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HIGH FREQUENCY STAGE

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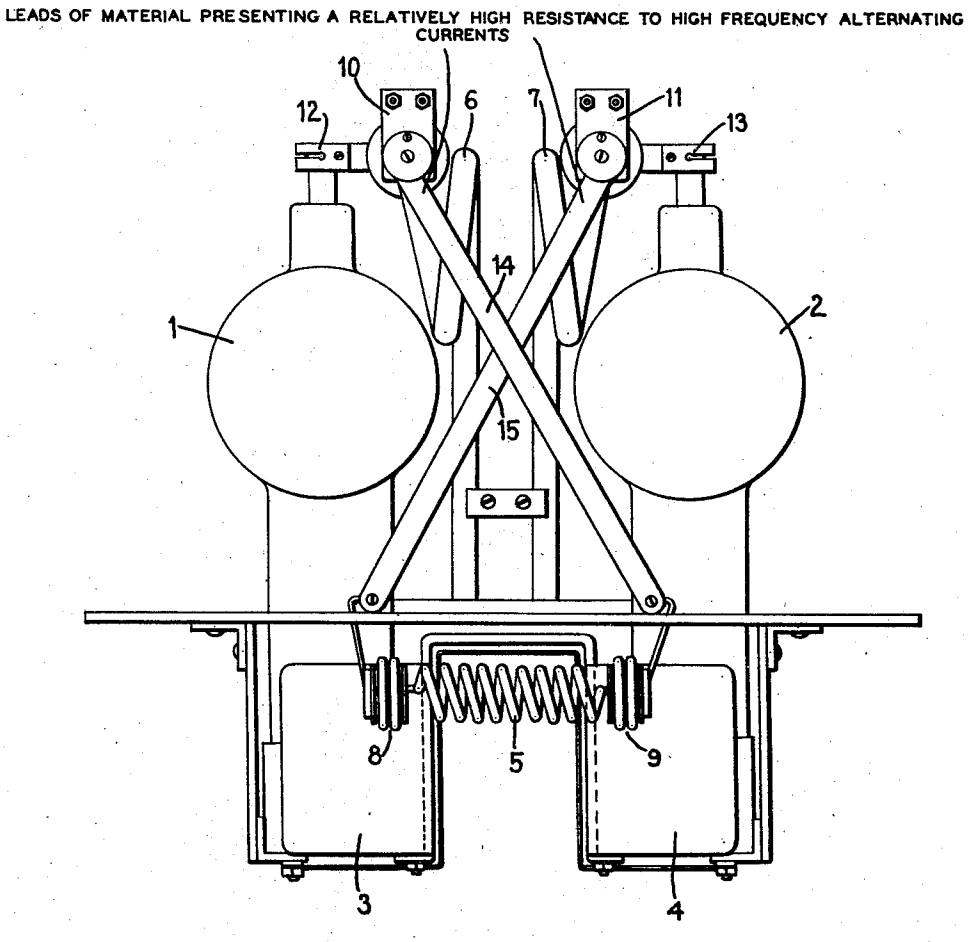

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HIGH FREQUENCY STAGE

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4 Claims. (Cl. 179—171)

It is well known in high frequency amplifiers, especially those employed in high frequency transmitters, to compensate the grid-anode capacities of the amplifying tubes by so-called neutralization condensers. In this connection however it is found that sometimes it is not sufficient merely to interpose capacities in the neutralization circuit, since in operation also an ohmic component becomes effective which is aided by the glowing of the anode plates and of the meshes of the grid plate. It may be thought that this ohmic component might be compensated by interposing suitably dimensioned resistances in the neutralization circuit. For instance, in the case of very short waves in the order of magnitude of some meters and still shorter waves, silit resistances free of induction may be thought to be suitable. The application of silit resistance however is not possible because in operation and on heating them their capacitive reactance is varied and the neutralization continually disturbed hereby.

In order to overcome this drawback the invention proposes not to include in the neutralization circuit special resistances but to make the leads to the neutralization condensers from a material which by its condition and form is possessed of a high alternating-current resistance. In this regard leads made of German silver are particularly suitable. Such leads are preferably tape-shaped. By suitably dimensioning the cross-sectional area, length and specific resistance of such leads it is possible to obtain an invariable compensation of the ohmic component. The resistance is not altered during operation, and capacitive de-tuning does not occur.

One embodiment of the invention is represented in the drawing by way of example.

The embodiment here shown is a push-pull connected amplifying stage of a high frequency transmitter. The electron tubes 1, 2 are fastened in sockets 3, 4. The grid circuit coil is denoted by 5 while the anode circuit coils are designated 6, 7. Condensers 8, 9 serve for tuning the grid circuit. Condensers 10, 11 are neutralization condensers which by one of their coatings are directly connected to the anodes 12, 13 of the tubes 1, 2. The other coating of the condensers 10, 11 is in accordance with the invention joined to the grid circuit of the tubes 1, 2 by German silver tapes 14, 15 arranged to cross each other.

The arrangement here described is not limited in its application to push-pull connected stages but is applicable also to simple amplifying stages.

What is claimed is:

1. A high frequency amplifier comprising an amplifying circuit, a neutralizing condenser, and means for coupling said condenser in said circuit, comprising a resistance, said resistance consisting substantially of a substantially straight lead of material presenting a relatively high resistance to high frequency alternating currents.

2. A high frequency amplifier comprising an amplifying circuit, a neutralizing condenser, means for coupling one plate of said condenser to a predetermined point in said circuit, and a substantially straight lead of resistance material having a relatively high resistance at high frequencies, connected between the other plate of said condenser and another predetermined point in said circuit.

3. An amplifier according to claim 1 wherein said material is German silver.

4. A high frequency amplifier comprising electron tubes connected in push-pull relation, a neutralization circuit for said amplifier including a pair of condensers, means for coupling one plate of one of said condensers to a predetermined point in said circuit, means for coupling one plate of the other of said condensers to another predetermined point in said circuit and resistance means for coupling the other plates of said condensers to other predetermined points in said circuit comprising two substantially straight tapes of material having a relatively high resistance at high frequencies connected between said other plates and said other predetermined points.

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