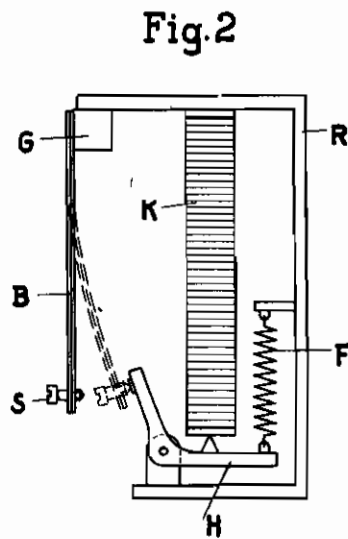
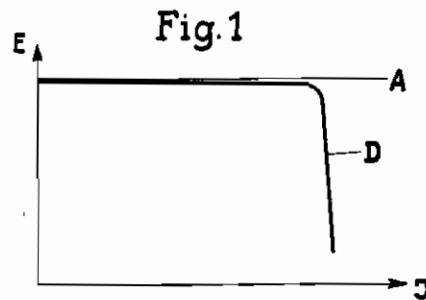


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ELECTRIC CURRENT REGULATOR WITH PRESSURE  
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# ALIEN PROPERTY CUSTODIAN

## ELECTRIC CURRENT REGULATOR WITH PRESSURE LOADED CARBON-PILE COLUMN

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This invention concerns a regulating arrangement for electric current circuits, which retains the potential up to a determined current limit, and upon an increase regulates a lower potential, that is to say with a broken characteristic.

A characteristic of this kind is shown in Fig. 1, and portrays the potential dependent upon current. A is the characteristic parallel to abscissa for a constant potential, and the curve D shows a practically constant potential within the permitted loading limit, when it drops suddenly effecting a strong influence.

For this purpose the magnets which control the carbon column have a second winding, namely a current-winding connected in parallel with a constantly adjustable resistance, e. g. a carbon-pile column controlled by a hot-wire through which the consumed current flows. A supplementary coil of this type can be combined with the voltage coil normally provided.

In certain instances arrangements of this type have to control considerably high currents, therefore the use of a hot-wire sometimes presents difficulties, and for this reason it is proposed according to invention to utilize a bimetal arrangement, whose loose end after traversing a free path presses on the carbon column through a ratio appliance which equalizes the form variation between bimetal and carbon column, e. g. a lever. These bimetal arrangements are to be had today in a very perfected stage, and permit a very simple constructional form of voltage regulator for currents up to practically any desired limit.

In Fig. 2 a principal application example is given, and shows frame R with carbon column K fixed at the top, next to it the bimetal element B fitted by means of mounting block G, to the right-hand side spring F which exercises the necessary pressure on the carbon column, and at the bottom the bearing for ratio appliance H. The free end of bimetal element B has an adjusting screw S; and when out of operation, that is to say when cold and no current is passing there is a gap between said screw S and the left-hand arm of lever H, which may be increased or decreased by this screw S. In diagram 2 the position of bimetal element B during calefaction is shown lineated, further, during this initial process no influence is effected upon the carbon column since screw S must first traverse the free path to lever H. When the highest permissible current limit is reached screw S contacts with the lever, any further warming due to a rise in current causes bimetal element B to press the left-hand arm of lever H exercising a pressure effect contrary to the spring, consequently the pressure on carbon column K is decreased and a higher resistance is put into operation. This transformed resistance, as shown in the principal patent, has as a result, that the voltage regulator regulates a lower potential. It follows that the described arrangement has the same broken current-voltage characteristic as the well known arrangements.

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