

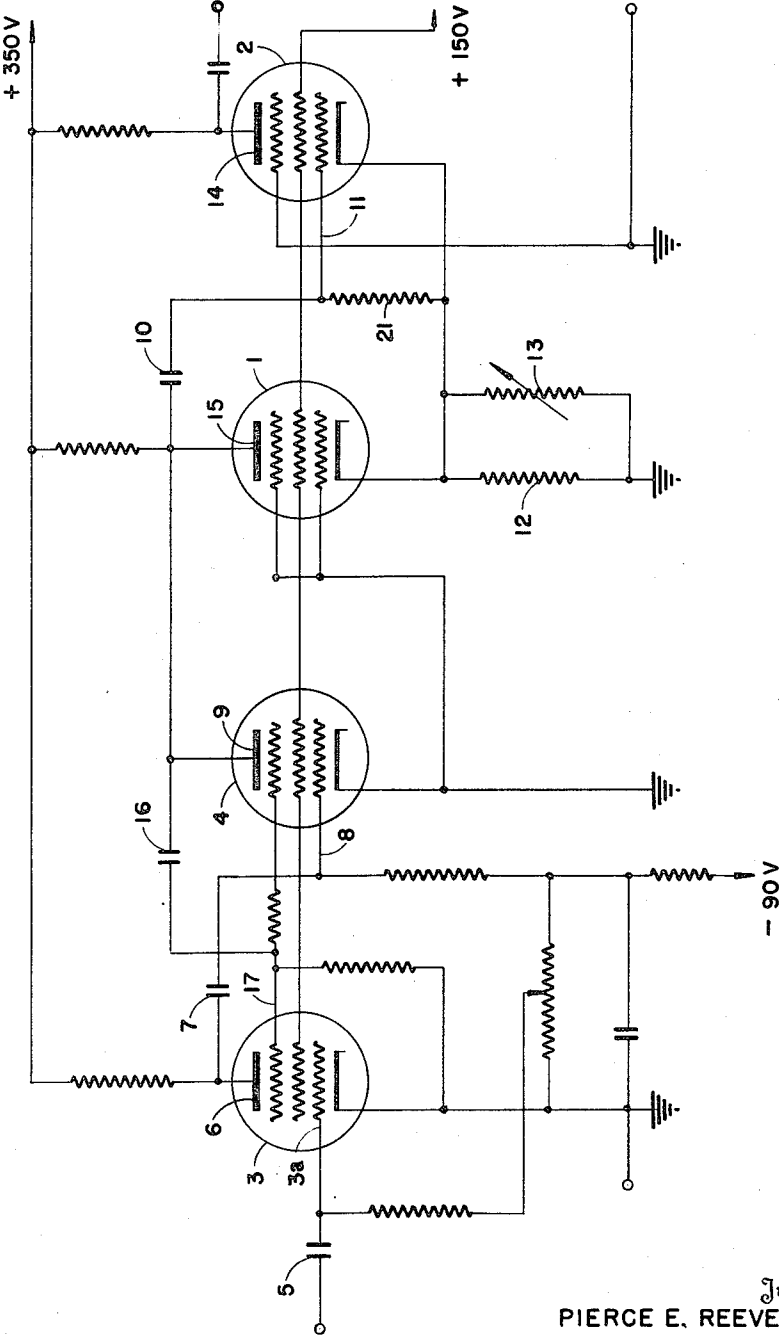
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PULSE GENERATING SYSTEM

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PULSE GENERATING SYSTEM

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This invention relates to pulse generating systems and more particularly to a keyed pulse generating system in which the keying signal is blocked for a given period.

The invention employs a pulse generator and a transmission channel through which a keying signal is fed to the pulse generator. A voltage is fed back from the generator to render the keying channel inoperative until the pulse generator is ready to receive another keying signal. The intermediate trigger signals are thus substantially prevented from affecting the shape and length of the pulse formed by the generator. This feature provides for smooth count down in cases where the pulse repetition frequency of the pulse generator is less than the trigger frequency. It also has applications in cathode ray tube sweep circuits. It helps prevent the sweep from shortening or becoming "jittery" due to the effect of keying signals arriving at the pulse generator before the circuits are in an electrical condition to receive them.

It is, therefore, an object of the invention to provide for smooth count-down operation in a pulse forming system.

It is another object of the invention to provide a pulse forming system that is substantially unaffected by spurious trigger signals.

Another object of the invention is to provide a pulse generating system in which a voltage is fed back from the pulse generator to the keying transmission channel to render it inoperative.

The invention will be further explained with reference to the drawing which shows in circuit schematic an exemplary embodiment of the invention.

Vacuum tubes 1 and 2 are employed in the pulse generator and operate as a "one shot" multivibrator. The circuits employing tubes 3 and 4 form the transmission channel for the keying signal. A voltage is fed back from the pulse generator to a transmission control means in the keying channel to hold it inoperative till the end of the pulse.

In the illustrative embodiment of the figure, vacuum tube 3 is normally conducting and tube 4 is cut off. A keying signal consisting of a series of short duration negative pulses is introduced to grid 3a of tube 3 through coupling condenser 5. A negative trigger at grid 3a will cause a positive signal at the plate 6. This positive voltage fed through condenser 7 to grid 8 of tube 4 causes a negative trigger at the plate 9. This negative voltage is applied through condenser 10 to the grid 11 of tube 2. Tube 2 is normally conducting

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and tube 1 is held cut off by the bias due to flow of current through resistor 12 and 13. As is well known, due to regenerative feedback, the negative signal appearing at the grid 11 of tube 2 will cause a positive pulse at plate 14 of tube 2 and a negative pulse at the plate 15 of tube 1. The duration of this pulse depends essentially on the time constant of the circuits comprising condenser 10 and resistor 21.

The negative pulse appearing at plate 15 of tube 1 is fed back through condenser 16 to the grid 17 of tube 3. This voltage keeps tube 3 substantially non-conducting till the end of the multivibrator pulse. Hence, signals appearing at grid 3a have substantially no effect on the operation of the pulse generator for the duration of the pulse.

Where a repetitive keying signal is employed and the output pulse is of longer duration than the keying signal repetition period, the transmission channel will be blocked for one or more cycles to prevent application of keying signals to the generator during its operative period.

It will be understood that the keyed generator supplying the output signal may be of any desired type and that the multivibrator shown is exemplary only. It is also apparent that the coupling to the controlled transmission channels, and the means employed as control elements therein, may be varied as desired.

It will, therefore, be understood that the specific embodiment described above is exemplary only, and that the scope of the invention will be determined with reference to the appended claims.

The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment of any royalties thereon or therefor.

What is claimed is:

1. A pulse generating system, comprising a pulse generator, a keying circuit for initiating a pulse in the pulse generator, transmission control means in the keying circuit, and means feeding back a voltage proportional to the output of the pulse generator from the pulse generator to the transmission control means to render the keying circuit inoperative throughout the duration of the output from the pulse generator.

2. A pulse generating system, comprising a pulse generator, a normally operative transmission channel for delivering a keying signal to the pulse generator comprising a multigrid keyer tube, means introducing the keying signal to one

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grid of said keyer tube, and means feeding back a voltage from the pulse generator to another grid of said keyer tube to render the transmission channel inoperative.

3. A pulse generating system, comprising a pulse generator comprising two tubes made alternatively conducting by regenerative feedback, a keying circuit for initiating a pulse in the pulse generator, transmission control means in the keying circuit, and means feeding back a voltage from the pulse generator to the transmission control means to render the keying circuit inoperative.

4. A pulse generating system, comprising a pulse generator comprising two tubes made alternatively conducting by regenerative feedback, a transmission channel for delivering a keying signal to the pulse generator comprising a multi-grid keyer tube, means introducing the keying signal to one grid of said keyer tube, and means feeding back a voltage from the pulse generator to another grid of said keyer tube to render the transmission channel inoperative.

5. A pulse generating system, comprising a pulse generator, a transmission channel for delivering a recurrent keying signal to the pulse generator, and means operative responsive to the amplitude of the output of said pulse generator to

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block the transmission channel for a period equal to the length of the output pulse from said pulse generator.

6. Means for rendering a pulse generator operative in response to selectively spaced signals of a succession of spaced keying signals, comprising a keying signal transmission channel for applying said spaced keying signals to said pulse generator, control means in said transmission channel effective upon actuation to render said transmission channel inoperative, means responsive to an output pulse from said pulse generator for actuating said control means throughout the duration of said output pulse, and means in said pulse generator for varying the duration of output pulses therefrom.

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