

**DE FOREST WINS****LENGTHY LITIGATION****THE FEED-BACK CIRCUIT.**

Dr. Lee De Forest's victory last month in the United States Circuit Court of Appeals at Philadelphia, declaring him the original inventor of the feed-back regenerative circuit and oscillating audion (vacuum tube), is not expected to disturb the radio industry, leaders in the business said to a New York reporter. Further court action is expected, and possibly a final decision by the United States Supreme Court.

Edwin H. Armstrong, heretofore credited as the inventor of the regenerative circuit, whose patents are controlled by the Westinghouse Electric and Manufacturing Company, said he had maintained silence on the subject during litigation which has been in progress for the past five years and did not care to change his policy.

**FURTHER ACTION POSSIBLE.**

Victor Beam, representative of the Westinghouse Electric and Manufacturing Company, said he believed further action would be sought. He said that he could see no way in which the present decision would affect the present activities in manufacturing radio sets to be marketed through the Radio Corporation of America.

Judge Woolley, of the United States Circuit Court of Appeals, declared in his opinion (endorsed by his associate Judges) that the evidence showed that Dr. De Forest came upon the possibilities of the use of the audion in radio on August 6, 1912, while experimenting with a "two-way telephone repeater" in the laboratory of the Federal Telegraph Company at Palo Alto, California, where he was chief of the research department. That date was earlier than those claimed by the other three inventors, the nearest of whom was Major Armstrong.

**ENTITLED TO BROAD USE.**

While not disputing the "discovery" by De Forest, the Westinghouse company, which holds the Armstrong patent, claimed that De Forest was "ignorant" of the real importance of his discovery and had merely "stumbled on it"; that he had not found it as the result of any research radio work, and therefore its use could be applied, so far as he was concerned, only to wireless or telegraph.

Judge Woolley declares, however, that DeForest is entitled to much broader uses of his discovery.

As ground for taking this view the Court pointed out that about two weeks after the date mentioned Dr. De Forest and his laboratory assistant, Herbert E. Van Etten, made a new feed-back hook-up, which, while it was different from the first when the discovery was made, produced practically the same results. This showed, the Court says, that De Forest under-

**GETTING TOGETHER****COMPANY AND LISTENERS****INTERESTING PROPOSAL.**

Listeners are soon to be offered an opportunity of taking more active interest in broadcasting. It is the intention of the Broadcasting Co. to put into practice a scheme whereby licensed holders will be able to co-operate with the company in the difficult task of putting on the air "what the people want," and in seeing that they receive in good order and condition what is sent to them.

A detailed announcement of what the company's proposals are will be made very shortly, and it is to be hoped that the licensed holders generally will enter into the spirit of the company's offer, and not leave the duty to a few.

The company's scheme will provide a unique opportunity for those who are served to co-operate with those who serve, and, if the listeners make the most of the chance, the success of broadcasting in New Zealand is assured, for listeners will be a very large and well-satisfied body.

The company's proposals go further, or are wider in some respects than might have been expected, but, for all that, there need be no surprise when the proposals are made known. They are only in accordance with the company's policy to provide the best service possible, now that it has completed its constructive operation.

The company has of late been steadily increasing its staff, and improving its organisation, with a view to increasing the value of its service to listeners, and now the stage has been reached when the listeners are to be asked to co-operate and to lend a hand in an advisory capacity. The latest moves by the company should be widely approved by all, for the company's proposals will then ensure that the viewpoint and wishes of all listeners will be placed directly by the listeners' own representatives before the officials responsible for the programmes, and license holders will be able to rest assured that everything possible is being done, not only to broadcast programmes which will meet the general approval, but to ensure that as perfect reception as possible is being obtained. These new proposals will be awaited with interest.

**TOTE FIGURES****INCREASE IN CHRIST-CHURCH****BROADCAST PUBLICITY.**

Carnival Week in Christchurch, which has figured so prominently in the radio world of late, has been strikingly successful, not only from a broadcasting point of view, but from the viewpoint of the Canterbury Jockey Club, Canterbury Trotting Club, and of the A. and P. Association. The publicity given resulted in record attendances, and a complete answer has been given to those people who think that the broadcasting of descriptions is detrimental to a sport.

The totalisator figures for the three days of trotting showed an increase of £26,308 compared with last year. The racing figures were £201,419 10s. compared with £197,305 last year, an increase of £4144.

**MAORI ARTISTRY****DELIGHTFUL PROGRAMME FOR 2YA.**

A programme such as no other part of the Empire could provide will be "on the air" on the evening of Thursday, December 1, broadcast by 2YA, on relay from Otaki Maori College. New Zealand is justly proud of her Maori citizens and of their musical gifts. A richly varied bill of fare, affording full scope for the display of their vocal, instrumental, and linguistic talents has been planned. Among the soloists will be Miss W. Tahiwai, Mrs. Rairi, and Messrs P. Tahiwai, Kingi Tahiwai, and H. Mahina. The instrumentalists will be Mrs. Wills (piano), Miss May Cook (violin), Mr. P. Tahiwai (cello), and Mr. Reuben Gilbert (guitar). Concerted numbers, both vocal and instrumental, will be given by members of the Tahiwai family and also by the college boys and school children.

Much of the programme will be typically reminiscent of the old-time Maori. There will be an appropriate "opening scene," per medium of a series of choral melodies descriptive of "Maoris at Home," and by way of an equally appropriate finale there will be heard the thrilling strains of the haka. Be sure to "tune in" for this unique broadcast entertainment.

"With any discussion of broadcasting one must give thought to static and the fluctuating transparency of the atmosphere as experienced in radio transmission. Hence the question:

"It will be difficult, of course, to entirely eliminate static, or rather overcome its interference. But engineers have made notable strides in overcoming the handicaps of static by the creation of the wire network system of broadcasting for the distribution of programmes, by the use of greater transmitting power, and by a corresponding increase in the efficiency of broadcast receivers."

**Make This a Radio Xmas****A GREAT OPPORTUNITY FOR THE TRADE**

From a broadcast standpoint the past year has been a notable one in the annals of New Zealand. Radio broadcasting in the Dominion has, since last January, grown out of swaddling clothes, and has now reached the stage of adolescence. During this year the Radio Broadcasting Company of New Zealand, through the installation of high-class broadcast stations, has raised the popularity of broadcast listening to a degree which was undreamt of two or three years ago. From a total of about 10,000 listeners the number of radio licenses have increased to the astonishing aggregate of over 35,000 during the past twelve months. This is striking proof that the enterprise and endeavours of the Broadcasting Company have been directed along successful lines. The Dominion, through the establishment of the super-power Wellington station, 2YA, can boast of the possession of the second most powerful broadcast station in the British Empire, and this alone is striking evidence of the desire of the company to place broadcasting on a firm basis in this country.

A fitting occasion to signalise the undoubted success of broadcasting in New Zealand is offered the radio trade in the approaching Christmas season by making this a "Radio Xmas." Within the next few weeks there will be abundant scope for the radio trade to bring broadcast listening before the N.Z. public in a way that has not yet been attempted in the Dominion. The Yuletide, with its age-old custom of the gifts of presents to the young, and also the exchange of gifts among adults, opens up a most attractive opportunity for the radio trade to cater for this approaching demand. The slogan among radio dealers throughout New Zealand should be: "Make this a Radio Xmas." But the slogan must be amplified by attractive window displays and the liberal ticketing of goods suggesting their suitability as Xmas gifts. Large show cards in the windows, appropriate decorations and the cultivation of an atmosphere calculated to arrest the attention and interest of the public will combine to capture trade to an extent which will make this a truly "Radio Xmas." The juvenile will be in quest of a present, and paterfamilias, no doubt, can be relied upon to purchase that which will please the recipients most. The humble crystal owner may be reasonably regarded as a potential valve-set purchaser sooner or later. And paterfamilias, himself, may feel inclined to launch out on the purchase of an addition to the household chattels which will distribute enjoyment for all. The season is opportune, and the radio traders should rise to the occasion. This is their chance to "Make this a Radio Xmas."

**NEW WONDER VALVE****FOR RADIO FREQUENCY****NOT ON MARKET YET.**

A new four-element radio valve, designed to give greater amplification with a minimum of howls, was announced recently by Rimer B. Bucher, representative of the Radio Corporation of America. The new valve is being circulated among manufacturers licensed under the RCA patents to see what applications they can make of the device, because it is radically different from standard valves now in use. It is designed for battery operation and so far not for use with the light socket current.

"This tube when placed on the market will not render present sets obsolete," said Mr. Bucher, "nor will it cause any revolutionary developments in the radio industry. It is merely a means of improving radio frequency amplification. The tube is in the experimental stage at the General Electric Company and the Westinghouse Electric Manufacturing Company, where it is being developed for the Radio Corporation of America. It will not be adaptable to present-day sets. Each stage of radio frequency must be shielded and three tubes should be used to obtain the best results.

**Big Amplification Factor.**

"The number of the tube is UX-223," said Mr. Bucher. "The voltage amplification factor is from 150 to 200. The average radio frequency amplifier gives an amplification of six. The plate voltage is 135 maximum. The filament voltage is 2.5 and it requires .13 ampere.

"The applications of the new tube are not fully understood. It is not a

cure-all. However, I know that experimenters will have lots of fun with this four-element device."

**Make-up of New Tubes.**

The new valve has a plate, filament, and two grids. The standard valve has a plate filament and one grid. It is the outcome of the development of the four-element valve now being used successfully in short wave transmitters built by the General Electric Company. It is this valve as a generator of electrical oscillations which has enabled the development of the five-meter transmitter with which engineers at Schenectady are now experimenting.

The addition of the fourth element in the valve is said by engineers to make the circuit more stable by preventing feed-back. No neutralising methods are required in the receiving circuit when the four-element valve is employed, thus the construction is simplified and the set is more easily controlled without the customary howls often caused by feed-back or self-oscillation.

Mr. Bucher said that he did not know when this valve would be marketed.

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Mr R. J. Howard, member for Christchurch South, during the Committee discussion on the Post and Telegraph Amendment Bill in the House of Representatives.

"It is doubtful whether the case will be heard by the Supreme Court," said S. B. Darby, Jun., patent attorney for the De Forest Company. "The case is based on old questions of law which are well established, and, therefore, present nothing novel to warrant the Supreme Court considering the case. There is no appeal from this decision as a matter of right. It is a mere matter of grace and is wholly dependent upon whether or not the Supreme Court cares to review it by granting a writ of certiorari."

**FAR-REACHING EFFECT.**

"It is difficult to predict how far-reaching the effect will be. One thing is certain, the so-called 'Armstrong licensees' who have been paying tribute to the Armstrong patent will now realise that they have been paying that tribute to the wrong parties and will be liable to the De Forest Company, the owners of the DeForest patents, for all infringing operations since September 2, 1924, the date of issuance of the DeForest patent."

**OTHER CLAIMS OVER-ruLED.**

The Court, in a verdict by Judge Victor Woolley and concurred in by Judges Buffington and Davis, over-ruled the claims of the Government that Alexander Meissner, a German inventor, "discovered the feed-back and audion; those of the Westinghouse and Manufacturing Company that Major Edwin H. Armstrong, a Columbia University graduate, was the inventor, and the claims of the General Electric Company that the vital radio discoveries were made by Irving Langmuir."

stood the importance of his finding.

**RESULT OF DECISION.**

The practical effect of the Court's decision is somewhat moot, for Judge Woolley in his opinion calls attention to references of counsel in a suit between De Forest and the Radio Corporation of America that should the Court decide in De Forest's favour it would simply mean that the Westinghouse company and the General Electric would be permitted to use the De Forest invention without the payment of royalties, as they have licenses from the American Telephone and Telegraph Company, to whom De Forest gave a license years ago.

Had the decision been in favour of any of the other three parties the victor would have royalty claims against Dr. De Forest and all the others, it was explained.

**CRIBBING FROM UNCLE SAM.**

Uncle Sam, who conducts the children's service at 3YA on Sunday evenings, received a letter the other day from a Sunday school teacher in the North Island: "I hope your addresses are not copyrighted, as I have cribbed some of them for our youngsters. One day one of the lads said to me afterwards, 'You've been listening to Uncle Sam.' I had."

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