

1878 - 93 - North American Telephones: Butterstamp and Wall Telephones:

Alexander Graham Bell's first telephone, the Liquid Transmitter telephone, looked and acted much like an antique microphone. In order to speak to others, one needed to bellow into the funnel like tube, whereby the vibration would electrically travel to its connecting counterpart. The two telephones would only work if physically connected to each other via wire and although the receiving telephone could hear the sounds and words, speech clarity was an issue (Fischer, 1992).

Following the invention of Bell's first primitive bi-directional diaphragm telephone, Bell continued to experiment with its design in an effort to improve its overall sound quality. Working with electro-magnets, then single magnetized bar magnets and fine wire coils, Bell managed to make rapid improvements to his telephone. Initially this new invention was criticized as people "weren't quite sure how to use this newfangled device" (<http://www.greatachievements.org/?id=3629>), but with Bell's public demonstrations, fascination and interest grew. Initially telephones were sold or leased in pairs, due to the fact they were meant to be linked. Bell's first customer was a Boston banker, who leased them to use between his home and office. Building on his success, Bell and his two partners formed the Bell Telephone Company. On January 28, 1878, with more than 3,000 telephones installed, New Haven, Connecticut began operating the first commercial switchboard servicing 21 telephones and eight party lines. With ever increasing interest, soon it became 50 subscribers and the world's first telephone directory (Fischer, 1992). Interest wasn't just in the New England area either. Despite infringing on Bell's patent, Western Union set up a telephone service in San Francisco using their telegraph lines.

With the public being thirsty for the convenience of conversation without the necessity of close physical proximity or the detachment of a telegraph, consumers drove the inspiration for inventors to research and enhance the existing but new telephones to better end products (Fischer, 1992). With each technological advancement, telephones changed in shape, quality of sound production or reception. In 1878, the 'Butterstamp' wall telephone was introduced. Although clumsy to use as you talked into 1 end then turned the handle to listen on the other end, it allowed the users to converse with others at greater distances than before, without the need to shout each word, speak

in staccato, and be able to better understand each other. Telephones were fulfilling the social and business needs of the public. Subscriptions grew slow but steady. Almost 11,000 Bell phones were installed by the summer of 1878 and prompted the National Bell Company to be incorporated on March 13, 1879. By late 1879, the first two and three digit telephone numbers were being used (<http://www.privateline.com/TelephoneHistory/History1.htm>). Because the Butterstamp telephone was confusing for customers (the same device for both talking and listening), a second transmitter-receiver was added allowing either handle to work for both functions. This was called a 'wall set'.

With Bell managing 133,000 telephones by 1880, social implications started to become considered. No longer were telephones solely used for business or emergencies the way the telegraph was. It was now also being incorporated into households of the wealthy. With Bell's patents expiring and competition on the rise, advancements in telephone technology and quality were coming quickly. The wall phone design had changed to a three box design, the first public payphone came into use in 1889 and the first automatic dialing system was patented in 1891 by Almon B. Strowger (<http://www.privateline.com/TelephoneHistory2A/Telehistory2A.htm>).