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CONNECTING ARRANGEMENT FOR DISCHARGING DEVICES

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Fig. 1

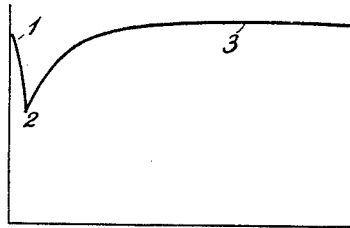


Fig. 2

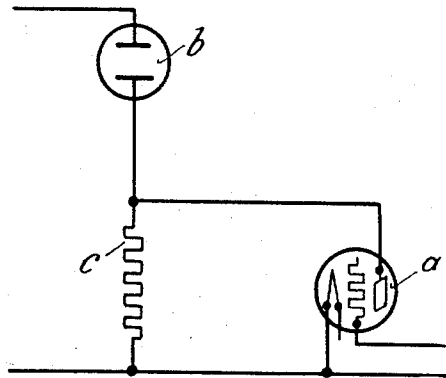
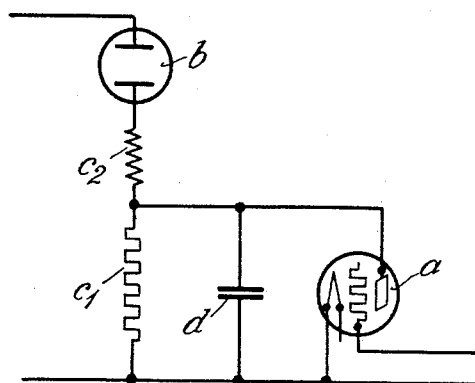


Fig. 3



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CONNECTING ARRANGEMENT FOR
DISCHARGING DEVICESLadislau Kőrös, Berlin-Tempelhof, Germany,
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406,487, and in Hungary November 15, 1928

4 Claims. (Cl. 171-312)

The present invention relates to an arrangement which will permit the terminal voltage for a consumer, which may be a three element vacuum tube, to be kept constant not only within narrow limits, but also within relatively wide limits. The invention utilizes the effect of a sparking or discharge device, such as a glow tube, connected in series with slightly loaded or temporarily unloaded consumers. The present invention is characterized in that an additional resistance is connected in parallel to the consumer, which resistance is so dimensioned that the sparking or discharge device will always work on the rising portion of its characteristic even with the slightest load on the consumer.

An embodiment of the arrangement according to this invention is illustrated by way of example in the drawing.

Figure 1 shows diagrammatically the characteristic of a discharge device (luminous or glow tube),

Figures 2 and 3 are diagrammatic views of modified connections.

Referring to Figure 1 the characteristic consists of an inclining portion 1 which merges at the point 2 into the rising portion 3. On this portion 3 the arrangement according to the invention will be operated.

For that purpose an additional resistance, as already mentioned is connected in parallel to the consumer, which is a triode in the arrangement illustrated by way of example in Figures 2 and 3.

The consumer is represented, as stated by a triode *a*, whose anode circuit is connected in series with the sparking or discharge device *b*. A resistance *c* is connected in parallel with the consumer *a*, which represents a point of consumption of the excess current. Said resistance can consist of an ohmic or an inductive resistance, or also of a discharge tube. It must only possess a physical property which increases the load on the discharge tube *b* to such an extent that the device will constantly operate on the rising portion of its characteristic.

With the connection shown in Figure 3 there is provided a potentiometer arrangement, since periodic discharges of a condenser connected in parallel with the consumer *a* are to be avoided. Thus the consumer will exert a capacity effect. The part *c*₁ of the auxiliary resistance may be of any suitable type, while *c*₂ must be a resistance which possesses an increasing voltage drop at an increasing intensity of current, and whose value is high enough to prevent periodic discharges of the condenser. At the least, the value of *c*₂ must be so high that the discharges will take place so slowly that their disturbing actions will be insignificant, or so small that no material

fluctuations of voltage are caused in the circuit of the useful consumer *a*.

The arrangement according to this invention may be used to advantage in instances where the strain or load on the consumer *a* is only slight, as for instance with electronic tubes previous to their becoming sufficiently heated, or where the load decreases periodically, as for instance with electronic tubes which serve for the generation or amplification of oscillations.

I claim:

1. In a system for maintaining the terminal voltage of electric supply lines at their points of connection to a consumer, the combination of an electric discharge path arranged in the lines solely in series with the consumer whereby no consumer is arranged in parallel with the discharge path, the voltage characteristic of said discharge path being such as to provide an initial falling portion and a subsequent rising portion terminating in a portion of constant voltage, and a resistance arranged in the lines in parallel with the consumer, said resistance being proportioned so that said discharge path will operate on the rising portion of its resistance characteristic irrespective of the load on the consumer.

2. The combination for the purpose and of the character recited by claim 1 which has a second resistance having the characteristic of increasing in resistance upon an increase in current, arranged in the lines in series with the said electric discharge path.

3. In a system for maintaining the terminal voltage of electric supply lines at their points of connection to a consumer which latter may have a capacitive effect, the combination of an electric discharge path arranged in the lines in series with the consumer, a resistance arranged in the lines in parallel with the consumer, and a second resistance arranged in the lines in series with said discharge tube, the first named of said resistances being proportioned so that said discharge path will operate on the rising portion of its resistance characteristic irrespective of the load on the consumer, and said second resistance being proportioned to prevent periodical discharges of the consumer if and when it has a capacitive effect.

4. In a system for maintaining the terminal voltage of electric supply lines at their points of connection to a consumer, a pair of supply lines, a glow tube in the first of said supply lines, a resistance connected in series with the glow tube in said first line on the side adjacent the consumer, a second resistance in parallel with the consumer, and a condenser in parallel with the consumer.

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