string sound

This circuit can be used to give quite a natural imitation of a vibrating string. An astable multivibrator consisting of transistors T_1 and T_2 produces the fundamental tone. As long as switch S is not operated, the two transistors T_3 and T_4 are conducting, and thus the multivibrator output is short-circuited. When S is operated, the short-circuit is removed, and T_5 is turned on whilst T_3 is cut off. At the same time T_6 conducts momentarily, C_5 discharges and T_4 is thus also cut off. The generator signal now occurring at the output slowly disappears as capacitor C_5 charges again. If S is closed before the tone has disappeared, it is abruptly cut off because T_3 is turned on again.

With this circuit a tone can be produced whose frequency depends on the setting of P_1 and on the values of C_1 and C_2. The values for these capacitors can be determined by experiment; they will generally be chosen in the range 1 ... 10 n. If several of these stages are interconnected via resistors, a simple synthesizer can be built.