

E. GARRETSON.
 TELEPHONE CURRENT SELECTOR.
 APPLICATION FILED MAY 8, 1906

985,024.

Patented Feb. 21, 1911.

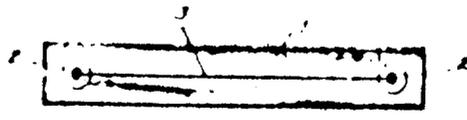


Fig. 1.

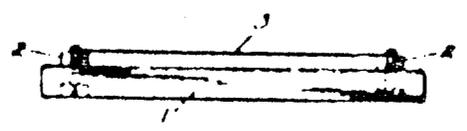


Fig. 2.



Fig. 3.

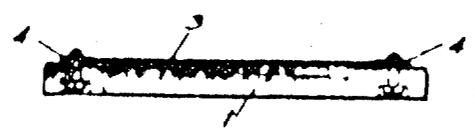


Fig. 4.

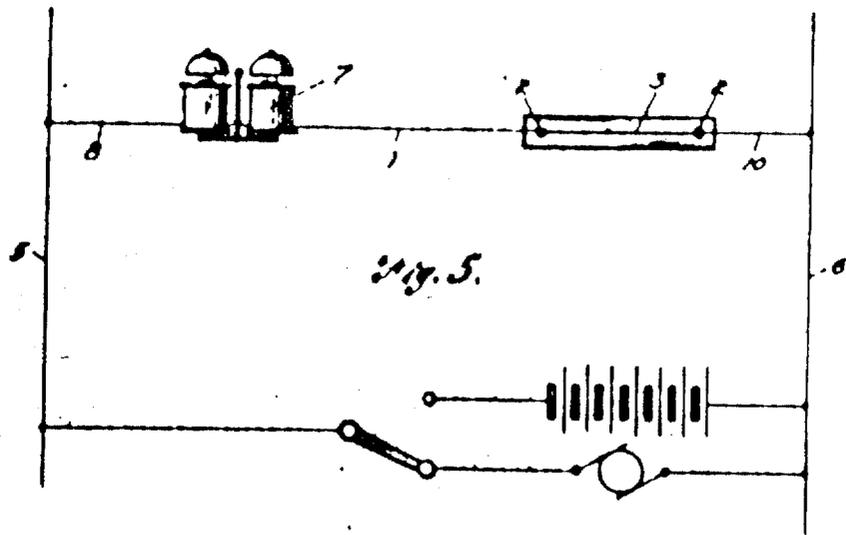


Fig. 5.

WITNESSES:
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985,024. TELEPHONE CURRENT-SELECTOR. EUGENE GARRETSON, Buffalo, N. Y., assignor of five one-hundredths to Christopher H. Bierbaum, ten one-hundredths to Arthur L. Fox, and thirty-five one-hundredths to George H. Calkins, Buffalo, N. Y., twelve and one-half one-hundredths to George R. Fuller and twelve and one-half one-hundredths to J. W. Morrison, Jr., Rochester, N. Y., and twenty one-hundredths to Harold F. Hayes. Filed May 5, 1908. Serial No. 430,971.

To all whom it may concern:

Be it known that I, EUGENE GARRETSON, a citizen of the United States, and a resident of the city of Buffalo, county of Erie, and State of New York, have invented certain new and useful Improvements in Telephone Current-Selectors, of which the following is a full, clear, and exact description.

My invention relates to telephone current selectors generally and has for its chief object the production of means for distinguishing between various pressures on telephone circuits, as applied to telephone ringers or other mechanism.

It will be clear to those skilled in the art that other useful and advantageous results will follow from the use of my invention as herein described.

It is well-known that condensers have been used for the purpose of obtaining the object above set forth but such condensers have been, when practically applied, both cumbersome and expensive as well as fragile and liable to puncture by static discharges.

By means of the invention herein described the object above set forth is attained in such a way that the device is much cheaper, less cumbersome and more reliable than the condensers heretofore used for such purposes and moreover it is much simpler in construction and more easily installed than a condenser.

Referring now to the accompanying drawings in which like characters of reference indicate corresponding parts throughout the different figures, Figure 1 is a plan view of one form of my invention. Fig. 2 is a side elevation of Fig. 1. Fig. 3 is a plan view of a modified form of my invention. Fig. 4 is a side elevation of Fig. 3. Fig. 5 shows my invention as applied to a telephone circuit.

1 is a base of any suitable insulating material upon which are mounted conducting terminals 2.

3 is a filament of argentite or other metallic oxid or compound. This filament is suitably connected to the terminals 2.

Referring now to the modified form of my invention as shown in Figs. 3 and 4, the same insulating base 1 is used in this form

as in the form shown in Figs. 1 and 2, and likewise I use in this form a filament 3 of the same character as the filament 3 shown in Figs. 1 and 2. The filament in Figs. 3 and 4 is in contact with the clip terminals 4. These clip terminals 4 are of such material and adjustment that a contact resistance exists between them and the filament 3. As is well-known a contact resistance varies with and is greatly dependent upon the pressure of the current flowing so that by this means I am able to attain a greater selective effect between currents of different pressures than it is possible to attain by means of the conducting terminals 2.

Either the form of my invention shown in Figs. 1 and 2 or that shown in Figs. 3 and 4 may be applied to a telephonic circuit in the manner shown in Fig. 5. In this figure the wire 5 is a part of a circuit from a constant or regulable source of energy and wire 6 is in the same circuit. 7 represents a ringing mechanism or any other electrically operated telephone device of the usual construction used in telephonic circuits. The device 7 is connected with the wire 5 by wire 8 and is connected to one of the terminals of my selective device by the wire 9; the other terminal of my selective device being in turn connected to the wire 6 by the wire 10.

I have already described the characteristics of the filament 3 but it should be here noted that in the preparation of this filament I prefer to use those compounds which have a negative temperature coefficient. With such a filament the heat generated

by the leakage current at moderately low pressures being negligibly small is radiated and the resistance of the filament remains constant. A sufficiently greater pressure however causes a current to flow which effects a rise of temperature in the filament and reduces its resistance whereby the selective effect obtained is much enhanced.

It will be clear to those skilled in the art that by use of my invention as above described I am able to maintain in telephonic circuits a fixed and high resistance at low pressures thus preventing the flow to any great extent of currents, but which at higher pressure permits the flow of currents greater in proportion thereto (or disproportionately large to such increased pressure). In a particular adaptation of my invention as shown in Fig. 5 a battery pressure of some certain voltage will cause little leakage through a high resistance filament such as 3 but a greater current of increased pressure employed for actuating the mechanism 7 will cause a greater flow of current which is amply sufficient for the purpose.

It will be understood of course, that the resistance of the filament 3 may be regulated in proportion to the pressure of the current

2

used. Such filament resistance being such that but a slight current will flow at moderately low pressures but at higher pressures a sufficiently great current will flow for the purpose desired.

It will be understood of course that it is not necessary to use in my invention a resistance material in the form of a filament but instead thereof we may use a bar or other conductor of suitable form having the characteristics of the filament as hereinbefore described. It will be further evident to those skilled in the art that the character of the contact resistance as shown in Figs. 3 and 4 may be varied somewhat as desired by composition, form and mechanical adjustments of the various parts.

Having thus described my invention, what I claim is:

1. In a telephone circuit the combination with a regulable source of energy, an electrically actuated device and a circuit connecting said device with said source of energy; of a variable resistance unit comprising a filament of resistance material having a negative temperature coefficient and being connected between the terminals of said source of energy whereby when the said material conducts a small flow of current the heat generated is radiated but a flow of current due to increased pressure will raise the temperature of the filament and reduce its resistance, thus enhancing the current flow and thereby producing a greatly increased conductive effect.

2. In a telephone circuit, the combination with a regular source of energy, an electrically actuated device and a circuit connecting said device with said source of energy; of a variable resistance unit comprising a filament of argentite connected between the terminals of said source of energy whereby when the said argentite conducts a small flow of current the heat generated is radiated but a flow of current due to increased pressure will raise the temperature of the filament and reduce its resistance thus enhancing the current flow and thereby producing a greatly increased conductive effect.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

EUGENE GARRETSON.

Witnesses:

ETHEL A. KELLY,
G. H. CALKINS.