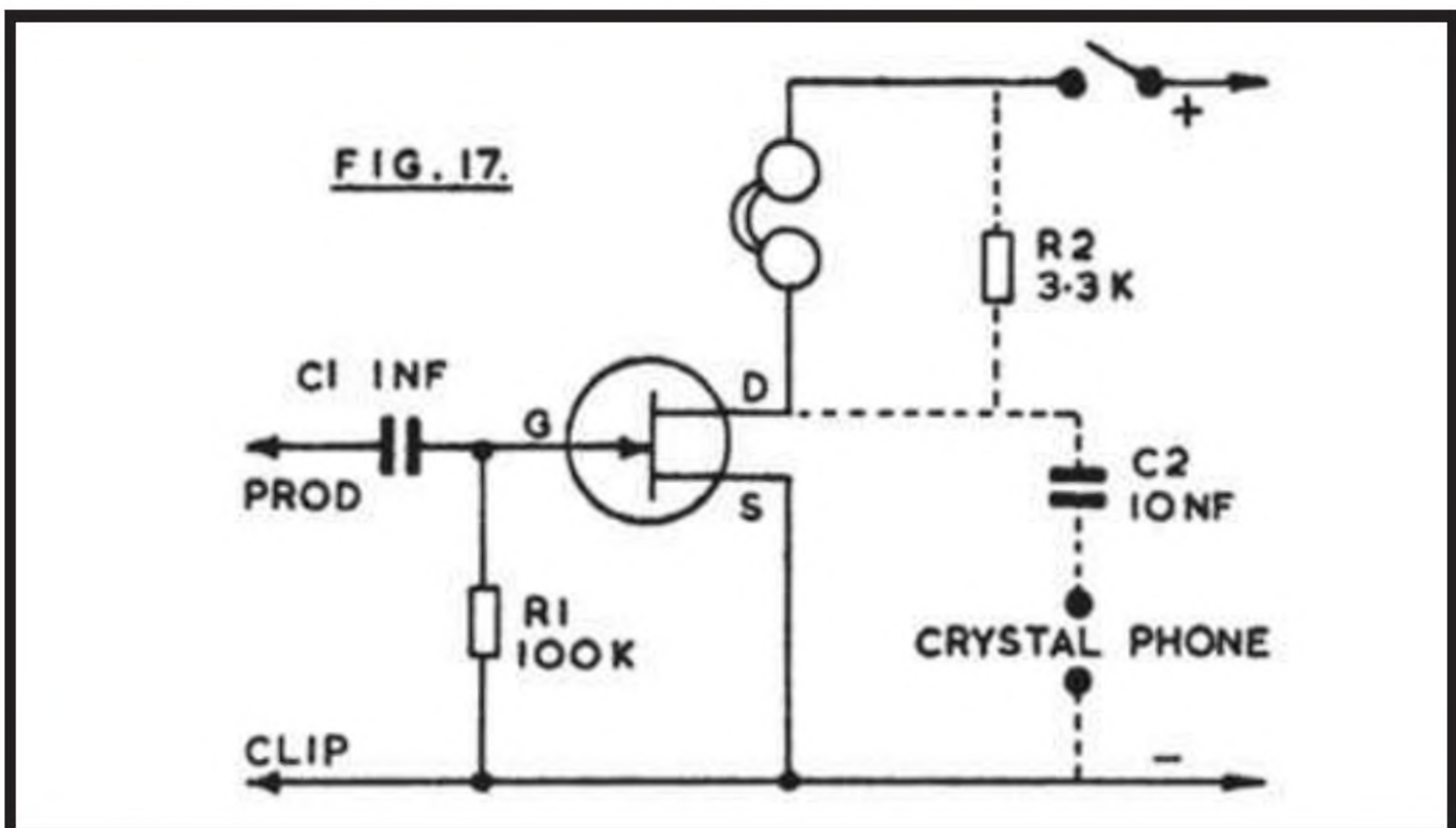


## Signal Tracer

Quick location of an interruption to the audio signal in low level audio circuits is often made with a signal tracer. Figure 17 is a circuit for this purpose. Signals are found with a prod attached to a flexible lead, and coupled to the gate by isolating capacitor C1. This capacitor needs to have ample voltage rating. The clip may be attached to the chassis or ground line of the equipment. Such tests must not however be made with any receiver or amplifier having current derived directly from the mains, or any equipment having a live earth line or live chassis.



If a magnetic headset of about 500 ohms to 2k or so will be used, connections can be directly to drain and positive, as shown. A 1.5v supply can then be adequate. Crystal earpieces or a single crystal unit can be coupled by R2 and C2, and a 9v supply is then preferred.

To test a circuit, the prod is moved point by point from the earliest item where the audio signal is present. This can take in systematically cables, jack sockets and connectors, internal leads and components such as volume controls and coupling capacitors. When the signal ceases to be heard, the fault is known to lie in the last item brought into circuit. Detailed checks here will then show what the fault is.

Any audio or general purpose FET can be fitted. Sensitivity to weak audio signals can be raised by adding source bias this can be a 2.2k resistor with 47uF parallel capacitor. Over-loading or excess volume with powerful signals can be avoided by replacing R1 with a 500k potentiometer, taking the gate to its wiper. The whole unit can conveniently be made in a small box, to hold in the hand, with output socket for headphones or a single earpiece.