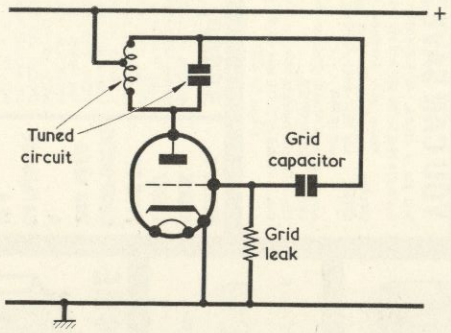
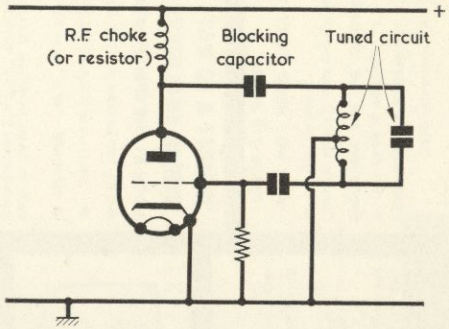
RADIO CONSTRUCTORS DATA SHEET 40

THE HARTLEY OSCILLATOR

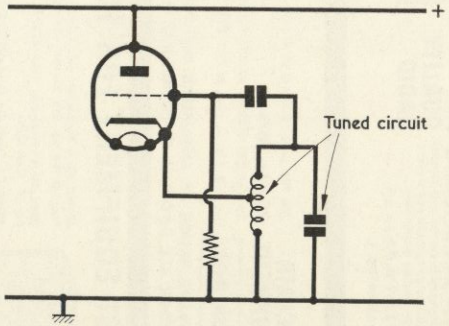
The Hartley oscillator is identifiable by reason of the tap in its tuned coil. The basic Hartley oscillator appears in (a), and the shunt-fed version in (b). In (c) the earthy connection is shifted from the tap to one end of the coil. Transistor Hartley oscillators may have the same basic configuration as (a), (b) and (c) with the collector replacing the anode, the base the grid and the emitter the cathode, but different bias conditions are needed and the lower impedances associated with transistors can be troublesome. A practicable transistor Hartley oscillator is shown in (d). In all diagrams it is assumed that there is negligible impedance between the supply rails.



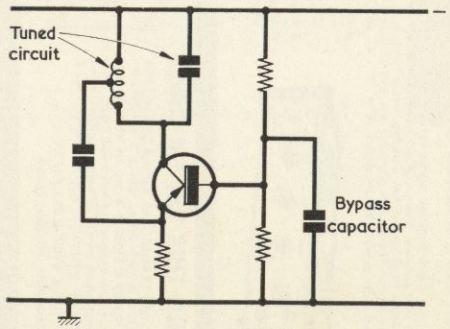
(a)



(b)



(c)

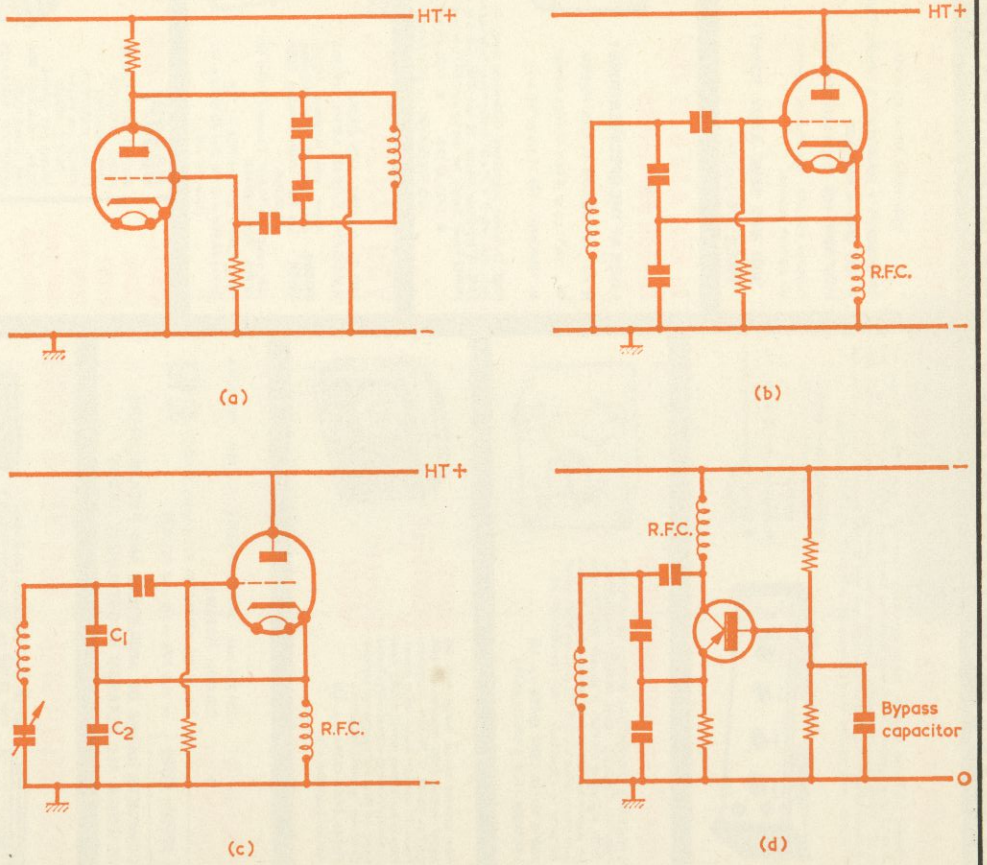


(d)

RADIO CONSTRUCTORS DATA SHEET 41

THE COLPITTS OSCILLATOR

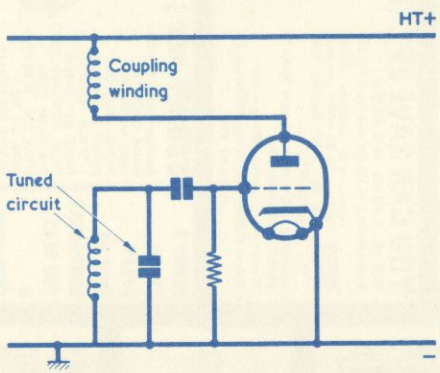
The identifying feature of the Colpitts oscillator, which forms the basis of a very wide range of oscillators employed in electronic work, is the tap in the capacitive section of the tuned circuit. It appears in its simplest forms in (a) and (b). The Clapp oscillator in (c) is derived from the Colpitts and, if C1 and C2 have large values, around 1,000pF, can offer very high frequency stability over a limited tuning range. A transistor Colpitts oscillator is shown in (d), where the ends of the tuned circuit are coupled to the collector and the base. In all diagrams it is assumed that there is negligible impedance between the supply rails.



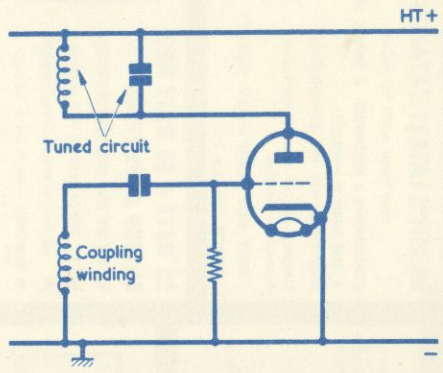
RADIO CONSTRUCTORS DATA SHEET 42

FURTHER L.C. OSCILLATORS

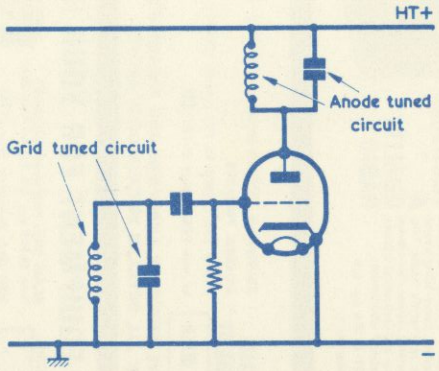
Apart from the Hartley and Colpitts oscillators (Data Sheets 40 and 41 respectively) the main positive feedback oscillators employing inductance (L) and capacitance (C) to produce the resonant frequency are the tuned grid oscillator (a), the tuned anode oscillator (b), the tuned anode-tuned grid oscillator (c) and the Meissner oscillator (d). Transistorised versions of (a), (b) and (d), with the requisite altered bias conditions, have the same basic configuration with the collector replacing the anode, the base the grid and the emitter the cathode. A transistorised version of (c) is not practicable. In all diagrams it is assumed that there is negligible impedance between the supply rails.



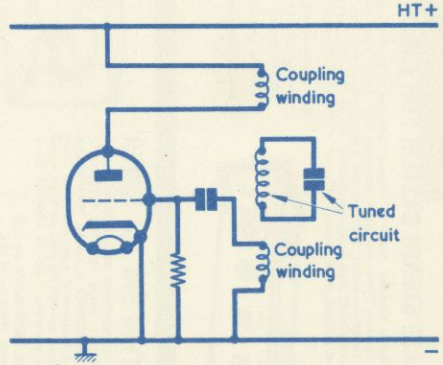
(a)



(b)



(c)



(d)