U 30 Barretter

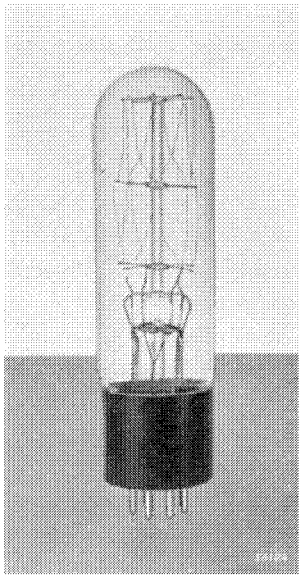

Fig. 1
The U 30 barretter ; overall height approximately 135 mm.

In A.C./D.C. receivers the heaters of the various valves are connected in series; the heater voltages of the U-valves are consequently so proportioned that the standardised series of valves UCH 42 - UF 41 - UBC 41 - UL 41 and UY 41, or UCH 42 - 2×UAF 42 - UL 41 and UY 41 requires a total heater voltage of some 116 V. These series can be used on 110 to 127 V mains without ballast resistance ; on these low-tension mains supplies, the permissible voltage range is fairly wide owing to the fact that the resistance of the filaments increases with a rise in voltage, so that the current does not rise so much as the voltage.

In the case of 220 V mains, however, a resistor must be included in series with the filament circuit ; a value of 1040 ohms is suitable for use with the above series of valves. The current is then much more dependent on the voltage, and the permissible voltage range is accordingly smaller.

Thus, when a ballast resistor is employed, certain precautions must be taken. For example, if mains-voltage fluctuations of 10% are to be admitted, the voltage range of the system will be limited and the resistor will have to be provided with a fairly large number of tappings. On the other hand, if the U 30 is used instead of the series resistor, this barretter will ensure that the current is kept within the permissible limits.

The U 30 is designed for use with U-type valves (100 mA) ; the control range is such that the current adapts itself to the correct value for the normal broadcast series of valves on 220 V mains.

Owing to the high proportion of power dissipated by the U 30, it is not possible to make this barretter in the Rimlock design ; the envelope is larger and the base is of the octal type. The practical effects of the controlling action of the U 30 are illustrated in Fig. 4 of circuit diagram VII.

TECHNICAL DATA OF THE BARRETTER U 30

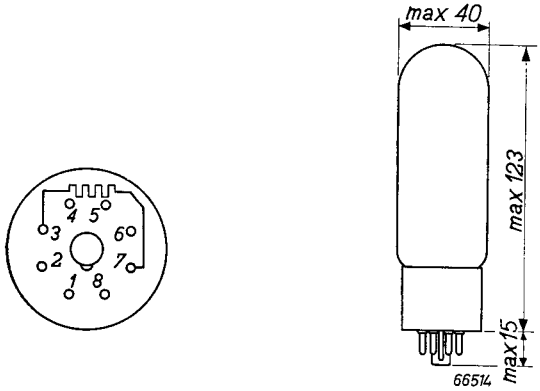

Fig. 2
Electrode connections and dimensions in mm of the U 30.

Control range		70—122.5 V
Current	nominal	100 mA
	max.	108 mA
	min.	87 mA
Mains voltage	max.	260 V
	min.	170 V

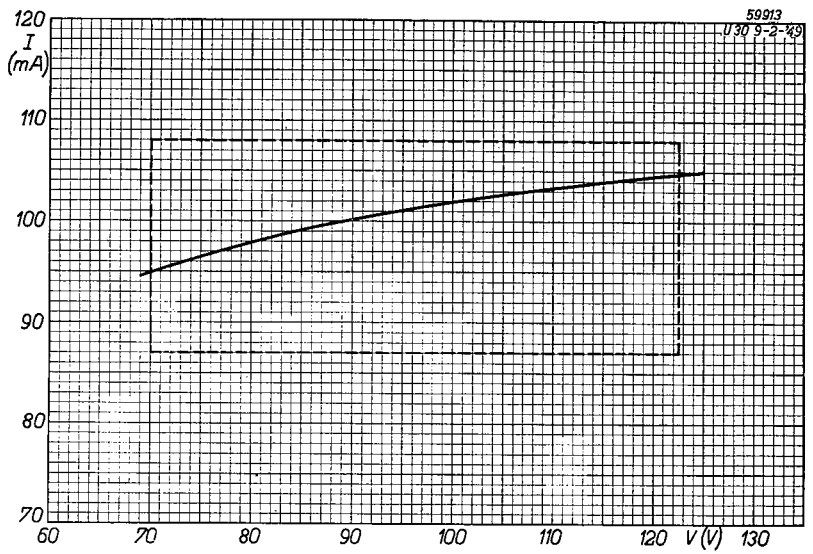

Fig. 3
Control characteristic of the U 30, current I flowing through the resistance wire as a function of the applied voltage V.