a proper opening whereby the handle 11 may extend through the panel for operation from the front thereof. By cross connecting the two resistors and causing the arms to move over them simultaneously I provide a novel arrangement for varying the resistance.

While I have described my resistors as consisting of an insulating core wound with a single layer of wire, and while I use an insulated wire and remove the insulation in the path of contact of the arms 12 and 13, I am aware that other methods of contact could be used, such for example, as the provision of a separate row of contact segments connected to intermediate points of the resistance winding. I am also aware that it may be found desirable to use impedance other than resistance. I consider any such change to be within the scope of my invention and I also consider as within the scope of my invention all modifications or improvements of my rheostat which are included in the scope of the appended claims.

Having described the preferred embodiment of my invention, I claim:

1. A rheostat comprising a U-shaped frame, a pair of impedance elements supported side by side across the open end of said frame, a lever pivoted in said frame at the base thereof, two contact arms carried by said lever on opposite sides thereof, each contact arm being positioned to make wiping contact over the outer side of one of said impedance elements, and an insulating segment interposed in each impedance element to insulate that element from the arm at that point.

2. A rheostat comprising a U-shaped frame, a pair of impedance elements supported across the open end of said frame, a lever pivoted in said frame at the base thereof, two contact arms carried by said lever, each arm being positioned to make wiping contact over one of said impedance elements, and an insulating segment interposed in each impedance element to insulate that element from the arm at that point.

3. A rheostat comprising an open ended frame, a pair of impedance elements supported across an open end of said frame, a lever, two contact arms carried by said lever, means for respectively connecting said arms with varying portions of said impedance elements, and an insulating segment interposed in each impedance element to insulate that element from the arm at that point.

4. A rheostat comprising a frame, a pair of impedance elements oppositely supported by said frame, a lever, two oppositely extending contact arms carried by said lever, each arm being positioned to contact along one of said impedance elements, and an insulating segment interposed in each impedance element to insulate that element from the arm at that point.

5. A rheostat comprising a U-shaped frame, a pair of impedance elements supported across the open end of said frame, a lever, and two contact arms carried by said lever, each arm being positioned to contact along one of said impedance elements.

6. A rheostat comprising a frame, a pair of impedance elements supported by said frame, contact means positioned to contact along said impedance elements, and an insulating segment interposed in each impedance element to insulate that element from the contact means at that point.

7. A rheostat comprising a U-shaped frame, a pair of impedance elements supported across the open end of said frame, and contact means positioned to contact along said impedance elements.

8. A rheostat comprising an open ended frame, a pair of resistance elements supported side by side across an open end of said frame, a lever, two contact arms carried by said lever, means for connecting said contact arms respectively with varying portions of said resistance elements, an insulating element interposed in each resistance element to insulate that element from one of said contact arms and means connecting one end of each of said resistance elements to the other end of the other of said resistance elements, respectively.

In testimony whereof I affix my signature

CHESTER H. TEEGARDEN.