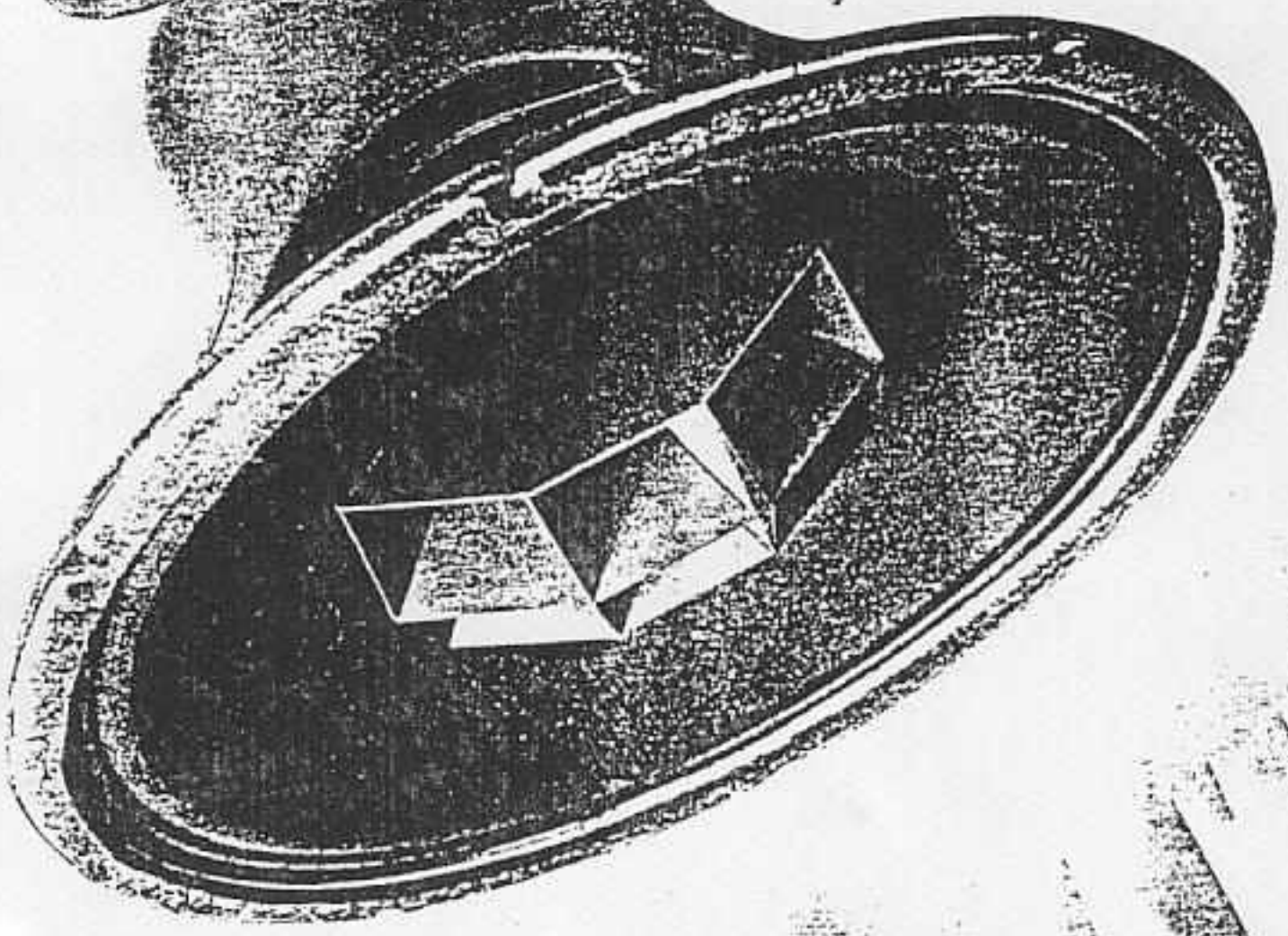
Loudspeakers

by Lansing

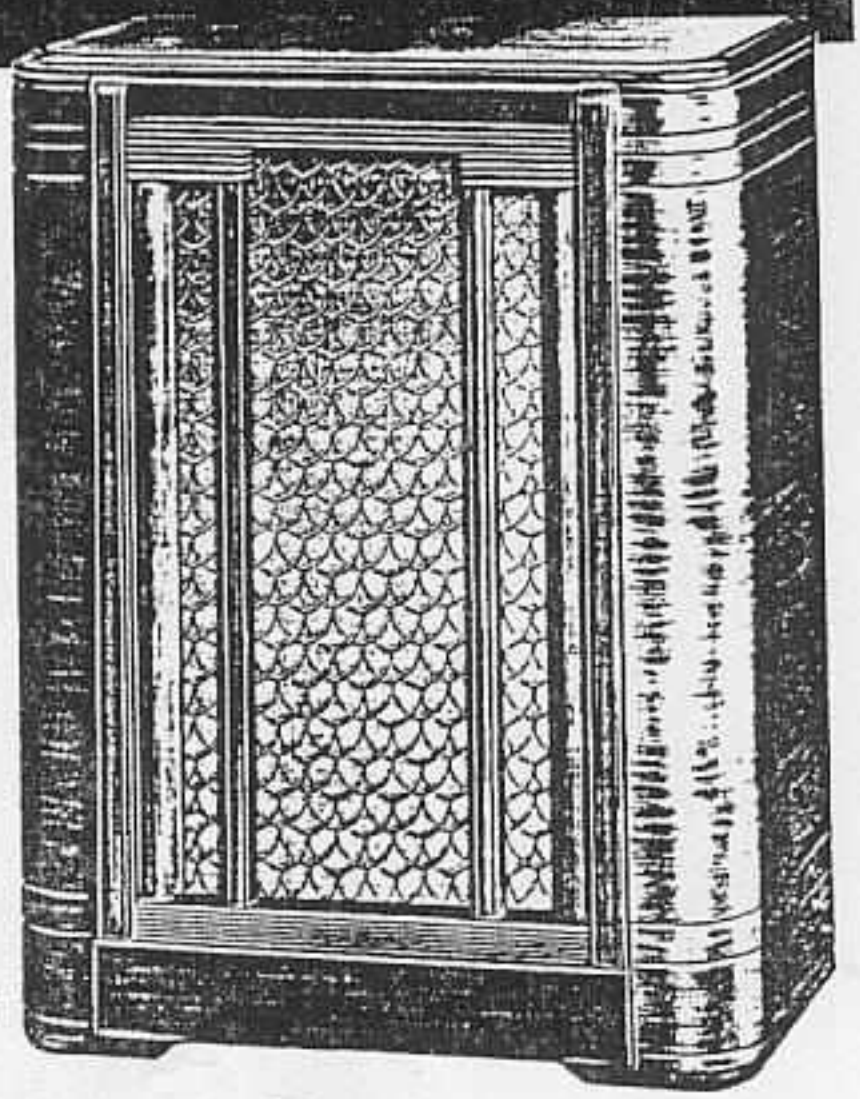


ALTEC LANSING

CORPORATION

First Time in History

A TWO-WAY LOUD SPEAKER IN COMPACT FORM



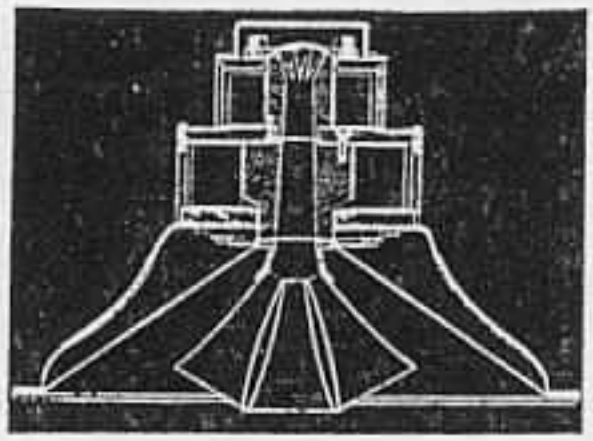
THE ALTEC LANSING

DUPLEX SPEAKER

By combining both high and low frequency units in a compact two-way multi-cellular loudspeaker, Altec Lansing engineers have provided a point source of high quality sound for monitoring, radio, public address and recording. The Duplex speaker, in actual performance, delivers up to 500% greater efficiencies in these operations. The Altec Lansing Duplex speaker delivers the very highest obtainable quality in home radio, phonograph and F. M. reproduction. Because of its high efficiency and small space requirements, the Duplex provides an ideal sound reinforcement system. Intermodulation effects always produced by single diaphragm type loudspeakers are not heard from the Duplex. A new speaker that revolutionizes sound reproduction.

THE DUPLEX SPEAKER DELIVERS INCREASED AREAS OF DISTRIBUTION

The new Altec Lansing Duplex speaker provides up to 1200% increased area of distribution. In the horizontal plane, the Duplex delivers 12 times the area distribution at high frequencies as compared to other single unit speakers of comparable size. The Duplex's horizontal angle of distribution is 60°. In the vertical plane, the Duplex's angle of distribution is a full 40°, considerably higher than any other speaker of similar size available for sound reproduction up to now.



Above is a cross-sectional drawing of the Duplex depicting high frequency and low frequency unit assembly.

High Frequency Horn Construction

One of the most important of many factors contributing to the amazing performance of the Altec Lansing Duplex speaker is the multi-cellular High Frequency Horn Construction. The voice coil is wound with rectangular aluminum wire and operates in a magnetic field of very high flux density, which is supplied by a recently perfected type of permanent magnet. The aluminum alloy metal diaphragm provides mass stiffness and high velocity of transmission speed at least five times greater than through paper cone material normally used for the small cones radiating high frequencies. This high frequency unit is designed to operate as a piston up to frequencies above the limit of audibility. The high frequency horn is a multi-cellular unit having six cells in a 2 x 3 configuration. Each cell covers a 20° solid angle, which means a combined area of distribution in the horizontal plane of 60° and 40° in the vertical plane. The high frequency horn is mounted in the face of the low frequency unit. Power from the high frequency unit is supplied through the pole piece of the low frequency unit.

CAUTION

Since this speaker has a very high fidelity due to its extreme frequency range, any hum or other distortion in the input signal will be reproduced. High quality signal input is necessary for best results.

Low Frequency Horn Construction

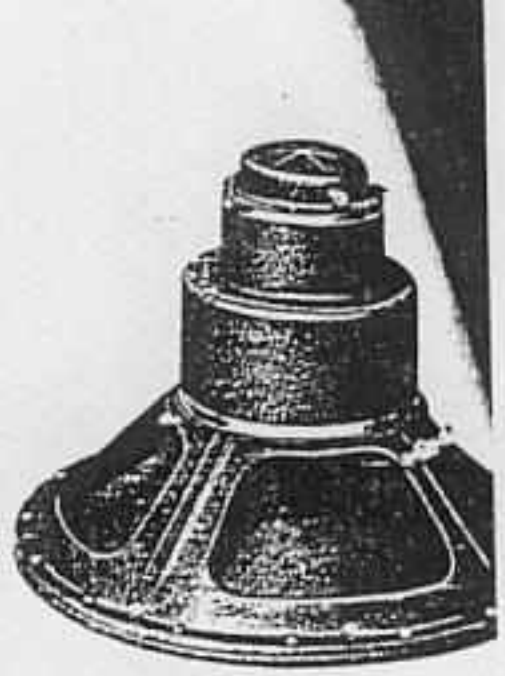
The three-inch voice coil of the low frequency unit is also wound with rectangular wire, and operates in a magnetic field of very high flux density, which is supplied by the newly perfected type of permanent magnet. Both the voice coil construction and the magnetic circuit design aid in delivering a very high efficiency. The low frequency voice coil assembly is mounted in a 15" stiff paper cone resonant at 38 cycles.

Dividing Network for Proper Division of Power

A 20 OHM dividing network of the constant impedance type is used with a crossover frequency of 1200 cycles for separating the power for each unit. This crossover point permits the horn to adequately load the high frequency unit down to a point where little power is being transmitted. It also eliminates any tendency to produce distortion effects as well as prevent damage to the high frequency unit.

Modern Cabinet Designed For Beauty, Performance

The cabinet, housing the Duplex Loudspeaker, was designed first of all for high quality sound reproduction. It provides eight cubic feet of air space which permits the Duplex to radiate efficiently to 60 cycles for a wider range of tonal quality. The cabinet is artistically designed and finished in beautiful walnut. Special cabinets for ceiling and sidewall mounting are also available on request. A small, compact 60 DB gain amplifier with 15-watt output is also available for driving the Duplex Speaker.



Above is pictured the Dupl speaker showing high freque and low frequency unit in complete assembly.

Duplex Speaker Specifications

Area of Horizontal Distributio **60°**

Area of Vertical Distributio **40°**

Low Frequency Cut-off Speak Mounted in Cabinet: **60 cycle**

High Frequency Cut-off Speake Mounted in Cabinet: **Abov audibility**

Duplex Unit Impedance: **20 OHMS**

Dividing Network Crossover **1200 cycles**

Dividing Network Impedance: **20 OHMS**

Signal Capacity: **25 watts**

Duplex Speaker Diameter: **15-3/16**

Duplex Speaker Depth: **10"**

Cabinet Height: **38"**

Cabinet Width: **30"**

Cabinet Depth: **16"**

Shipping Weight Complete Unit in Cabinet: **150#**

ALTEC LANSING CORP.

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