knotted handkerchief

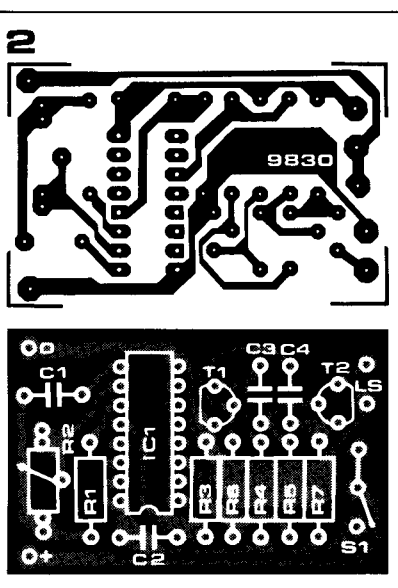
Another project for which a free printed circuit board is being offered, this circuit was first featured in the July/August 1977 issue, but for readers who missed that issue a short resumé of the project is given here.

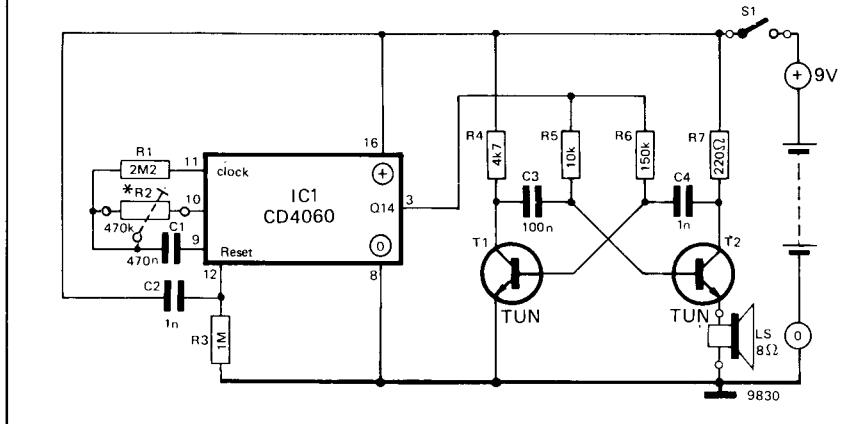
The 'knotted handkerchief', as its name implies, is a circuit that reminds one to do something; in fact, it is an extremely compact timer and alarm that can be carried in a pocket. The heart of the circuit is an oscillator and 14-stage binary counter, IC1. When the circuit is switched on the counter is reset by a pulse from the supply line via C2, after which it begins to count pulses from the oscillator. When the required time is reached the output (Q14) goes high, starting up a 3 kHz astable multivibrator, T1/T2, which drives a miniature loudspeaker to provide an alarm signal until the circuit is switched off.

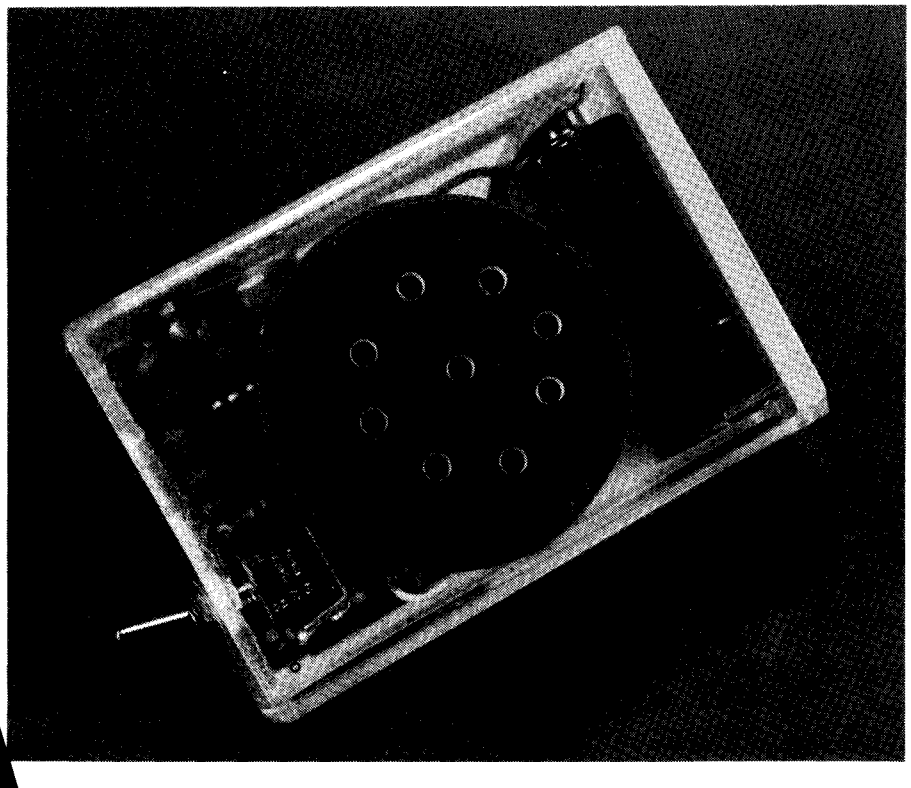
With the component values shown the time interval before the alarm sounds is approximately one hour, but R2 may be replaced by a 1 M potentiometer to provide variable timing intervals from about 5 minutes to 2¼ hours.

Figure 1. Circuit of the 'knotted handkerchief'.

Figure 2. Printed circuit board and component layout for the knotted handkerchief. (EPS 9830).







Parts list for figures 1 and 2.

Resistors:
R1 = 2M2
R2 = 470 k (see text)
R3 = 1 M
R4 = 4k7
R5 = 10 k
R6 = 150 k
R7 = 220 Ω

Capacitors:
C1 = 470 n
C2 = 1 n
C3 = 100 n
C4 = 1 n

Semiconductors:
IC1 = CD 4060
T1,T2 = TUN

Miscellaneous:
S1 = SPST switch
LS = 8 Ω miniature loudspeaker or earpiece insert
9 V transistor power pack (e.g. PP3)