

STREETCAR PIONEER

George Ephraim Patterson (1838-1927)

Under the headline "*Builder of First Electric Car Dies*", the *New York Times* of June 13, 1927 published a report received overnight from the *St. Catharines Standard*.

George E. Patterson, 88, builder of the world's first electric street car, died today in Pasadena, California ... He established a carriage building business here in 1874 and later constructed horse cars, one of which was converted into an electric car and operated between St. Catharines and Thorold in 1887. Thirty years ago, he went to Philadelphia, where he was engaged in the manufacture of electrical equipment until his retirement five years ago.

Four days later the *Perth Courier* also announced the death of,

... of Mr. George E. Patterson, a native of Perth, son of the late Charles Patterson, and nephew of the late bailiff James Patterson¹. He was the builder of the first electric street car operated in the world.²

The following day the *New York Times* further reported that,

The body of George Patterson, builder of the first trolley car operated in America forty years ago, will be borne to Victoria Lawn Cemetery [St. Catharines] in an electric funeral car on Sunday, after it arrives from Pasadena, where he died.

Although the streets of St. Catharines were lashed with wind and rain on Sunday June 19, 1927, the citizens of St. Catharines,

... turned out in large numbers to pay their final respects to George E. Patterson, who has made his name famous as builder of the first electric street car in America. The casket arrived from Pasadena, California early in the morning, and was taken to McIntyre's undertaking rooms where ... many viewed for the last time the well-known features. The casket was then carried out to the waiting funeral car of the Canadian National Electric Railways and placed in position, while the St. Catharines Concert Band solemnly played the Dead March in Saul.

¹ James Patterson (1819-1902) s/o George Patterson (1782-1862).

² *Perth Courier*, June 17, 1927.



**G. E. Patterson gravestone
at Victoria Lawn Cemetery,
St. Catharines, Ontario**

Headed by the Concert Band, the procession moved off up St. Paul Street, to slow time. The funeral car was driven by the oldest motorman in the service of the N.S. and T. [Niagara, St. Catharines & Toronto Railway], Mr. Neil O'Mara, who was a contemporary with Mr. Patterson, when he put into operation the first street car in this district. Mr. O'Mara is still a motorman, one of the most dependable in the company's service and has been continuously at work since the early eighties of the last century. He is employed now at the N.S. and T. in special service trips. He was placed in charge of the funeral car yesterday in tribute to the inventor and as an honor due his long service with the company.

Born on September 16, 1838, George Ephraim Patterson³ was the son of Charles Patterson (1814-1894) who had been born at Quebec City while his own father, George (1782-1862), was serving in the ranks of the British Army.

Granted land at the Perth Military Settlement, Private George Patterson, of the 37th Regiment of Foot, born in Perthshire, Scotland, his wife, Ann Marigold (1791-1867), born near Glasgow, Scotland, and two young sons (Charles and his brother Walter), settled at Bathurst Township C-5/L-14(NE) in the summer of 1816. The family later moved into the Town of Perth where soldier-settler George worked as a shoemaker and became the father of a total of seven children⁴. Their eldest son, Charles, followed his father into the shoemaking trade at Perth where he married Jane Lockhead/Lougheed (1815-1903) and raised a family of eight children⁵. The eldest of those was street car pioneer George Ephraim Patterson.

George Ephraim grew up and attended school at Perth until 1856 when, at the age of 18 years, he began an apprenticeship at the George Smith Carriage Works, at St. Catharines, Ontario⁶. In 1861, at the time of the Trent Affair⁷, while still serving his apprenticeship, he enlisted in the local artillery regiment of the Canadian Militia and, in 1866, during the Fenian raids, served with his unit at Fort Erie⁸.

³ George Ephraim Patterson (1838-1927) should not be confused with his first cousin, Ephraim George Patterson (1846-1925), born at Perth to James Patterson (1819-1902) and Bresaya Jane Pounder (1824-1899), Lieutenant of the Queen's Own Rifles (wounded at Ridgeway, 1866), Mathematical Master at Hamilton Collegiate Institute, Lawyer, Manitoba Attorney General and Referee and Master of the Court of King's Bench.

⁴ Charles (1814-1894), Janet (1817-1901), John (b.1819), James (1819-1902), George Edwin (1821-1894), Elizabeth Ann (1825-1884), Ephraim (1812-1897).

⁵ George Ephraim (1838-1927), William (1840-1908), Eliza (1842-1931), Albert (1845-1931), Richard (1847-1924), Martha (1849-1922), Charles (1852-1938), Robert (1855-1895).

⁶ King Street (opposite the Court House), St. Catharines.

⁷ Early in the American Civil War, on November 7, 1861, the USS *Jacinto* boarded the British flagged RMS *Trent* and took prisoner passengers James Murray Mason and John Slidell, diplomats representing the Confederate States. As a non-belligerent, the British protested this violation of their neutral rights, demanded an apology and release of the prisoners, while taking steps to strengthen its military forces in Canada, including a Militia call-up. For a few weeks it looked very much like the U.S. and Britain would go to war, but eventually President Abraham Lincoln agreed to release the Southern diplomats and, although no apology was ever made, to 'disavow' the actions of the U.S. Navy in boarding the *Trent*.

⁸ With the dream of capturing Canada and holding it ransom for the freedom of Ireland, the Irish Republican 'Fenian Brotherhood' made a series of armed raids into Canada between 1866 and 1871. An incursion on June 2, 1866 led to the Fenian defeat at the Battle of Ridgeway, a short distance west of Fort Erie.

In February 1863 George married Ellie Anne Harris (1844-1911) at St Catharines. They became the parents of 10 children⁹.

The 1871 Canada Census records George Patterson's occupation as 'carriage maker' but does not indicate whether he was still an employee or, by then, operating his own shop. Three years later, however, in 1874, he created a partnership with William V. Corbin (1839-1900) under name 'Patterson & Corbin Carriagemakers'.

In November 1879, when the horse-drawn St. Catharines Street Railway opened, Patterson and Corbin built the service's 'Car # 1'. As the railway developed over the next few years, providing service from Port Dalhousie on the Lake Ontario shore through St. Catharines and Merritton to Thorold¹⁰, Patterson and Corbin continued to build rolling stock for the company.



Patterson & Corbin's horse-drawn 'Car # 1', St. Catharine 1879

In the same year the Street Railway was established, George Patterson was elected to the St. Catharines City Council where he held a seat until 1888. He was also a member of the local school board for more than 15 years, a Mason, a member of the Order of Oddfellows, the Ancient Order of United Workmen¹¹, the Canadian Order of Home Circles¹² and the Royal Arcanum¹³.

In 1887 Patterson & Corbin built,

... the bodies for the first experimental Van Depoele system¹⁴ electric cars in St. Catharines, a city in which some of the earliest electric railway developments in Canada took place.¹⁵

An upright motor was installed on the front platform of an ordinary horse car, the wheels of which were operated with a chain. Two overhead wires with four wheels travelling upon them conveyed electrical energy to the motor.¹⁶

⁹ Alfred (b.1864), Edward (b.1866), Maud (b.1872), Mary (b.1874), William (b.1875), Theresa (b.1878), Mildred (b.1879), Clara (b.1883), Henry (b.1885), Frederick (b.1889).

¹⁰ There were turntables at each end.

¹¹ A fraternal organization providing mutual aid through life, sickness and disability insurance.

¹² Ibid.

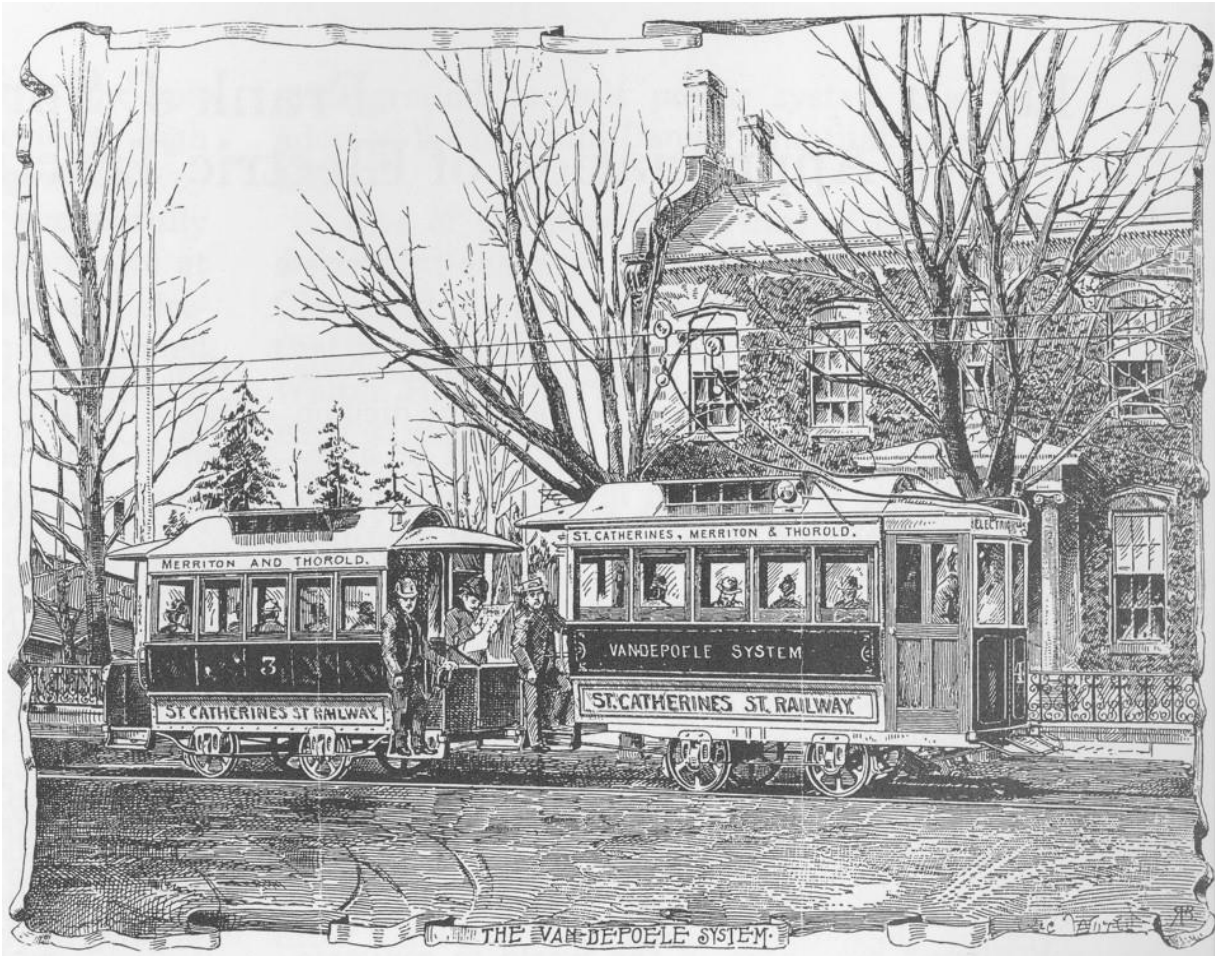
¹³ A fraternal organization providing life insurance.

¹⁴ Invented by Charles (Carolus Josephus) Van Depoele (1846-1892).

¹⁵ *Railway Rolling Stock Industry in Canada*, by Andrew Merrilees (1963).

¹⁶ *Perth Courier* 17 June 1927.

Power for the system was produced by a hydro-electric generator at Merritton which took advantage of water flow over the Niagara escarpment.



The first electric powered streetcar built by Patterson & Corbin for the St. Catharines, Merriton & Thorold Street Railway in 1887. The car on the right is powered by the Van Depoele system and is towing an unpowered former horsecar.¹⁷

Contrary to later claims by the *New York Times*, the *St. Catharines Standard*, the *Perth Courier* and other media, the car completed at the Patterson & Corbin shops in October 1887, was not “the world’s first electric street car”. The Patterson & Corbin car, and the electrified St. Catharines Railway, were preceded by a several years by a number of different electric tram line designs in Europe¹⁸, the United States¹⁹ and Canada²⁰. However, the car George Patterson designed and built was among the first truly dependable and successful electric street cars, and Patterson and Corbin were the first, and for several years the only, builders of electric street cars in Canada.

¹⁷ Illustration from *The Electrical World*, Vol. XI, January 7, 1888.

¹⁸ St. Petersburg, Russia (1880), Berlin, Germany (1881), Brighton, England (1883), Vienna, Austria (1883).

¹⁹ Newark, New Jersey (1883), New Orleans, Louisiana (1884), Montgomery, Alabama (1886) and Scranton, Pennsylvania (1886).

²⁰ Windsor, Ontario (1886).

In 1890 they abandoned carriage making altogether and started building streetcars exclusively. The following year the City of St. Catharines loaned Patterson & Corbin \$9,000 to establish a purpose-built streetcar factory²¹. Initially the factory had 20 workers, but within a year or two it employed 70. The firm rapidly improved upon their design and adapted new technology as it emerged. Beginning in 1887 with the Van Depoele system (using two overhead wires, a two-wheeled 'troller' with weights underneath, and two flexible cables running down to a motor), from 1893 they applied the Thomson-Houston²² system (which also used two wires), and then from 1896 the Sprague²³ system of electrification (which uses one overhead wire, the rails for ground and a trolley pole).

Their St. Catharines shops were soon the premier streetcar builders in North America. In 1893 they built electric cars for the 'Niagara Falls Park & River Railway' (later the 'International Railway Company'), when it opened a line along the Canadian side of the gorge connecting Chippewa to Niagara Falls and Queenston²⁴. They delivered 10 28-foot open cars, 10 28-foot closed cars, 3 18-foot closed cars and 12 18-foot open trailers. The motor cars were powered by 25 horsepower motors built by Canadian General Electric at Peterborough.



Patterson & Corbin electric car used on Niagara Falls Park & River Railway²⁵

Patterson and Corbin delivered 10 trams to the 'Ottawa Electric Railway Company'²⁶ in 1891. Some of those cars were equipped with plows and rotating brushes to clear the track in winter and, in 1893, three cars had heaters added, becoming the first heated tramcars on the continent. In late 1892 the trade journal, *Electric World*, reported that,

²¹ Located at #6 Queenston Street, on the south side, between Geneva and Calvin Streets.

²² Invented by a company founded by Elihu Thomson (1853-1937) and Edwin Houston (1847-1914), a precursor to the General Electric Company.

²³ Invented by Frank J. Sprague (1857-1934).

²⁴ That line was extended to Niagara Falls, New York in 1897.

²⁵ Photo by Edwin Hamilton Hodge (1888-1961), courtesy of the Niagara Falls Public Library.

²⁶ Operational 1891-1959.

Patterson & Corbin, street car builders, are pushed with work, manufacturing horse and electric cars for Yarmouth, N.S., Winnipeg, Manitoba, Sarnia and Toronto Junction, Ontario.²⁷

FINE ELECTRIC STREET CARS Our
Specialty



We also manufacture HORSE and TRAIL CARS
of every description.

PATTERSON & CORBIN,
St. Catharines, Ont.

Patterson & Corbin advertisement 1895

Electric street cars built by Patterson & Corbin were also delivered to urban transport companies in London, Toronto, Peterborough, Port Arthur²⁸ and Kingston, Ontario, and as far away as Vancouver and Victoria, British Columbia. When the 'Hamilton Radial Electric Railway' began operations 1896, it was equipped with the largest cars ever manufactured by Patterson & Corbin.

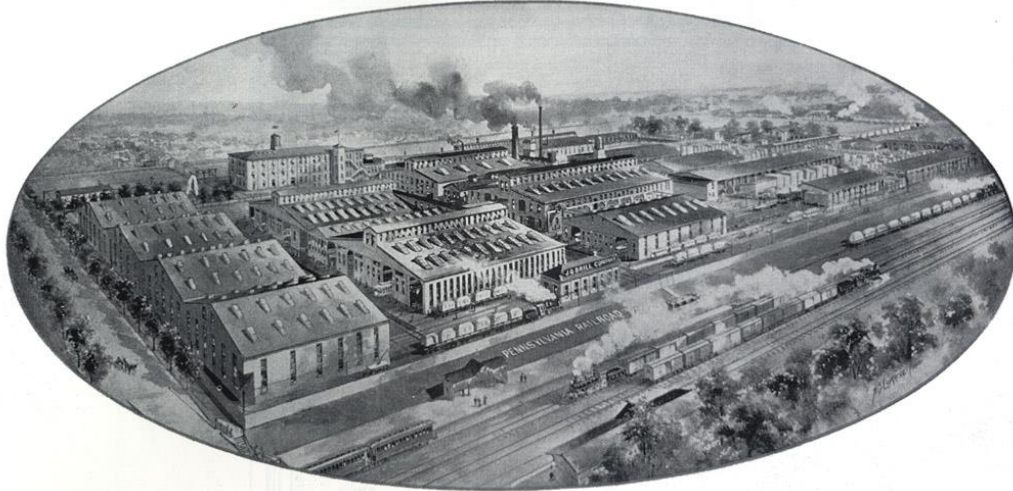
The passenger cars will be something big, from the shops of Patterson & Corbin, St. Catharines. Each car is 51 feet long, double trucked, fitted with Westinghouse air brakes, and has a seating capacity of 60. The seats are placed on each side of an aisle, as in a railway coach, and are of rattan. There are smoking compartments in them. The cars are finished in cherry, and cost nearly \$4,000 each. There are four here ready for use. A combination car, with a baggage department in front and a trailer will be run together in each trip. Each car is equipped with two 50 horse-power motors.²⁹

²⁷ *Electric World*, December 31, 1892.

²⁸ Thunder Bay, Ontario.

²⁹ *Hamilton Spectator*, September 1, 1896.

Patterson & Corbin were “one of the earliest and most prolific of the electric street car builders in Canada ... during their period in the field, ranging over 10 years from 1887 to 1897”³⁰, but increased competition in both Canada the United States, including the luring away of skilled workmen by companies like the ‘Ottawa Car Co’³¹ and the ‘Canadian General Electric Company’³², forced them out of business in 1897.



J. G. Brill works, Philadelphia, PA, c1895

George E. Patterson followed some of his former employees to the United States. He worked briefly for a streetcar company in New York and then, from about 1900, for the ‘J. G. Brill Company’ of Philadelphia, Pennsylvania. Founded 1869 to build horse-drawn cars, by the early 20th century J. G. Brill was a huge enterprise manufacturing streetcars, inter-urban coaches and buses. The company bought out four other American companies in 1899, and another in 1907, and in 1917 went into partnership with the ‘Springfield Aircraft Company’ building aircraft and with the ‘Ford Motor Company’ building ambulances for WWI.

Patterson’s wife, Ellie Anne, died in 1911. In about 1915 he married Mary Isabelle Carnochan (1848-1922).

According to his *New York Times* obituary, Patterson was “engaged in the manufacture of electrical equipment”³³ at Philadelphia, but more specifically he was a foreman at the J.G. Brill auto plant when he retired in 1921, at the age of 83 years. He moved to Pasadena, California, to live with his son, Alfred, but “in retirement he visited Perth for several weeks”³⁴. He died, aged 88 years, on June 13, 1927, at Pasadena, but his body was returned to Canada for burial at Victoria Lawn Cemetery, St. Catharines, Lincoln County, Ontario.

- Ron W. Shaw (2017)

³⁰ *Railway Rolling Stock Industry in Canada*, Andrew Merrilees (1963).

³¹ Founded in 1891 as an outgrowth of the William W. Wylie Carriage Works, the Ottawa Car Company was a subsidiary of the Ottawa Electric Railway Company and, under a series of ownerships, operated until 1948.

³² In 1894 George Ephraim Patterson’s son, Edward George Patterson (b.1866), went to work with General Electric at Peterborough as Works Accountant and in 1903 was appointed G. E. General Superintendent. Under its former name ‘Edison Electric’ the firm had been manufacturing streetcars since 1892.

³³ *New York Times*, June 13, 1927.

³⁴ *Perth Courier* 17 June 1927.