the signal or other grid or grids, a meter to read the anode (or other current carrying electrode) current and switches to vary the voltages applied to the anode or the like and the grid or grids. The meter is preferably scaled to indicate twice the actual current passing.

The valve tester according to the present invention also preferably includes means for testing the efficiency of rectifier valves. The testing of rectifying valves in an apparatus such as that described above presents a problem for two reasons, firstly, no test is really informative unless carried out under normal conditions of rectification, i.e. reservoir condenser and load, and, secondly, unless the rectifying valve is working under conditions of maximum loading, which is unusual, what is required is not necessarily whether the rectifier can supply its maximum rated current, but whether the valve will supply continuously the current that is required from it in the apparatus in question.

Since a rectifying valve has no single parameter (such as mutual conductance in the case of other valves) which will express its condition and the taking of a full set of load curves would be excessively tedious and not very informative to the comparatively inexperienced, the method adopted according to the present invention is as follows:—

Referring to Figure 5 of the accompanying drawings, the valve has applied thereto a sufficiently high A.C. voltage to render negligible its own internal resistance and to work it above the bend in its characteristic. It is connected in the circuit shown in Figure 5 where C is a reservoir condenser of sufficiently high capacity and L is a load resistance, M being a meter to measure the rectified current.

Assuming that the valve will be working with about 30% of the peak value of the applied voltage as a ripple voltage we can assume that normal conditions after the rectifying valve a D.C. voltage equivalent to about 70% of the applied peak voltage. The load L can therefore be tapped so that with this assumption and allowing for the voltage drop in the valve, D.C. currents of suitable magnitude for the different load conditions will flow in L and be indicated on the meter M. If now M is shunted so that for a given nominal current in L a zone on the meter M indicates, say, plus 15% to minus 30% of this value, then, the position of the needle of the meter M will show by its relation to this zone, which is conveniently coloured, the relative efficiency of the valve at the load current under consideration. Thus, by suitably tapping L, as shown in Figure 6 of the accompanying drawings, for load currents of, say, 5ma., 15ma., 30ma., 60ma. and 120ma. and arranging a shunt M^1 across M which is altered by means of the switch S in conformity with the tappings on the load resistance L so that the meter reads on the coloured zone 115% of the load current for full scale, and a zone marked " Pass " or " Good " on the meter corresponding to the region between plus 15% and minus 30% of the load value, then, by switching from one load to the other, the efficiency of the valve under reservoir condenser and full load rectification conditions can be gauged for the load that it has to supply.

It is to be understood that whilst minus 30% can be allowed for a " pass " figure under normal ratio conditions, under more exacting conditions the meter can be scaled accordingly. Further, the applied voltage and load current conditions can be changed for more specific applications.

Similarly, by applying a lower RMS voltage and introducing a load and meter tapping for, say, 1ma., signal diodes can be tested.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. Apparatus for testing thermionic valves comprising means for applying to an anode or like electrode of the valve a sinusoidal alternating current voltage having an RMS value equal to 1.1 (or approximately 1.1) times the D.C. voltage which would normally be applied in carrying out the test in question, means for applying a sinusoidal alternating current voltage whose means value is equal to one half (or approximately one half) of the normal applied D.C. negative grid volts for the test in question, in counter-phase to the voltage applied to the anode, means for suppressing the positive half cycle of said second-mentioned alternating current voltage and for applying such rectified sinusoidal alternating current voltage to the grid of the valve, and a meter for measuring the current flowing in the circuit to which the first-mentioned alternating current voltage is applied.

2. Apparatus for testing thermionic valves according to Claim 1, in which the meter scale is calibrated to read twice the actual current flowing.

3. Apparatus for testing thermionic valves according to Claim 1 or Claim 2, provided with switch means to vary the value of the half wave rectified alternat-