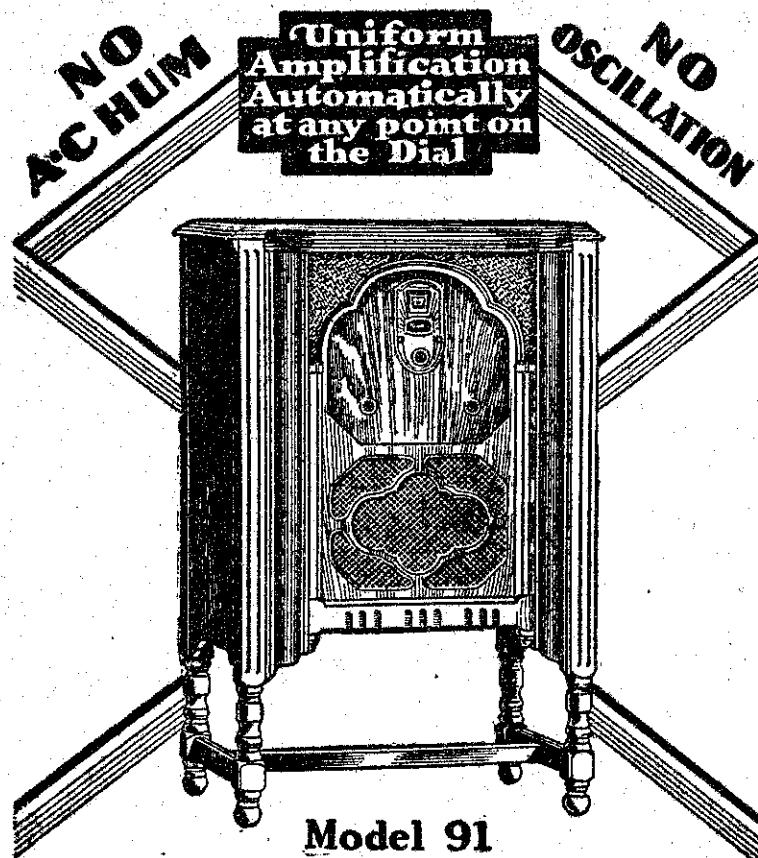


Majestic RADIO

offers Exclusively this

Wonderful Improvement



Model 91

£48

Outside Auckland, Wellington, £50
Christchurch and Dunedin

TERMS: £8 Deposit; £3 Monthly.

Power Detection and the new -45 tubes plus four tuned stages of radio frequency enable Majestic to produce the most powerful and selective radio set ever built. Absolutely no hum and no oscillation at any wave length. Automatic sensitivity control gives uniform sensitivity and amplification in both high and low wave lengths. Improved Majestic Super-Dynamic Speaker. Extra heavy, sturdy Majestic Power-Pack, with positive voltage-balast, insures long life and safety. Early English design cabinet of American Walnut. Instrument panel overlaid with genuine imported Australian Lacewood. Escutcheon plate and knobs finished in genuine silver.

FREE Home Demonstration

In every town there is a Majestic Radio Agent who will gladly arrange a demonstration in your own home without charge or obligation. Auckland residents should 'phone 42-992.

N.Z. Distributors: R. A. SPEDDING, LTD.,
Anzac Avenue, Auckland.



Lewis Fady
LIMITED

"THE BOX OFFICE,"
Queen Street, Auckland;
15 Karangahape Road;
also at Hamilton.

LEWIS FADY LTD., Queen Street, AUCKLAND
Please send me illustrated particulars of
Majestic Radios and inform what allow-
ance you would make me on my pre-
sent set, particulars of which I
enclose.
Name Address R.N.Z.

ery of a single such chest or of the fabulous, life-size golden statue of the Virgin would enrich the inventor far beyond his wildest dreams and enable him to finance his proposed expedition to "Cocos Island," the scene of Robert Louis Stevenson's "Treasure Island."

These searches, the one now proceeding at Panama, and that contemplated at Cocos Island, are, of course, only two possible applications of a device which seems to hold many interesting possibilities.

Hearing Light and Seeing Sound

A Recent American Invention

SOUND becomes visible and light is made audible by an apparatus invented by an American engineer. A beam of light, propagated by a specially-devised arc, travels silently about the room, only to break into music when it encounters a target mirror. The equipment is known as the "photophone," and the transmissions are called "narrow-casting," to distinguish them from broadcasting.

In demonstrating the photophone, the inventor used gramophone records with the sending apparatus. The energy is sent over the light beam to the transforming and reproducing elements, which are mounted on a tripod some distance away. When the inventor held his hand in the path of the light beam, the music stopped, but immediately he allowed the light to filter between his fingers the sound recommenced and increased in volume. A cardboard disc, with holes of various sizes from a pin-hole to one of an eighth of an inch in diameter, gave varying degrees of sound volume when used to intercept the beam.

The light of a burning match was changed into sound by the reproducer. When the match was struck there was a rattling, crashing sound which lasted during the combustion of the chemicals. The burning wood gave off little sound. A similar demonstration utilising the varying light from a small dynamo-driven flashlight sounded like a siren.

A speaker at a microphone or a gramophone record can serve as the sound source, but the inventor for demonstration purposes usually employs the latter in conjunction with a magnetic pick-up by means of which the recorded music is transformed into electric current.

This energy is led to a mirror, one-thousandth of a square inch in area, delicately suspended in a magnetic field by means of wires. At one side is placed an ordinary automobile headlight lamp, the light from which is focused on the tiny mirror.

The mirror, quivering in time with the electric current, focuses the light by a lens into a narrow beam, which, pulsating at the frequency determined by the music on the record, is projected through space to the light-collecting mirror or lens of the receiving apparatus.

At this point another transformation must take place; the light must be converted to sound. The mirror or lens condenses the light on the photo-electric cell used in the apparatus. This

cell, which responds instantaneously to every variation in light intensity, translates the light into electric energy, and this after amplification passes to the loudspeaker.

The difference between sending sound over a beam of light and by way of radio is simply one of degree. The physical transmission in both cases is the same, except that different transmitting and receiving devices are used. In the case of light, frequencies of several hundred trillions per second give wave-lengths of the order of a fifty-thousandth of an inch. Broadcast waves are normally from 600 to 1500ft. in length.

The long wave of comparatively low frequency spreads out in all directions, but the beam of the light is essentially a straight-line affair and with a suitable forming lens or reflector can be conserved and sent over considerable distances without a substantial spread.

Broadcast waves will bend around obstructions and pass through walls, but the light wave will not bend, since the wave is so short in comparison with the size of the obstruction. It will pass through only such solids as are transparent.

The inventor has been able to transmit music across a street in broad daylight by the medium of a sufficiently powerful light beam; and at night, successful transmissions over a distance of three miles have been accomplished. The restriction on the distances over which communication can take place is compensated for by the highly directional effect obtained by use of the light beam. Thus, the advantage of this system over radio for purposes of secret communication in war-time is apparent. Because of its limitations, however, it would probably be used extensively only by warships and aeroplanes, where inter-vision is less unbroken than elsewhere.

An International Broadcast

Music of Nine Countries

A NEW step in international broadcasting was demonstrated recently on Thanksgiving Day in America, when a two-hour musical programme electrically recorded in nine countries during a period of only two months was carried to listeners throughout the United States. National anthems and folk songs of the countries represented, interpreted by military bands, orchestras and choruses, were heard exactly as they were transcribed at a sound studio in Europe.

The electrical recordings which render this broadcast possible were made in a portable sound studio which was taken overseas in August, packed in forty-four trunks and special cases. The apparatus is said to have taken six hours to set up and the same time to take down and pack. On one occasion, in order to keep an engagement with the Garde Republicaine Band in Paris after the bands of the three guards regiments had played for it in Great Britain, the equipment was carried across the Channel in two chartered aeroplane liners.