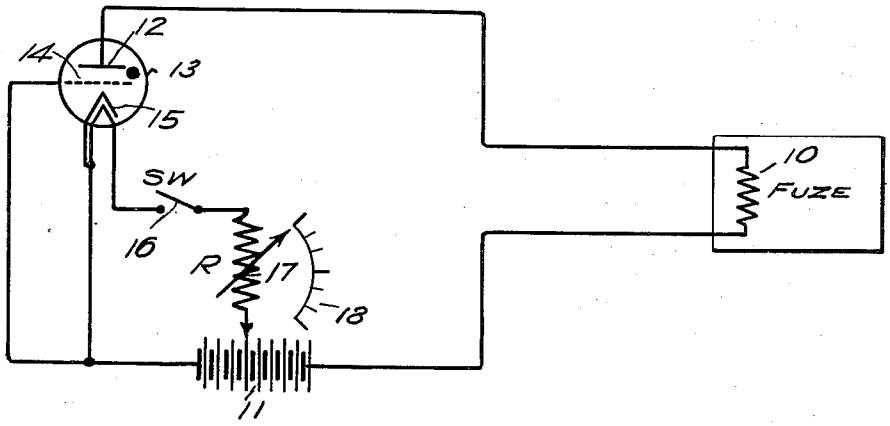
March 21, 1950 N. J. OLIVER 2,501,082

DELAYED ACTION ELECTRIC FLARE FUSE

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DELAYED-ACTION ELECTRIC FLARE FUSE

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2 Claims. (Cl. 102—70.2)

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The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment of any royalty thereon.

This invention relates to setting off the fuze of a bomb within a predetermined adjustable time after the bomb is released from aircraft.

The nature of the invention is that the fuze is energized when the plate current of a vacuum tube reaches a given value.

The drawing is a diagrammatic showing of the invention.

In the drawing the fuze has a fine low melting wire 10 which is melted by a given current from battery 11 through plate 12 of vacuum tube 13 (which may be the commercial type 884). The tube 13 has a grid 14 connected to its cathode 15. A starting switch 16 is so arranged as to be closed when the bomb is released. A filament rheostat 17 has a knob which indicates the amount of resistance hence the time required for operation on a graduated scale 18.

In operation, the rheostat 17 is adjusted, according to scale 18 for the desired time. When the bomb is released the switch 16 is closed and energizes the filament or cathode 15 which takes a predetermined time to heat to electron emission temperature depending for that time on the setting of rheostat 17. The time may be accurately set over the ranges of two to thirty seconds with accuracies of plus or minus one-tenth second. When the filament reaches a certain critical temperature the plate current begins to flow, rising suddenly to a relatively high valve in the plate circuit 12 in sufficient quantity to melt fuze wire 10.

I claim to have invented:

1. A control system for bombs comprising a fuse having a low-melting-point fine wire, which upon melting sets off the bomb, a gaseous tube having a cathode and an anode, said cathode having a predetermined thermal time lag characteristic and a critical temperature at which said tube will "fire," a battery, means connecting the battery, the cathode and anode of said tube and said wire in series, means for heating the cathode, and adjustable resistance means in series with said cathode for presetting the time of operation of said control system, whereby after the elapse of said time the cathode reaches said critical temperature which triggers said tube producing a relatively high anode current through said fuze causing it to melt.

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2. A control system for bombs comprising a fuze having a low-melting-point fine wire, which upon melting sets off the bomb, a gaseous tube having a cathode and an anode, said tube having a critical anode-potential-to-cathode temperature point at which the tube "fires" to produce a relatively high anode current for melting said fuze, said cathode having a predetermined thermal time lag characteristic, a battery, means connecting the battery, the cathode and anode of said tube and said wire in series, means for heating the cathode, and adjustable means in series with said cathode for presetting the time of operation of said control system, whereby after being preset the cathode reaches said point after a predetermined lapse of time, triggering the tube to produce said current thereby melting said fuze.

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