

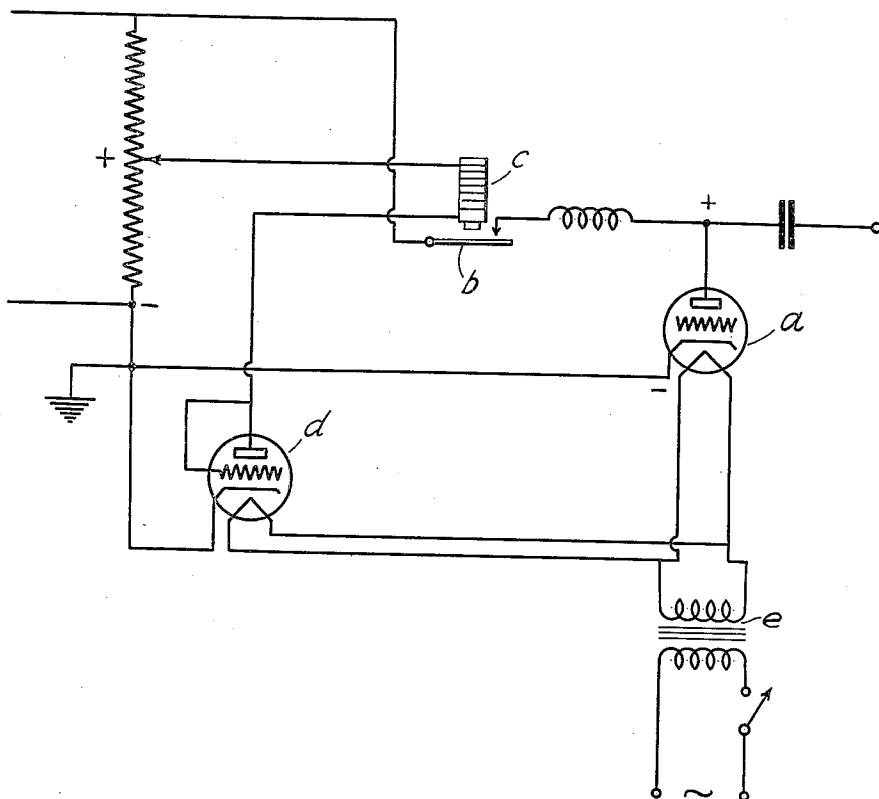
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TIME LAG CATHODE CIRCUIT ARRANGEMENT

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TIME-LAG CATHODE CIRCUIT
ARRANGEMENT

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2 Claims. (Cl. 250—27)

This invention relates to an arrangement for
retarding the connection of direct current plate
potential in indirectly heated tubes.

5 An object of this invention is to simplify and
improve the control of cathode circuits.

10 It is known that when starting the operation
of indirectly heated tubes of more than average
power, the connection of the plate potential sup-
ply must be delayed until the indirectly heated
electron emission surface of the cathode has been
15 uniformly incandesced. As a general rule this
takes about from 45 to 65 seconds. For the pur-
pose of insuring the said lag in the connection of
the plate potential, recourse in the prior art has
usually been to a mechanical time switch. How-
ever, such a device is comparatively cumbersome
and expensive.

20 Now, according to this invention a relatively
small and inexpensive indirectly heated auxiliary
tube is provided instead of a mechanical time-lag
switch of the kind before mentioned.

25 One exemplified embodiment of the basic idea
of the invention is schematically illustrated in
the drawing. Referring to the latter, *a* is an
indirectly heated transmitter tube of compara-
tively large power, for which connection of the
plate voltage source must be effected a certain
length of time after connection of the heating or
30 filament circuit. The plate circuit of the same
contains the switch knife *b* of a time-lag switch
whose energizing winding *c* is contained in the
plate circuit of an auxiliary tube *d* of lower power
which is also of the indirectly heated type. The
35 auxiliary tube *d* is heated from the same trans-
former *e* as the transmitter tube *a*, thus insuring

the same degree of heat being applied to each
tube.

I claim:

1. A time delay circuit arrangement to retard
the connection of the direct current voltage of a
comparatively large power transmitter tube com-
prising a source of anode potential, a resistance
across said anode potential source, a relay having
its armature connected in series with one side
10 of said source of anode potential and the anode
of said transmitter tube, the other side of said
voltage supply being connected to the cathode
of said transmitter tube, said relay having its
winding energized by being connected to an inter-
mediate point on said resistance and in series with
15 an indirectly heated auxiliary tube anode which
tube is connected at its cathode to the other side
of said plate supply.

2. A time delay circuit arrangement to retard
the connection of the direct current voltage of a
comparatively large power transmitter tube com-
prising a source of anode potential, a resistance
across said anode potential source, a relay having
its armature connected in series with one side of
said source of anode potential and the anode of
25 said transmitter tube, the other side of said volt-
age supply being connected to the cathode of said
transmitter tube, said relay having its winding
energized by being connected to an intermediate
point on said resistance and in series with an in-
directly heated auxiliary tube anode which tube
30 is connected at its cathode to the other side of said
plate supply, and a transformer for heating the
cathodes of both the transmitted tube and said
auxiliary tube.

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