potentiometer and determines the duration of the linear ramp to be generated. The output signal on pin 8 turns on the gated oscillator formed by the 832 NAND gates and 2000 pF capacitors for triggering the oscilloscope sweep circuit. Gate G4, a NAND gate with an open collector in the output transistor, is turned off by the signal from pin 6 of the multivibrator. A 2N5457 field effect transistor connected as shown makes a constant current generator. Initially, current flows from the generator through the 844 gate to ground. When the gate is turned off, current flows into the capacitor charging it at a constant rate. The linear ramp developed across the capacitor is sent to one input of a dual trace plug-in.

At the end of the multivibrator time constant, the ouputs revert to their initial logic state turning off the oscillator and ending the ramp. Voltage on the ramp capacitor is drained off by the output transistor in gate G4 and the system can be recycled.

Once the 850 PTB is triggered, the outputs will remain in their new logic states until the circuit is manually reset by grounding pin 13. With G3 disabled, successive signals from the magnetic pickup will not cause retriggering of the oscillator or ramp circuits. The system must be manually reset before another test firing of the compressor.

A TEST switch and its bounce suppressor circuit composed of two 846 NAND gates G1 and G2 may be used to generate a ramp and oscillator signal while adjusting the oscilloscope display. In this case the system is automatically reset upon release of the test switch due to the connection of G1 to pin 5 of the PTB. When the TEST switch is pressed the output of G1 goes from LOW to HIGH. When the switch is released the output of G1 reverts to LOW. The negative-going transition on pin 5 resets the PTB.

Motion Transducer

The transducer used to monitor motion of the compressor relative to its base is simply a linear potentiometer. Power for the transducer comes from the power supply used for the digital logic circuits. The body of the transducer is mounted to the base and the slider is fastened to the compressor. The transducer signal is a variable DC voltage.

Power Supplies

All circuits in the system are powered by three modular DC power supplies located in one plug-in module in the instrument rack. The power supplies are made by Computer Products, Inc. of Fort Lauderdale, Florida. All logic circuits and the motion transducer receive power from a Model PM534, 5V, 500 mA supply. Analog circuits are powered by two Model PM576 15V, 100 mA supplies connected to form a $\pm$ 15 V output with respect to ground.

The plug-in module containing the power supplies also contains the AC power line switch, indicator light, and fuse. The AC power line input to the module is bypassed with .05 μF capacitors for transient voltage suppression. Additional capacitors for bypassing the DC power supply leads are located at various points throughout the system.