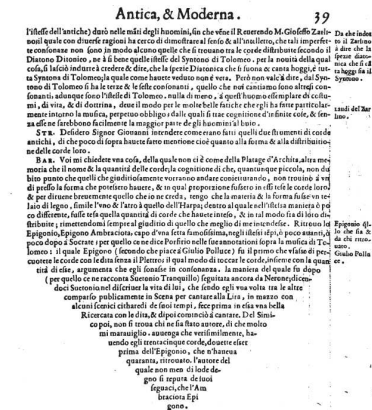


Mark Schubin's Brief Illustrated Chronology of Media Technology & Opera

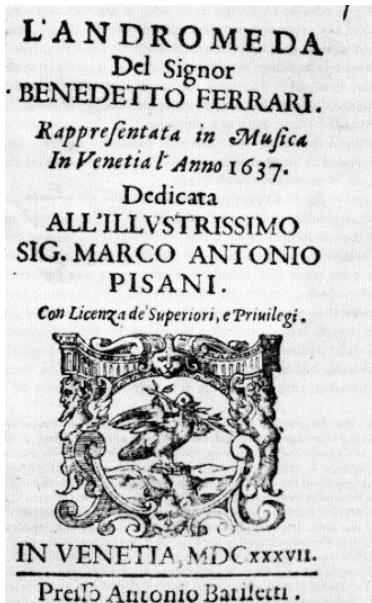
Library of Congress, Mary Pickford Theater, 2011 October 6



1581: Vincenzo Galilei's (Galileo's father's) book establishes principles of acoustics & opera



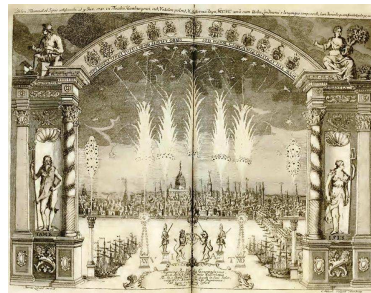
1619: After reading Galilei, Johannes Kepler publishes 3rd law of orbital motion, used by modern satellites



1637: 1st opera ticket sold in Venice; opera houses begin to use acoustic ducts



1673: Athanasius Kircher proposes ducting music outside the opera house



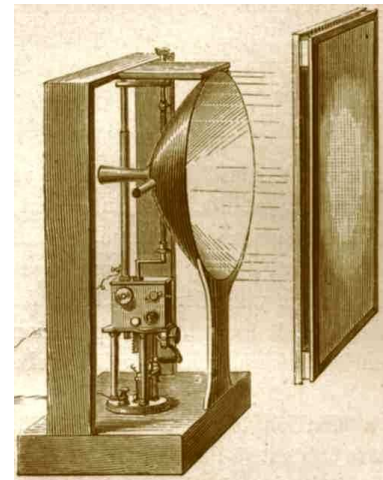
By 1726: Thomas Lediard uses moving-image projection at Hamburg opera



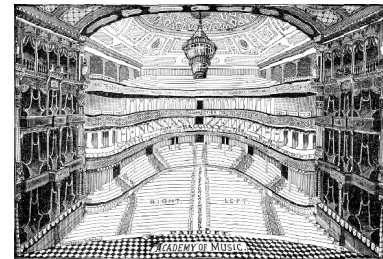
1823: Voigtländer sells binocular opera glasses



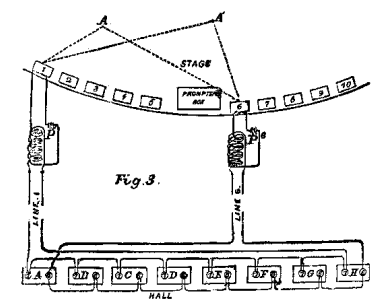
1849: Antonio Meucci begins electronic sound-transmission experiments at Havana's Gran Teatro Tacón opera house



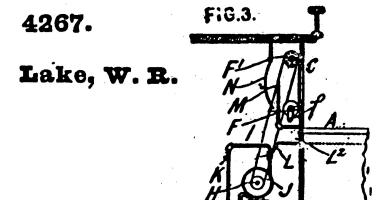
1849: Jules Duboscq projects an electric-light sunrise effect at Paris Opéra



By 1880: Edward P. Fry listens to opera at home via telephone line



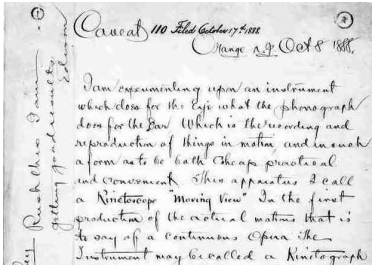
1881: Clément Ader sends stereo from Paris Opéra



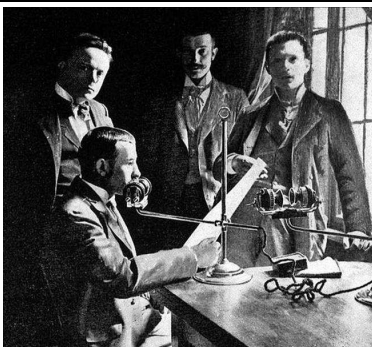
1881: British patent for gas-jet-illuminated libretto display in opera house



1885: Based on 1884 telephone transmission (above), opera pay-cable service opens in Lisbon



1888: Edison's motion-picture patent caveat says it is for opera



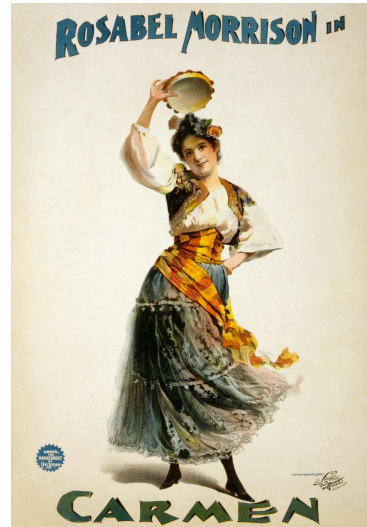
1893: To increase utilization of opera-by-phone lines, Tivadar Puskás creates the electronic newscast



c. 1894: Edison-assistant William Dickson plays opera music in the first synchronized-sound movie



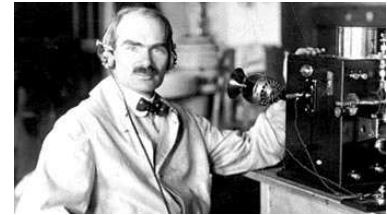
1895: Electrophone offers opera via headphones (used in Lisbon at least since 1888)



1896: Bullfight film used as a backdrop in this touring production provides many Americans with their first movie experience



1900: Horace Short broadcast of opera recordings via compressed-air amplifier from the top of the Eiffel Tower



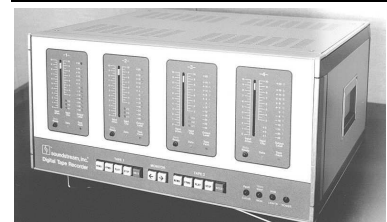
1907: De Forest radio transmission of opera singer leads to U.S. Navy use



1928: Washington Post reports opera singers on TV



1952: *Carmen* transmitted live to cinemas in 27 cities



1976: 1st commercial digital audio recording is opera



2009: International, digital, high-definition, satellite, multi-language-subtitled, surround-sound, live cinema