



speaker is of considerable amplitude. If, as frequently happens, this vibration is transferred to the valves, either via the chassis and valve holder or through the air to the bulb, the electrodes, unless very rigidly supported, may be set in sympathetic vibration. This

causes rhythmic variations in the characteristics of the valve with the result that certain frequencies will be abnormally amplified.

The notes corresponding to these frequencies will, therefore, be reproduced at abnormal volume by the speaker, and still greater vibrations at these particular frequencies will be set up, to be further amplified by the valves.

As a result, sustained notes ever increasing in volume will be heard from the receiver—the effect known as microphony.

The accompanying illustrations show the Mullard RIGID UNIT Construction which has been adopted for all

Mullard indirectly-heated A.C. mains valves, in order to render all types immune from microphony. It will be seen that each individual electrode is of robust and stiff section and is not only rigidly supported, but is also tied and braced to other electrodes in such a way that relative movement between them is impossible.

Another constructional point of great importance is the design of the heater-cathode assembly. The repeated expansion and contraction of the heater filament due to switching the receiver on and off, aggravated in many instances by large variations in mains voltage, impose severe stresses on the heater itself. The risk of heater fracture due to this cause is, however, avoided by the Mullard FLOATING HEATER.

In this construction, the heater is threaded through two axial holes in the cathode insulator. It is thus free to expand or contract without mechanical strain, and at the same time perfect insulation between heater and cathode is assured.

