

(No Model.)

W. MEREDITH.
RHEOSTAT.

No. 513,126.

Patented Jan. 23, 1894.

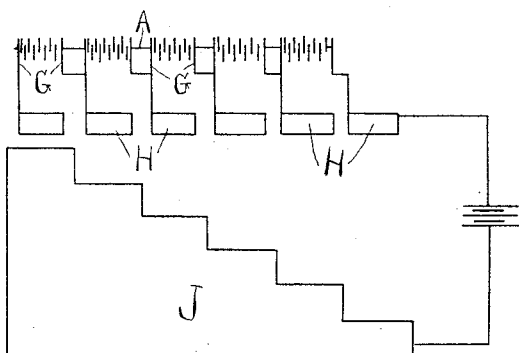


FIG 1

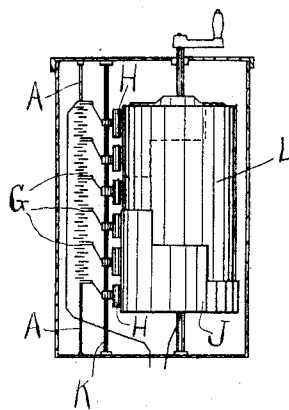


FIG 2

FIG 3

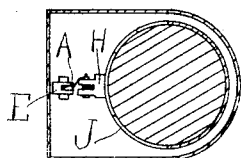


FIG 4

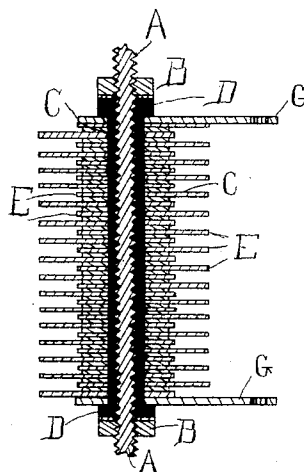
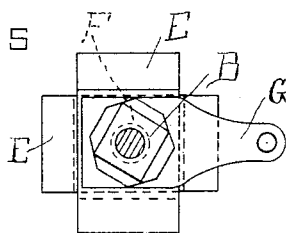


FIG 5



WITNESSES

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RHEOSTAT.

SPECIFICATION forming part of Letters Patent No. 513,126, dated January 23, 1894.

Application filed April 20, 1892. Serial No. 429,897. (No model.)

To all whom it may concern:

Be it known that I, WYNN MEREDITH, a citizen of the United States, residing at Aurora, county of Kane, and State of Illinois, have invented a new and useful Improvement in Rheostats, of which the following is a specification.

My invention relates to rheostats or resistances, and has for its object to provide a cheap, simple and convenient rheostat, and especially one in which the heating of the members of the rheostat is obviated to a considerable degree. It is illustrated in the accompanying drawings, wherein—

Figure 1 is a diagrammatic view of the rheostat showing the circuits. Fig. 2 is a vertical section of a rheostat inclosed in a case. Fig. 3 is a cross sectional view of the rheostat. Fig. 4 is a vertical section of the rheostat proper. Fig. 5 is a plan view of same.

Like parts are indicated by the same letter in all the figures.

A is a rod or bolt by which the parts are secured together and it may be provided at either end with the securing screw nuts B B. The rod is sheathed with an insulation, C, and at each end beneath the securing nut is preferably placed the insulation D D so as to keep the parts in circuit insulated from the securing parts.

E E are a series of flat metallic plates, which may be of ordinary iron more or less oxidized on the surface, as may be found desirable, and each is provided with an aperture F, near one end, through which the insulated bolt passes.

G G are the terminal pieces or blocks by which the rheostat may be divided up into sections or portions, and each terminal is preferably connected with a fixed contact block or plate H H, which contact blocks are so disposed as to be brought successively in contact with the circuit closing plate J.

In making up the body of the rheostat, the plates E E are arranged in the manner indicated, being built up into a mass which is centrally solid by the overlapping perforated ends of the plates, while the unperforated ends project from such center or mass so built up in the four directions indicated, thus leaving the unperforated ends free and exposed and projecting from the mass of metal through

which the current passes. It would be obvious that the size and shape of these plates, as well as their arrangement in the mass, might be greatly varied without departing from the spirit of this invention, for the essential feature of the invention at this point consists in providing a mass of iron through which the current passes and from which there projects a series of free and exposed portions of said mass whereby the heat by conduction and radiation is carried away from the central mass through which the current passes and is dissipated in the air which circulates about and along the rheostat. Instead of a single bolt, of course the plates could be secured together in many different ways, and any means whereby plates are built up into a mass would be sufficient.

K is a rod on which the contact blocks H H are secured and insulated from each other.

L is a drum on which the circuit closing plate J is supported.

The use and operation of my invention are so far evident as to require no extended discussion. I have suggested its application to a street car, where the central mass would be extended for a considerable length, perhaps two feet, and disposed in a vertical position within a fixed cylinder, provided with a rod on which are placed the several contact plates H H connected with the several terminal pieces. About a drum within the cylinder is disposed the moving part containing the spirally notched or cut away circuit closing plate J, which as it is rotated successively brings into contact the several plates. I have indicated diagrammatically a battery in circuit in lieu of the street car appliances see Fig. 1 though all of this is merely conventional and for the purpose of suggesting in a general way the application of the rheostat. Of course when the plate J is moved far enough to bring the left hand contact piece H see Fig. 1 in engagement with such plate, the whole of the rheostat is in circuit. By moving the plate J a little farther, the next contact is engaged and a portion of the rheostat cut out, and so on till the whole is excluded from the circuit, if that be desired. The circulation of the air about the free and exposed projecting ends of the plates in the rheostat results in carrying away a great por-

tion of the heat which otherwise would interfere with the proper action of the rheostat.

I claim—

1. In a rheostat the combination of a series
5 of thin plates, perforated each at one end,
with a bolt which passes through such perforations and is insulated from the plates, and
terminals whereby the solid mass of plates is
brought into circuit and the free ends are left
10 exposed to reduce the heat of the mass.

2. The combination in a rheostat of a series
of thin plates perforated at one end, a bolt

passing through such perforation by which
the ends of the plates are held in contact with
each other, contact plates connected to such
thin plates so as to divide the resistance into
sections and a revolving drum by which such
sections can be cut in or out of circuit, sub-
stantially as described.

WYNN MEREDITH.

In presence of—

EARL HOLMS RICHARDSON,
EDWIN EDGAR DYER.