

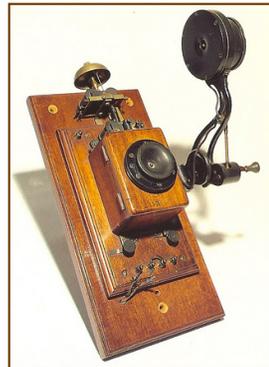
# History of Hearing Aids Mid 1800's thru 1930's

By Sue Sherman

Devices for the hearing-impaired have a long history. Until the late 19th century, hearing aids were acoustic and offered only modest amplification. They were cartoonish ear trumpets: tubular or funnel-shaped devices supported in one hand that collected sound waves and funneled them to the ear. The development of electrical technologies, however, opened new possibilities for amplification.



**1876** Alexander Graham Bell Patented the first electrical device that could transmit speech. Since the receiver was held up to the ear, some hearing-impaired people found it easier to listen to a conversation on Bell's telephone than listening to some one in person.



**1878** Thomas Edison, who was hard of hearing, did not find the telephone helpful. He later recalled that his inability to hear sounds from the receiver spurred his interest in improving it. This led to his 1878 invention of the carbon transmitter for the phone, which unlike Bell's device, amplified the electrical signal. Some people tried to adapt telephones as hearing aids in the early 20th century, but the results were obtrusive, heavy, and only amplified speech by 15 decibels. The volume of a normal conversation averages about 60 dB, so the early aids were of limited usefulness.

**1906**, Lee de Forest invented the Audion, the first triode vacuum tube and the first electrical device which could amplify a weak electrical signal and make it stronger. The Audion, and vacuum tubes developed from it, founded the field of electronics and dominated it for forty years. These were used in the first carbon hearing aids. They offered 70 dB of amplification and a more even frequency response. It wasn't light, weighing 100 kilograms and was as big as a filing cabinet.



**1924**, The Western Electric 34A carbon hearing aid was manufactured by the Western Electric Company in 1925. Western Electric marketed these early hearing aids under the "Audiphone" trade name. It was one of the few 1-piece carbon hearing aids of the time. The unit measured 7¾" by 4" by 1½" (19.8 x 10 x 3.5 cm) and weighed 2 lbs. (924 g) when fitted with batteries.



**1938**, Aurex Corp., an electronics manufacturer in Chicago, developed the first wearable hearing aid. A thin wire was connected to a small earpiece and then to an amplifier-receiver that clipped to the wearer's clothes. The receiver was wired to a battery pack, which strapped to the leg. Subminiature vacuum tubes developed in 1937 by Norman Krim, an engineer at Raytheon, allowed for amplifiers that were not only smaller but also required less power. Marketed to hearing-aid manufacturers, these amplifiers quickly gained a fair share of the market, but they still relied on a separate, strap-on battery pack. Next newsletter history 1940-1980's.