

Hallidie's cable-car

by Bernard Mayes

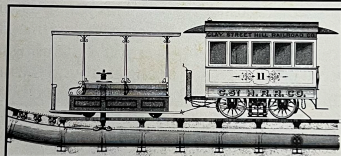
The world's first cable-car system, forerunner of those for which San Francisco is famed today, was the brainchild of a London-born inventor who emigrated to California in 1853. The invention not only revolutionized the city's transport system but was in no small part responsible for its subsequent growth.



In the early hours of August 1, 1873, while sea mist still clung to the wooden rooftops of old San Francisco and the overnight millionaires of the gold rush were sound asleep, a small party of men watched spellbound while a rough wooden trolley, apparently equipped with no more than a couple of benches and an awning, seemed to float up one of the steepest streets in the world and then float slowly down again. There was no horse to be seen or puffs of steam. Clearly another miracle of the new age was dawning.

The inventor was a Londoner, known by that time as Andrew Hallidie. He had been born Andrew Smith in 1834, three years before the death of King William, at 69 Princes Street near Leicester Square. His father, Andrew Smith Senior, was an imaginative and successful blacksmith from Scotland with a variety of patents to his credit for rope made not of hemp but of wires, and who preferred the title "engineer" as being more appropriate to the times.

By the time young Andrew was 18, London was excited by the voyages of HMS Beagle, and by the thought of the riches waiting "just for the asking" in far away San Francisco. As soon as the Great Exhibition closed father and son said farewell to their family and boarded the Liverpool coach. They took a modern steamship bound for New York. From there they squeezed themselves on to another, crowded with would-be gold miners from all over the world. They reached Panama in March and rammed into the slot. It was powerful enough to rip the grip from



Hallidie's Clay Street Hill Railroad, the world's first cable-car system, began operations on August 1, 1873. Top, the cable car at its terminus, and above, as depicted in Hallidie's prospectus. The grip car, which pulled the passenger car, was attached to a cable running in a small tunnel beneath the tracks by a device known as the Hallidie grip.

and sailed through the jaws of San Francisco's Golden Gate in May, 1853. San Francisco was not at all what they had expected. It was tiny, dirty and exceedingly expensive. Even necessities cost a week's diggings, and the mining camps, contrary to the New York sales talk, were more than 100 miles away. There were other disappointments, too. They had left behind a capital city whose latest display of wares had been a triumph of Victorian sophistication in an age when Strauss, Browning, John Stuart Mill and Dr Arnold were household names. On the Far Western frontier these were names without meaning. The much vaunted City of Gold was in fact no more than a small collection of wooden shacks inhabited by a transient population of

without visible means of control, the grip-man lost his nerve and refused to

rich drunks and wild women. Smith Senior caught the next boat back to England. His son stayed behind and made his fortune.

The boy drifted among the mining camps in the hills. The best luck he had was finding a stream which produced 1 ounce of gold dust a day—for two or three days. He managed to survive for two years digging, helping and begging. It was while he was watching his exhausted mates lugging baskets and buckets of ore down one side of a ravine and up the other that he remembered his father's rope. He mentioned it to the mill owner who ordered 200 feet of it, which young Smith spliced into a loop and hoisted across the ravine on pulleys. He hung the buckets from the rope on hooks and by hauled by 57,000 feet of cable are still in service and are ridden by 13 million

this new method the work of transporting the ore could be done in half the time. By the end of the month every ravine in the hills had its Andrew Smith Haulage System. The amount of ore processed doubled inside a week. The flow of gold bubbled into the new San Francisco banks turned from a trickle into a steady stream. Fortunes were made in hours instead of days.

Immediately after the Civil War Smith married and, in a fit of grandeur, renamed himself Andrew S. Halliday in honour, he wrote, of an uncle, a Scots GP who had served under the Duke of Clarence at Waterloo, cared for George III and was knighted by George IV. Local officials spelled names as they pronounced them, so it was Andrew S. Hallidie who became an American citizen the following year.

The Andrew Hallidie Company, manufacturers and suppliers of wire rope, was housed on the San Francisco wharf. The great harbour was crowded with sailing ships from New York, London, Newcastle and Bristol. Many of them had rotted at their moorings because their crews had left for the mines. Behind the town lay a dozen rocky hills, some with unnerving gradients steeper than one in three. Only the occasional mill-owner could afford to build there. The town seemed destined to remain little more than a harbour.

Hallidie studied the problem and came up with two inventions: a wire rope which would bend round itself without breaking; and a device was ready to fly; and Albert Einstein was 21 ●