

Canadian firsts

Canada has an illustrious record of invention and technological innovation dating back to the middle of the nineteenth century.

These early discoveries and inventions fall generally into the categories of communications, transportation, resources and medicine and range from the world's first commercially successful oil well to the first practical electron microscope.

Communications: a telling story

- Edward Rogers produced the first commercially sold batteryless radio, and in 1927 he built radio station CFRB, the first radio station transmitting without batteries.
- In 1942, the transceiver was patented – a combination transmitter and receiver used in army tanks during World War II.
- Dr. Alexander Graham Bell, born in Scotland, invented the telephone in 1874 while residing in Brantford, Ontario. The first actual use of telephone lines was in Canada.
- The world's first sponsored film production was a series of half-hour films produced across Canada by CPR in 1903 in order to attract investment and increase emigration from Europe.
- Thomas Willson, a prolific Canadian inventor (1867-1935), discovered calcium carbide and also invented the Willson gas buoy and gas beacon used in marine signals.

- In 1887, John Connon of Elora, Ontario, patented the first panoramic camera ever made which would photograph in an entire circle at one exposure.

Transportation: the long distance feeling

- In 1883, John Wright and Arthur Vanderpool installed an experimental railway connecting Toronto's Bathurst Street and Strachan Avenue, using overhead wires with a connecting trolley pole, which they invented. The system proved successful and was the first practical electrical railway in history.
- The world's first hydrofoil boat was invented and successfully tested in Toronto by Casey Baldwin in 1911. Hydrofoil vessels based on Baldwin's designs are used around the world today.
- The first successful locomotive braking system was patented in 1868 by A.W. Robinson, superintendent of the Great Western Railway shop in Hamilton, Ontario. This device gave railways a positive braking arrangement superior to the old hand-braking methods then in existence.

Resources: the big wheel

- In 1857, James Williams opened the first commercially successful oil well in North America at Oil Springs, Ontario.
- The first time hydro-electrical power was used to drive the wheels of a factory was in 1888 in Georgetown, Ontario, when John Barber conceived the idea of augmenting his water-driven paper mills with electric power.

- The process of manufacturing paper from wood pulp was discovered by two Canadians – one from St. John, New Brunswick, and the other from Napanee, Ontario, both around 1850.
- Leigh Instruments of Carleton Place, Ontario, produced and sold the first crash position indicator in 1962, the first mechanical strain recorder in 1975 and the first ice detection system in 1976.

Medicine: a human resource

- Insulin was discovered in 1921 by Sir Frederick Banting and Dr. Charles Best in Toronto.
- Dr. Alan Brown and Dr. Theodore Drake developed the first pre-cooked cereal or pablum in 1932 at Sick Children's Hospital, Toronto.
- Dr. Donald Green was the co-inventor of the Cobalt "Bomb" (1950-59) used in the treatment of cancer. Radioactive cobalt for its operation was produced at Chalk River, Ontario.
- While working at the University of Toronto, Dr. Ely Berton and Dr. James Hiller constructed the first practical model of an electron microscope.

Last but not least

- Henry Woodward and Matthew Evans of Toronto were granted a Canadian patent in 1874 for an electric light. (Edison's first patent did not follow until 1879.)
- Sir Sandford Fleming developed the idea of standard time zones in 1878, first described at a meeting in Toronto in 1884.
- Although the first game of basketball was played in Massachusetts in 1892, it was invented by a Canadian, Dr. James Naismith, born in Almonte, Ontario.
- The city of Hamilton deserves a special mention because of its list of firsts – the first sewing machines, the first sulphur matches were made in that city which also installed the first telephone exchange in Canada, in 1878.
- Thomas Ahern of Ottawa was a busy man in the late 1800s. To his credit goes the first electrical cooking oven in 1892. He served a banquet of electrically cooked food at the Windsor Hotel in Ottawa for the first time. He also invented an electric sweeper to remove snow from railway tracks and the first electric heating system in the world, making year-round street car service possible.

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Electric railways were well established in Toronto by the time this photograph was taken; it was back in 1883 that the first practical electric railway came into use.