
An Invitation

To all who are interested in the highest quality Radio and Electrical reproduction.

The "York-Royal" is the finest radio and gramophone it is possible to buy in Australia—you have never heard its equal.

We therefore cordially invite you to hear the "York-Royal" operating in our specially built showroom. We would sincerely emphasise the fact that your visit will entail no obligation. We particularly welcome lovers of recorded music.

Reliance Radio Pty., Ltd.

RELIANCE HOUSE, 14 BARRACK ST., SYDNEY.

Phone B2223

AUSTRALIA'S LARGEST SET!

THE 20-VALVE "YORK-ROYAL"

The 20-valve receiver described here is of such particular interest that we feel many of our readers will welcome some details about it. We do not know of any similar receiver available in Australia.

IN these days of smaller and smaller chassis, with mantel and table models selling so well, and design making such strides to get a good deal of performance from a small number of valves, it is decidedly different to take the controls of a 20 valve set, and put it through its paces. Twenty valves! Four times as many as the average dual-wave set bought in thousands by Mr. Average Citizen!

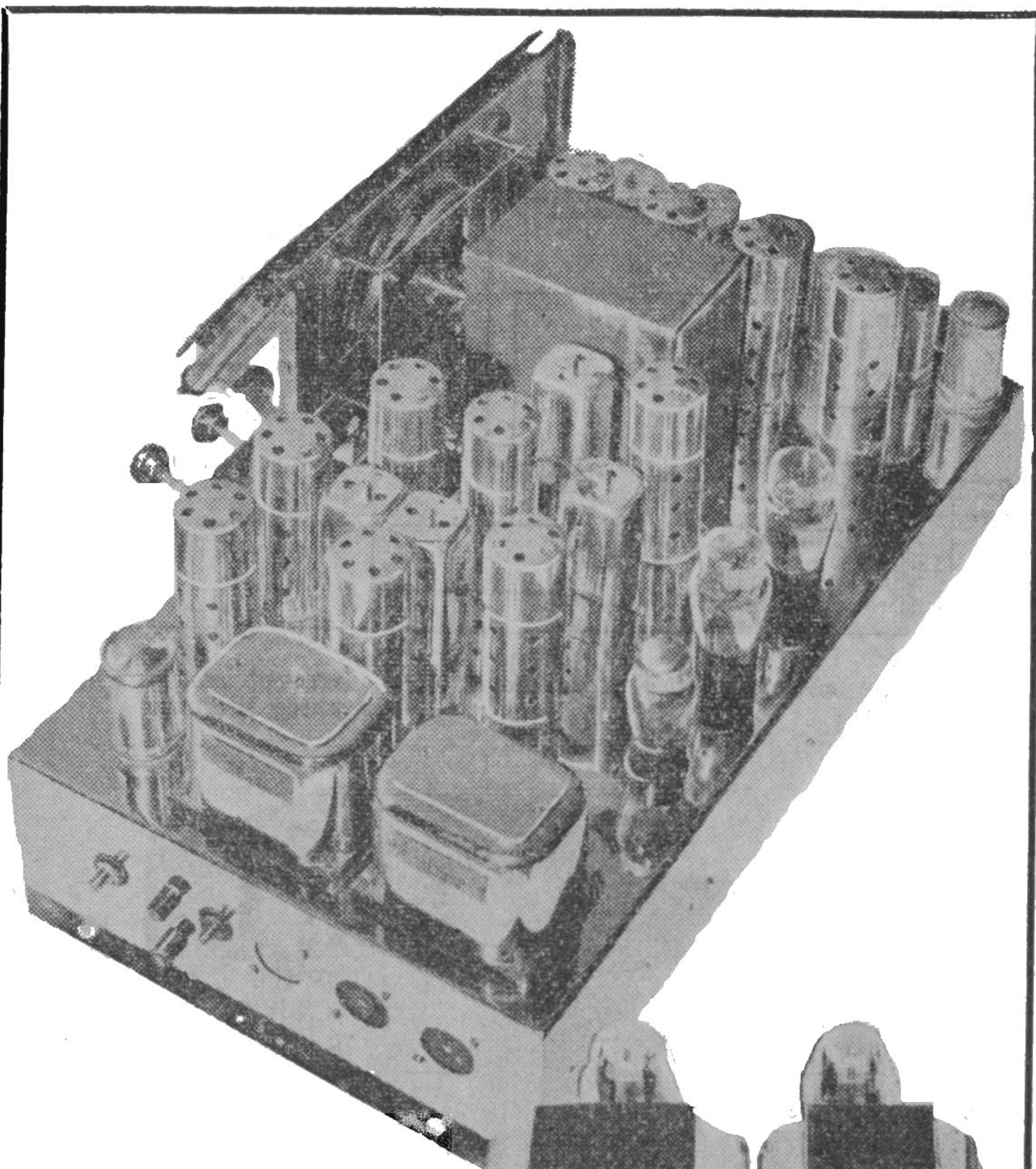
Overseas, a set of this size, while not common, is not such an event as it is in Australia. The reason is, of course, that there are more people wanting such receivers, because the total number who buy radio is so much larger. America's huge population, for instance, means that the percentage of big set buyers, while possibly no larger than out here, is responsible for a much larger market.

From time to time big sets have appeared on our market with varying success. The latest which comes under our notice is the newly released York-Royal, a radio gramophone using 20 valves in all, and which includes practically every circuit feature to be found in modern design.

The set itself follows the principle of such receivers as the high quality Scott luxury productions in America—it has a separate console to house the chassis and gramophone motor, and a second cabinet to accommodate the loudspeakers.

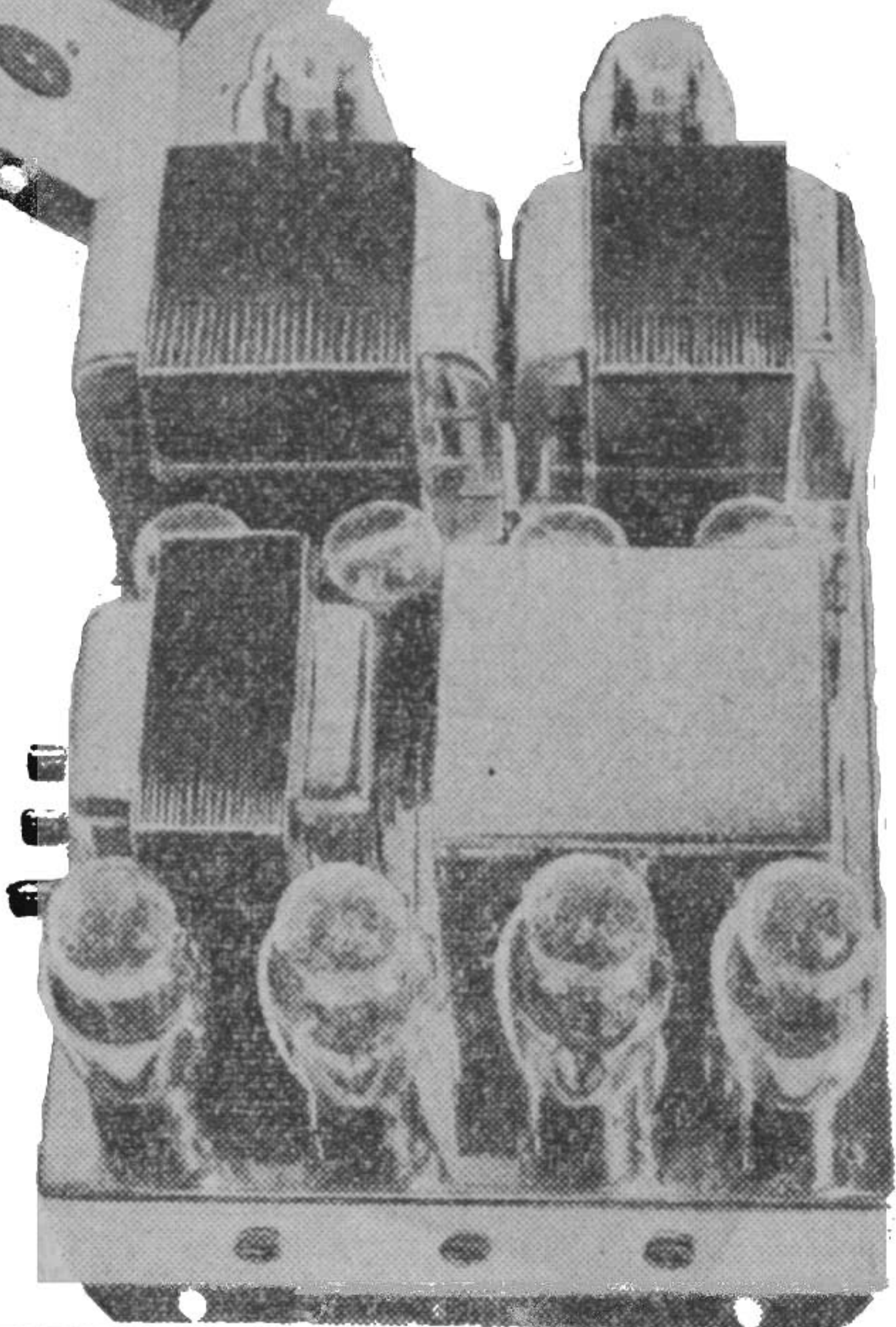
Thus the control console may be placed anywhere convenient in the room—it is mounted on easy-running castors—and the speaker cabinet located in the most favorable spot to show up the tone and volume of the set.

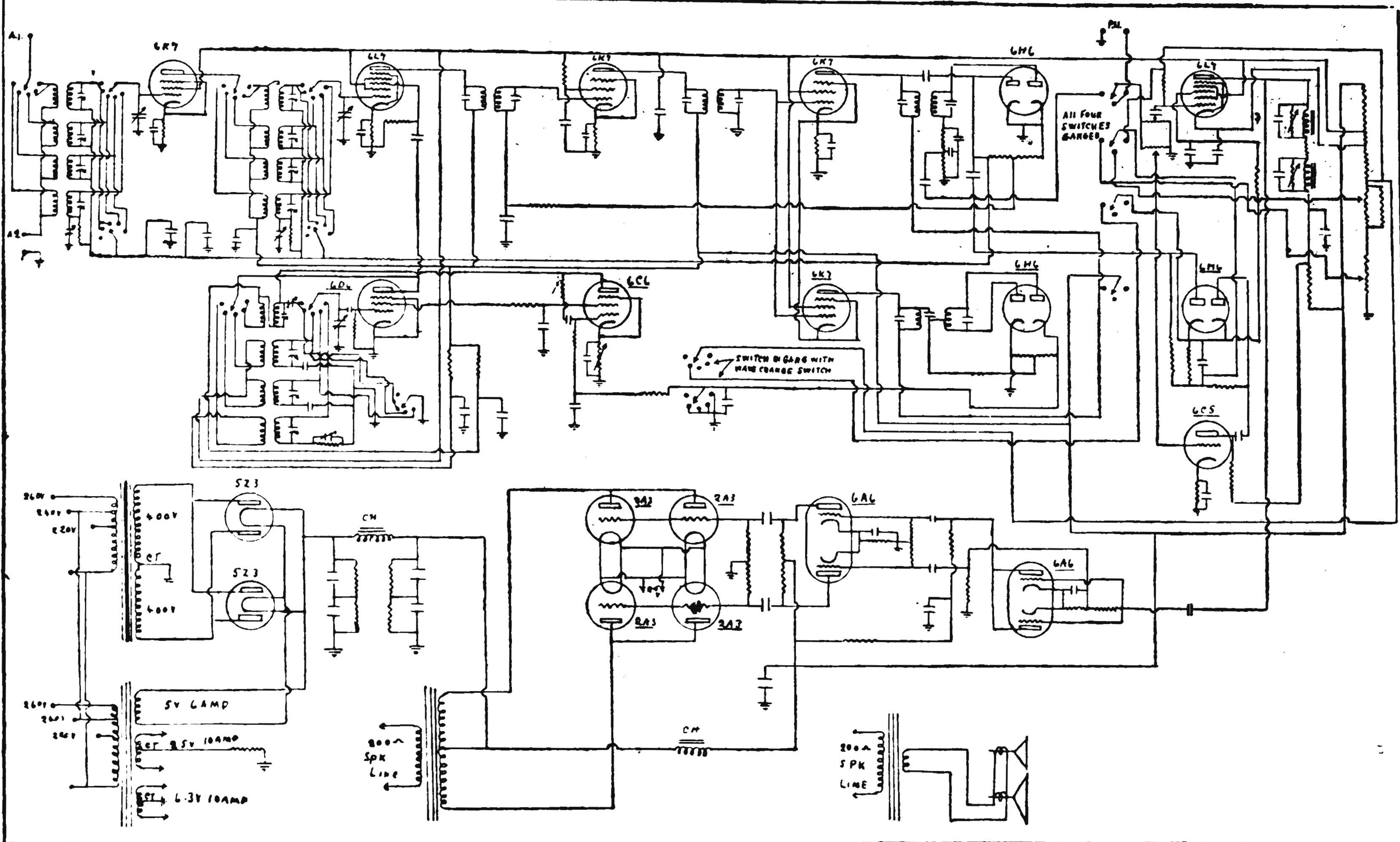
The illustrations give a very good idea of the set. The tuner is complete on one large chromium plated chassis, and



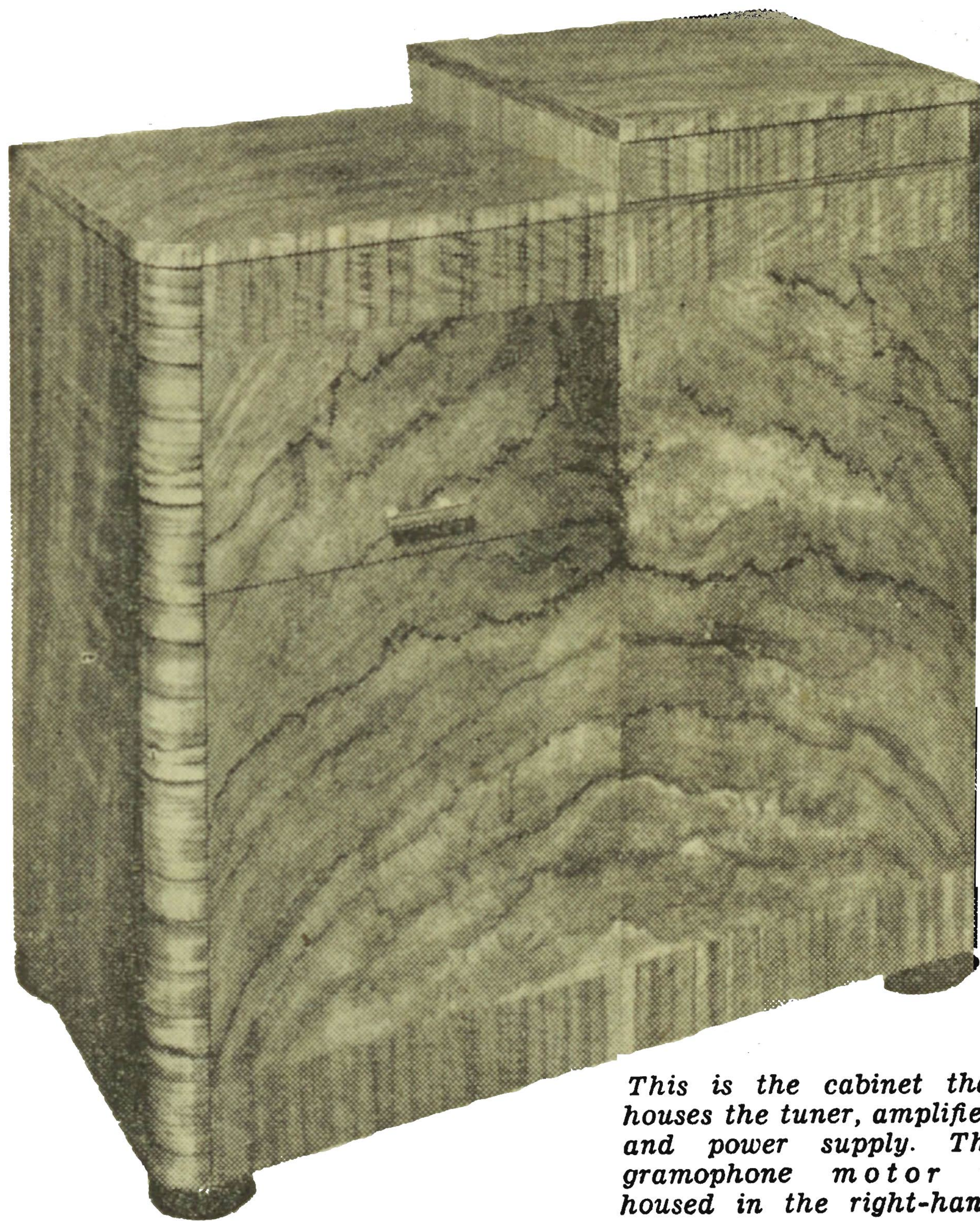
Above—The chassis which houses the tuner. It is heavily chromium-plated, and contains all the components up to the final output stage and power supply. The tuning range is from 8 to 90 metres, as well as the broadcast band.

Right—The chassis housing the power supply and the output stage. The four 2A3 valves are seen in the foreground. This chassis is also plated. A 500-ohm line is provided for connection to the loudspeakers.





Here is the circuit of the "York Royal"—our technical readers will have great fun finding out from it how everything is done.



This is the cabinet that houses the tuner, amplifier, and power supply. The gramophone motor is housed in the right-hand section.

the power unit is complete on a second chassis similarly plated. The output valves are also housed on the power supply chassis.

The tuning dial and controls are to the left of the cabinet, and are concealed by a lift-up lid, which folds back when the set is to be tuned. The right-hand section houses the electric gramophone motor, and the high-fidelity crystal pick-up.

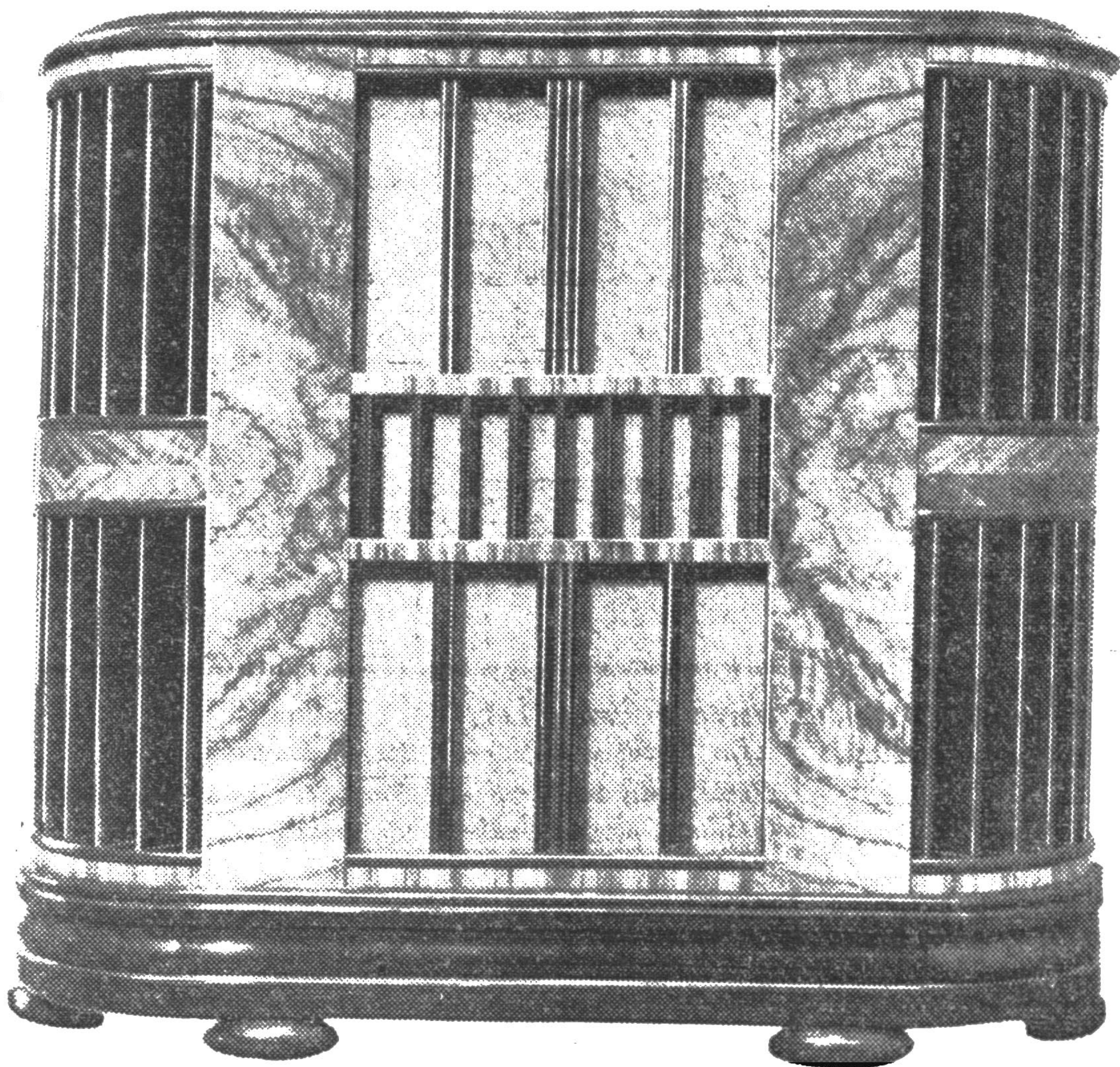
The speaker cabinet has been specially built to give good baffling, and its size is a guarantee of this. It is very heavily constructed, and accommodates two specially built loud-speakers, to take the full output of the receiver. As this is something like 20 watts or more, it will be realised that a well-made speaker cabinet is essential.

The cabinet work of both is, of course, of the highest class, such as one would expect in an instrument of this kind.

TECHNICAL POINTS

The whole outfit simply bristles with interesting technical features. For a start, the tuner covers four wavebands. There is, of course, the broadcast band from 200-550 metres. The first short-wave band covers from 35-90 metres, the second from 15-45 metres, and the third from 8-16.5 metres. By this means, there is nothing one is likely to hear either on broadcast or short-wave bands, that the Royal is not likely to hear.

It will be noted that the lowest band uses a band-spread device to make the tuning suitably broad, and prevent too difficult tuning.



This is the speaker cabinet-baffle which houses the dual speakers. It is a particularly fine piece of work.

The set also has automatic frequency control, which makes tuning very easy. The effect of this is to automatically tune in the station perfectly when the dial is tuned to within 10 kc. of the actual frequency. Thus extremely fine adjustment to hit the exact centre of the carrier is no longer required—the set automatically finds this spot as long as it is tuned to within 10 kc. of the correct frequency.

The circuit uses an R.F. stage on each band, and also two I.F. stages. There is also an extra I.F. channel for the A.F.C. system. Detection is by a system of compensated diode, which reduces distortion to a minimum.

The A.V.C. system operates through a double system, to reduce envelope distortion. It is also a particularly effective control under all circumstances.

The use of a 6L7 first audio amplifier allows the receiver to be fitted with automatic noise suppression and volume expansion. Noise suppression prevents the very high noise level characteristic of the ordinary set when tuned off a carrier. Instead of the usual loud roar, the Royal merely gives a few minor sputters and crackles to show that its sensitivity is under the A.V.C. action, running "flat out."

The volume expansion, operating on the pick-up only, is the same scheme over which we have enthused from time to time in "Wireless Weekly"—in fact, our last issue described an amplifier using it. With a receiver having the high output and quality of the Royal, the expansion can be appreciated as it should be.

The output stage of the receiver features four 2A3 valves in push-pull parallel, which means enough output if required to fill a theatre, and excellent fidelity. We can vouch for the output of the Royal being all one could possibly require, without any distortion due to overloading being observed at any time.

Special high fidelity transformers are used throughout the audio system, and the power units are also of the same high quality. The output of the power stage is fed to a 200 ohm line, which feeds into a suitable matching transformer in the speaker cabinet, which in turn supplies the power to the pair of matched speakers.

These have been specially built for the Royal. They are permagnetics, and so arranged that one has an exceptionally good bass response, while the other, without being a tweeter, has a bias towards more brilliant reproduction. The result is a very pleasant balance of tone.

We can find space only to outline here the above most interesting points of the receiver, but there are many constructional points which speak for the time and careful work which has gone into the job as a whole. All the features we have mentioned are fully controllable from the front panel, and the tuning dial is of the straight-line edge-lit type. The tuner is built throughout with air-dielectric trimmers, to preserve the accuracy of alignment over long periods in service.

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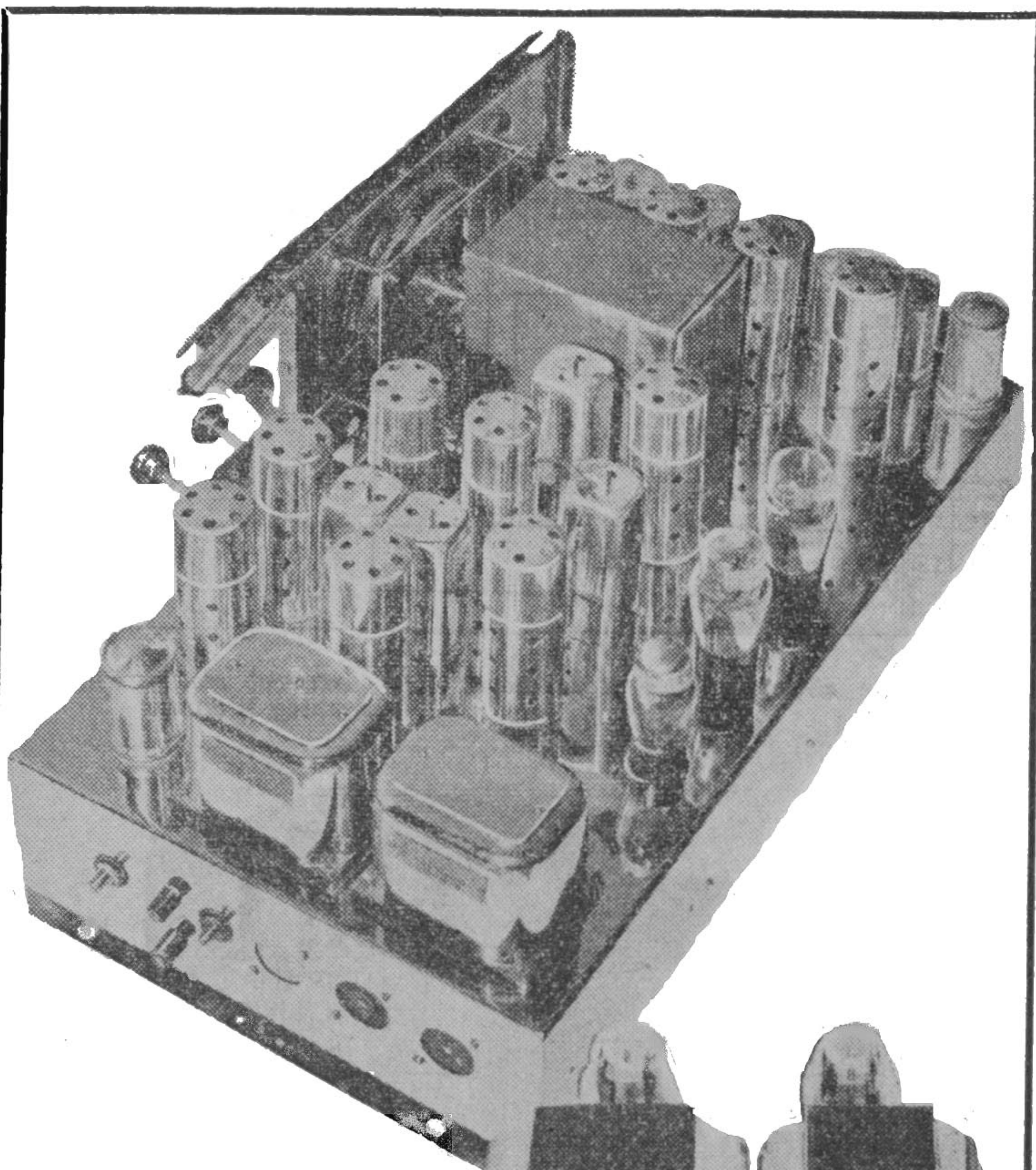
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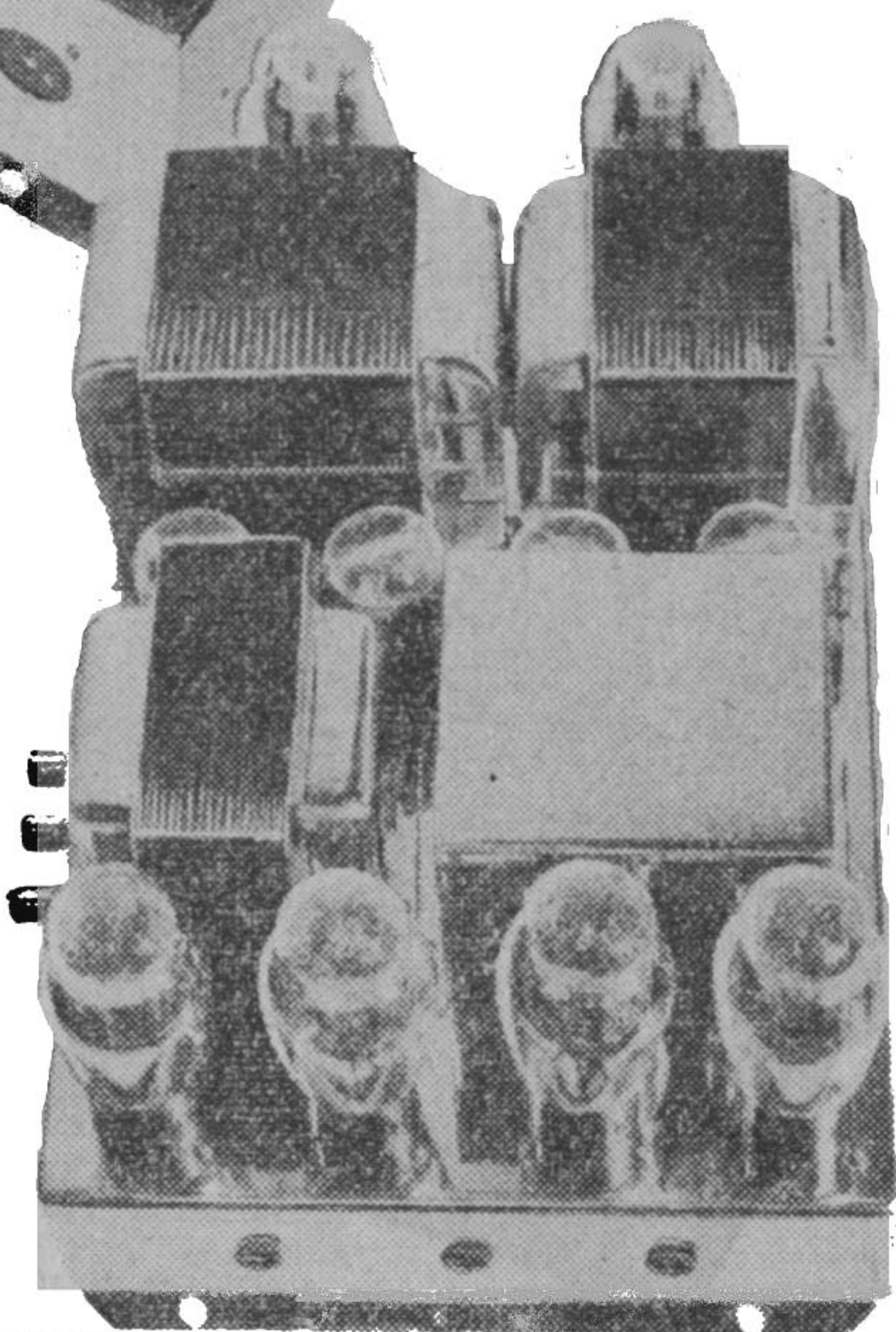
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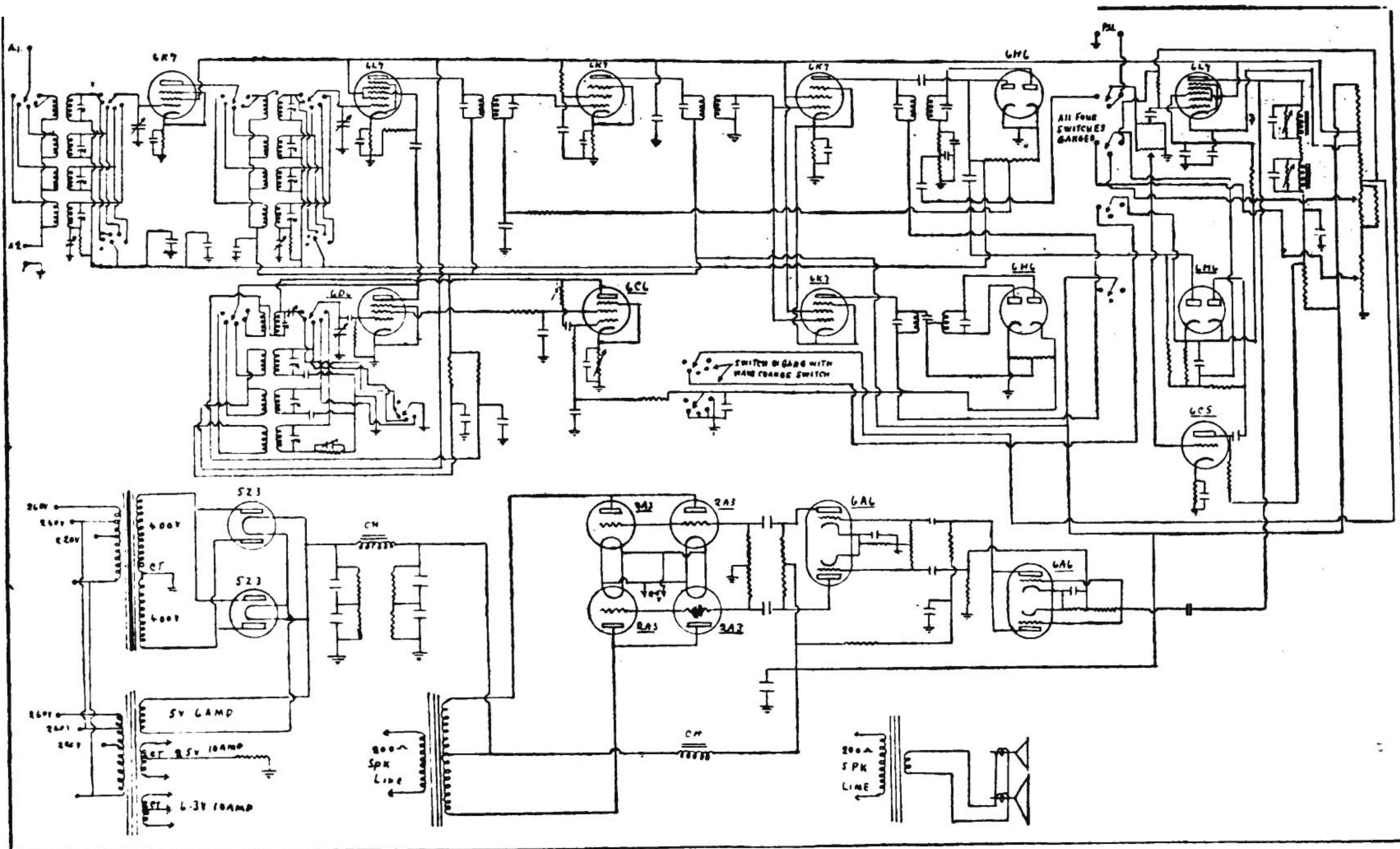
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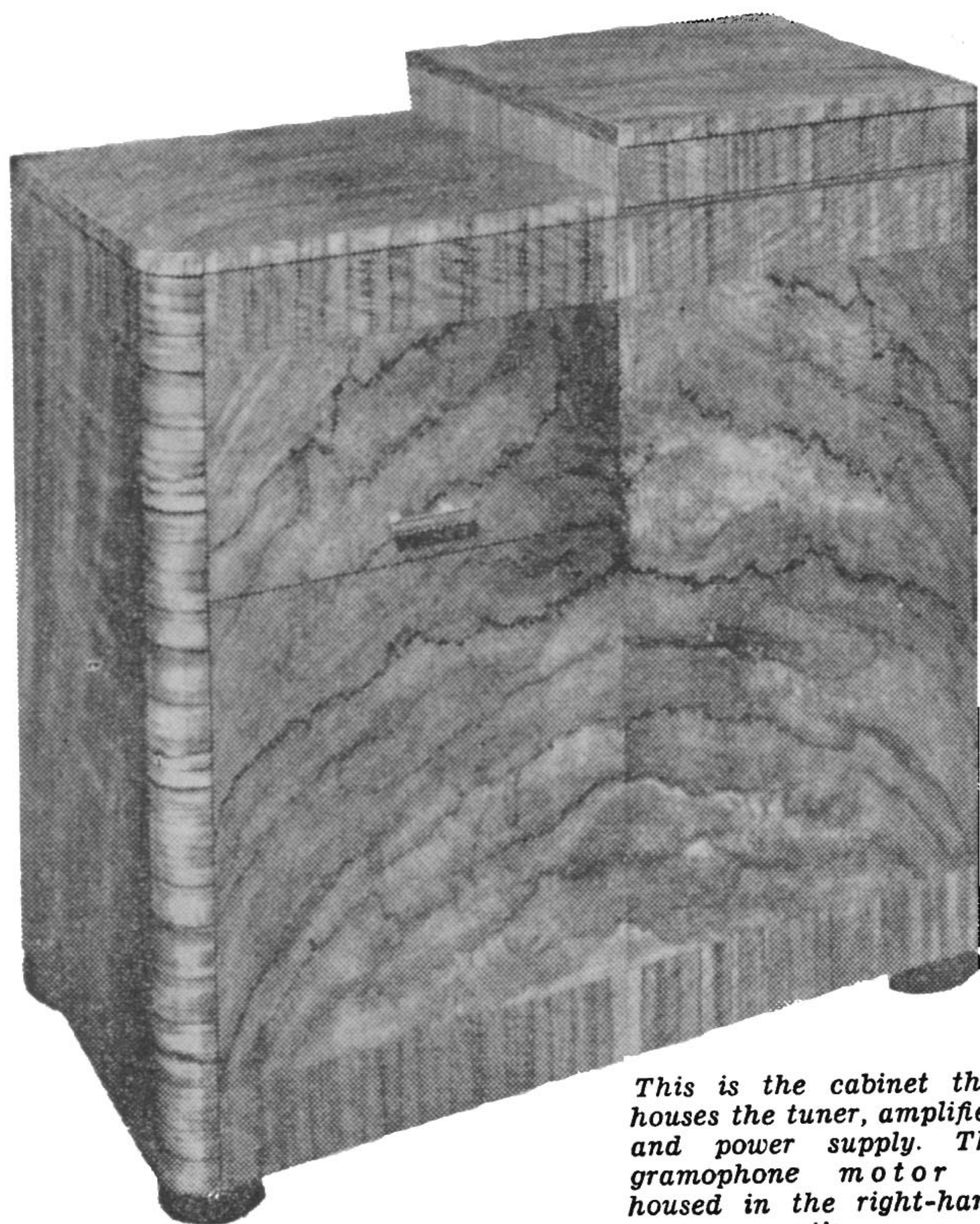
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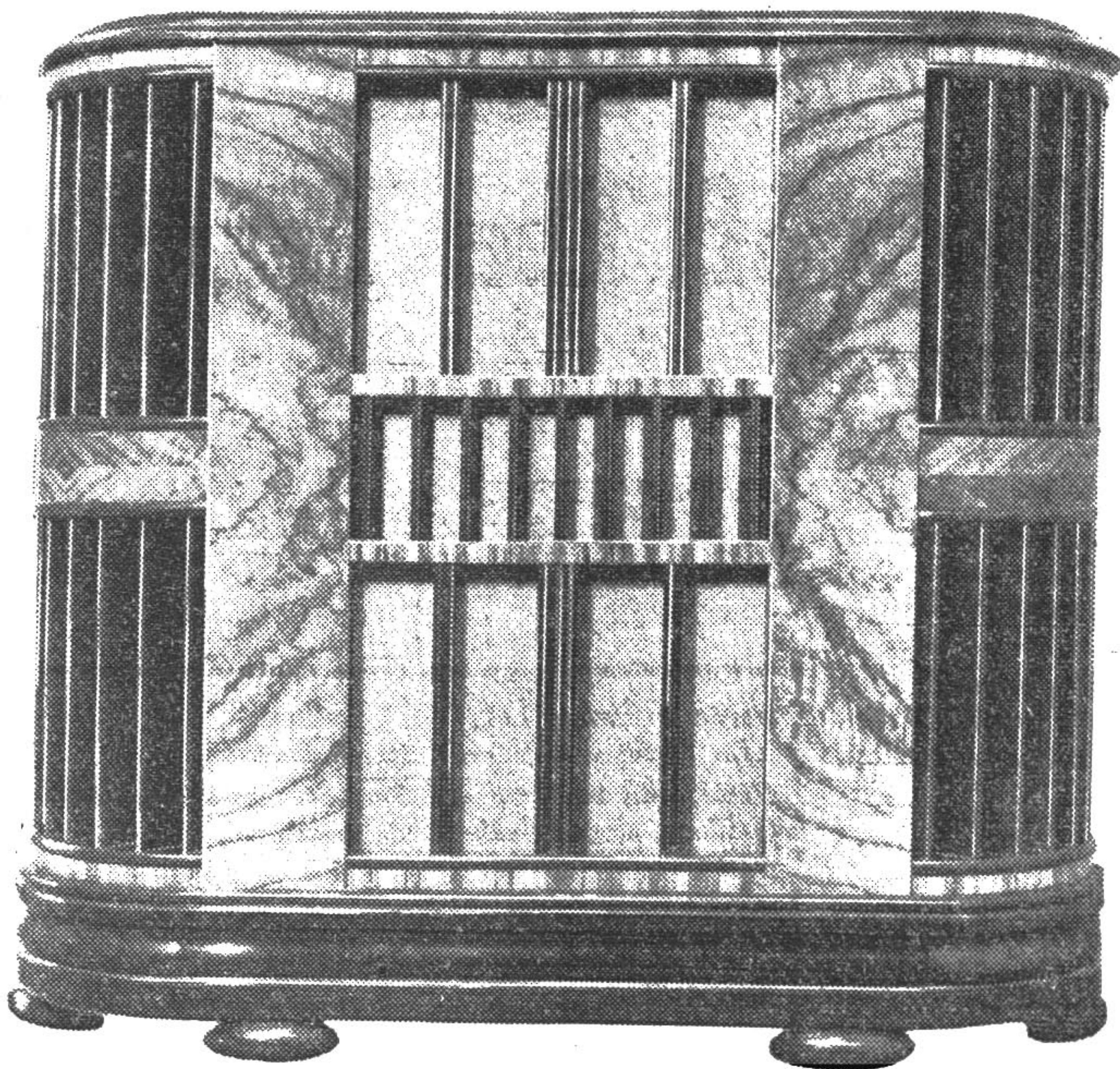
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