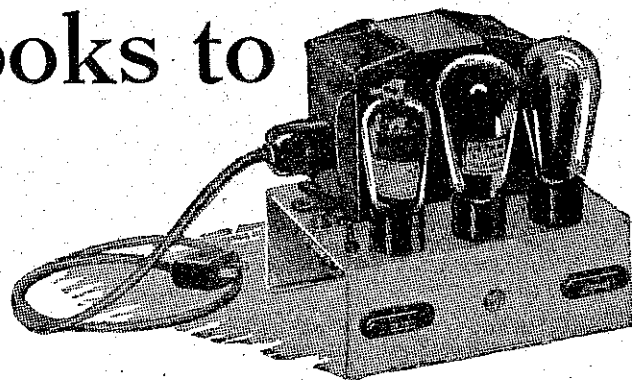


The Audio Amplifier looks to its Laurels

New Direct Coupled System cuts Cost and increases Power



It is not often that anything revolutionary happens in radio, but it seems that the Loftin-White system of direct coupled amplification will cause us to modify seriously our ideas of audio amplification. In short, the system makes old fashioned such conceptions of quality as push-pull, resistance, or transformer coupling, hum balancers, and smoothing chokes.

It employs only two valves beside the rectifier—the 224 and the 250 or 245, one smoothing choke in the rectifier system, no transformers other than the power, and but few condensers, and these are not expensive.

It rectifies without a special detector valve and is at the same time a per-

fect gramophone amplifier—there are no tricks in its construction, it is cheap to build and remarkably efficient. The overall amplification is over 300, thus delivering more power than ample for general use from the ordinary pick-up.

Coming!—The full constructional details of the new Loftin-White amplifier system.

The frequency range of amplification is astonishingly large when the screen-grid valve is used. It covers a range from a few cycles to a point where the amplification ceases at about three million cycles. A good amplifier based on modern conceptions cuts off at 10,000, or at the most 12,000 cycles. The high frequency end is extended to this astonishing limit by the screen-grid valve, which does not allow the capacitatively reactive plate circuit to cause degeneration through the valve capacity.

"When it is used as a detector amplifier system it automatically alters from an extremely sensitive condition when no carrier wave, or a very weak one, is impressed thereon to a heavily biased power handling condition for strong signals. The biasing is automatically regulated by, and in conformity with the strength of the carrier wave itself. In

detector operation the shield grid valve prevents reverse feed back of the radio frequency from the plate circuit, so that its load on the tuned input circuit is very small. This permits a much higher resonant voltage rise than with the normal detector and a constant increase in sensitivity and selectivity, as viewed from the plate circuit of the preceding radio-frequency valve or antenna circuit.

The system, comprising but two valves and operated whether by an antenna tuner or preceding radio-frequency valves, has the same sensitivity as the grid leak detector and a two-stage transformer-coupled three valve system, without the detector overloading characteristics of the former.

"The amplifier and the characteristics that fit nicely into the present practice of so-called power detection to aid in adapting the detector to sensitive handling of weak signals and powerfully handling strong signals."

It combines the qualities of power and grid-leak detection without their attendant limitations. These are the terms by which the originators of the circuit, E. H. Loftin and S. Young White, described their new circuit in "Radio News," where first the circuit constants were published. The series of articles running in this publication have aroused considerable interest throughout America. It is contemplated that they will bring about a great change in radio reception. It will not mean scrapping our

A new system coupling the grid and plate directly together, abolishing transformers and coupling condensers.

present outfits, but if the system proves itself as it is promising, it will mean a revision and rearranging. The compactness of the system can be seen from the illustration at the top of the page.

As is usual, New Zealand is not far behind new developments. Already Loftin-White amplifiers have been built up, and we know of several that are operating with remarkable suc-

cess. One Wellington firm has put a few in operation, and are preparing kit-sets, so we announce the good news that in probably the next issue of the "Radio Record" we will be publishing full constructional details.

Our expert, "Megohm," whose constructional articles have been a feature of the "Record" since its inception

nearly four years ago, is preparing details so that any constructor may convert his present amplifier or make this new one. He will explain fully how these new principles are attained by the directly coupled Loftin-White system.

RADIO LISTENERS' GUIDE

AN INDISPENSABLE WORK.

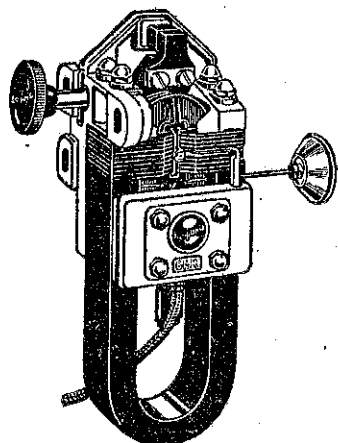
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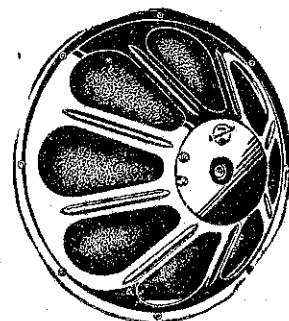
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