

mechanical vibration, once started, produces an electrical current which is applied to the grid of the valve and is magnified, and this magnified current is turned back to the vibrator to keep it going.



**SENATOR MARCONI,**  
whose name is known better than any other in wireless telegraphy.

In return for being sustained in motion, the mechanical vibrator imposes its own steady jog-trot on the electrical currents, and thus we get very well-timed electrical oscillations.

Meanwhile, something just as important as any of the previously-men-

tioned inventions was emerging into the realm of knowledge during the years 1922 and 1923—something that will always stand out in the history of radio-telegraphy as an instance of how an unpatentable discovery may be just as valuable industrially as a patentable invention.

This discovery, put briefly, was that short waves—of 200 metres and less—could be transmitted over a large circle of the globe in greater strength than the long waves—several kilometres in length—which had always hitherto been used.

#### The Short-Wave Discovery.

IN December, 1921, a group of American amateurs succeeded in transmitting signals of 200 metres wavelength to England, and in December, 1922, hundreds of American, British, and French amateurs succeeded in similar transmissions. They would have achieved even more striking results if the international regulations and local laws had permitted them to use still shorter wave-lengths.

It may be that some of the successes of 1922 were obtained by utilising the harmonics of 200-metre transmitters, either intentionally or otherwise. Early in 1923, however, the amateur world was buzzing with waves 100 metres long which were now permitted to amateurs in the United States, and it became clear that even shorter waves might be commercially used for long-distance communication, though, so far as our knowledge went, they were subject to almost complete fading at certain times of day and season.

Early in 1923 the great wireless companies began to investigate the matter. The Radio Corporation of America erected short-wave plant in Maine, and the Marconi Company arranged

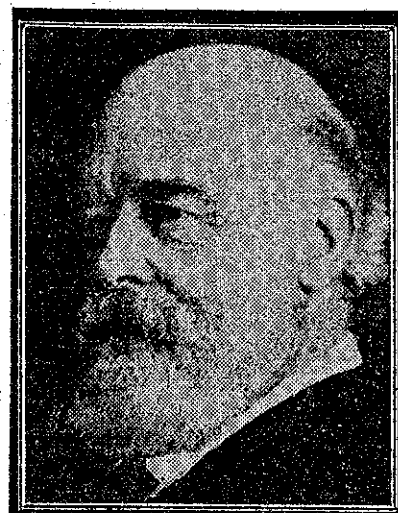
but such messages were still subject to pronounced fading. The first British commercial message organised by the Post Office, followed their experiments of 1924, suffered from similar irregularities.

However, about this time the British Government ordered from the Marconi Company, on the recommendation of the Wireless Telegraphy Commission, a number of short-wave reflector stations—now called “beam” stations—for direct communication with the Dominions during certain hours of each day.

#### DX Club

##### Station Identified.

PERHAPS I can in part supply the answer to the inquiry by T. M. (“Geni,” in your DX column). I often hear this station—he comes in at great strength with me—and I make his call VKJ. The other two are VKL and VKM, and they evidently indulge in two (or three) way telephony every night from 6 o'clock till about 7.40. They never give their address—at least I have never heard them give an address. They talk family matters mostly, and occasionally put over records until the other fellow gets into touch. I presumed they would be Victorian amateurs.—Jas. C. Parcell (Cromwell).



**SIR OLIVER LODGE,**  
Britain's world-famous scientist-inventor.

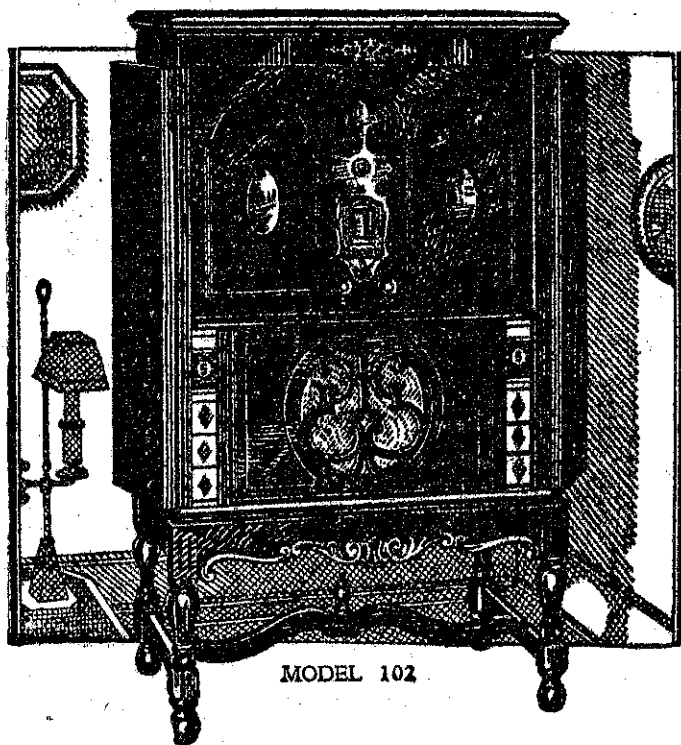
experiments based on the Cornish station of the company.

#### Birth of the Beam.

THE first commercial message on short waves was sent from Maine to Buenos Aires in September, 1923,

GREAT progress has been made in late years in the design of “mass” accumulator plates for use when the rate of discharge is very low relative to the capacity of the cell.

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