



THE AUSTRALIAN WHO INVENTED TV

For those who could afford to be involved, the late Victorian era must have been an exciting time technologically in Australia. Every town had its Mechanics' Institute, of course, and Australians were involved in some marvelous work. From the biggest astronomical telescope in the world ¹ at Melbourne Observatory¹ in 1868, to James Harrison who demonstrated practical mechanical refrigeration, especially of meat, and whose first refrigerated ship, Norfolk, had been launched in 1873, through the great aeronautical engineer Lawrence Hargrave, to the nuclear physicist and later Nobel laureate William Bragg at Adelaide University, things were a-buzzing.

In those days, people thought that the first motor-car had been built in 1889 by the Austrian Stephen Markus. In 1893, five years later, the first car was built in America. Australians began designing and building motor cars in 1894. Among those Australians was Henry Sutton.

¹ Actually the Great Melbourne Telescope was a fizzer. It was designed by the Irish, and is said to have retarded the development of large telescopes for thirty years. However at 1270mm diameter it was the largest steerable telescope in the world at the time. In 1947 it was given to the Mt Stromlo Observatory in Canberra - where they made it work properly.

Henry Sutton was born in Ballarat in 1856 the son of a music shop proprietor. He was educated by his mother until he was eleven and he studied unaided from then on. He had read all the books in the well stocked Ballarat Mechanics' Institute before he was fourteen. He attended the Ballarat School of Design briefly and won a silver medal and thirty prizes for drawing. From 1883 to 1887, Henry taught applied electricity and magnetism at the Ballarat School of Mines

At the age of ten, Henry had studied the traces of insects wings against smoked glass. He formed a theory of flight and at the age of fourteen he built and flew a clockwork model ornithopter that from all reports was highly stable and controllable. In 1878 he was invited to present a paper on his theories of flight to the Royal Aeronautical Society in London.

As early as 1870, Henry had designed and built a DC dynamo, with a practical ring-armature. Now although the Italian Pacinotti had invented a similar such device in about 1860, it wasn't until 1871 that Gramme showed his improved version and the world took notice. Gramme used the same principle as Sutton.

Alexander G. Bell received his patent for a telephone in 1876. Less than a year later, Henry Sutton had devised and constructed twenty different types of telephone. Sixteen of these types were subsequently patented by other people. Bell visited Sutton to see the complete telephone system Henry had installed in the family's music shop warehouse.

Thomas Edison announced his development of the incandescent lamp on 21 Dec 1879. By then, Henry Sutton had been working on incandescent electric light for some time. The success of his experiments was acknowledged by the Victorian Government Astronomer on 6 Jan 1880.

Henry wrote scientific papers on electricity, photo engraving, colour photography. He devised a new form of electric storage battery and his paper on that design was read before the Royal Society in London in December 1881.

Henry was a shy modest, altruistic type of fellow and he rarely patented his work. There seem to be are only four patents in his name. In

Victoria - for “improvements in electrical circuits for telephonic purposes” in 1886 and for a method of photo engraving in 1887; and in NSW for explosion (internal combustion) engines and for intaglio ... photo printing.

He designed a mercury air pump which was described in *English Mechanics* and the *World of Science* on 21 July 1882 and was recommended for the manufacture of incandescent lamps. He experimented with wireless and built a portable set, perhaps the world’s first, which had a range of 500 yards.

We can see then that by 1885 Henry was well equipped to invent the “telephotographer” It is said that there was some intention to transmit pictures of the Melbourne Cup to Ballarat but there is no evidence that this actually happened.

Be that as it may, there is no doubt that Henry Sutton designed and built a television system transmitting pictures by electric telegraph. I do not have full details of the set up, but I have this description of the receiver.

The screen was viewed through a tube. Light from a lamp at one end of the tube was focused through two polarisers to a pair of electrodes carrying signals from the transmitter. The electrodes, coated with carbon bisulphide, modulated the light waves which were then passed through another pair of polarisers before being synchronised with signals from the transmitter by a revolving Nipkow disc.

Details of Henry’s telephotographer were published in *English*, *French* and *American* journals in 1885 and 1886. They were reprinted in *Scientific American* in 1905. A schematic diagram was published in *The Telegraphic Journal* and *The Electrical Review* in 1890. And in that year Sutton demonstrated the system to the Royal Society.

Henry Sutton died on 28 July 1912 and was buried in Brighton cemetery.

Reference: *Australian Dictionary of Biography* Volume IV

ⁱ In 1992 the 1270mm telescope was fitted with the largest digital light detecting system in the world. I was used to try to discover the nature of the cold dark matter of the universe by measure its gravitational effect on stellar light. The Telescope was destroyed by bushfires in January 2003.