

Sunlight

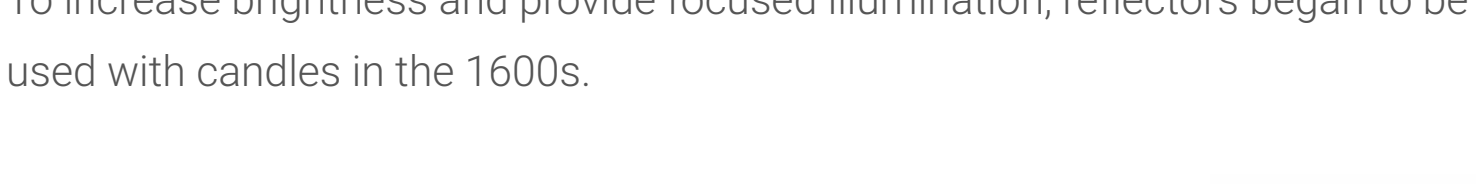
The early Greeks are credited with inventing theater and they used the natural sunlight as their source of illumination. They would build their performance spaces so that the afternoon sun would illuminate the stage and remain behind the audience. This was around 450 BC! Later, the Romans improved upon this concept by adding an awning over the audience to reduce glare from the large light source. For thousands of years, the sun was the primary source of entertainment lighting.



Theater of Dionysius, Athens, Greece. Brooklyn Museum Archives, Goodyear Archival Collection.

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on light was required. Candles were commonly placed on large chandeliers hanging over the audience, as well as in sconces on the walls. In some cases, chandeliers would also be placed above the stage and candles were also placed on the floor (footlights) and on the sides of the stage on ladders. The dripping wax, smoke, and continual re-lighting and trimming of candles was troublesome but tolerated.



specialized theatrical effects, colored glass was used. Historians note that the Haymarket Theatre in London used levers to raise and lower tinted glass in front of the oil lamps, thus creating lighting changes on stage.

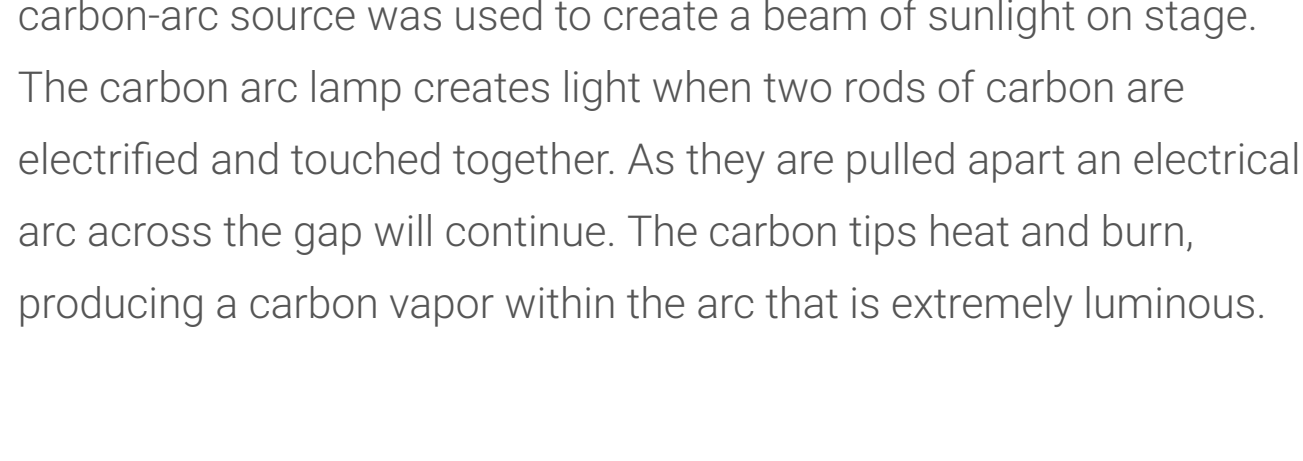
Further improvements to oil lamp technology came via the use of new lamp designs and new



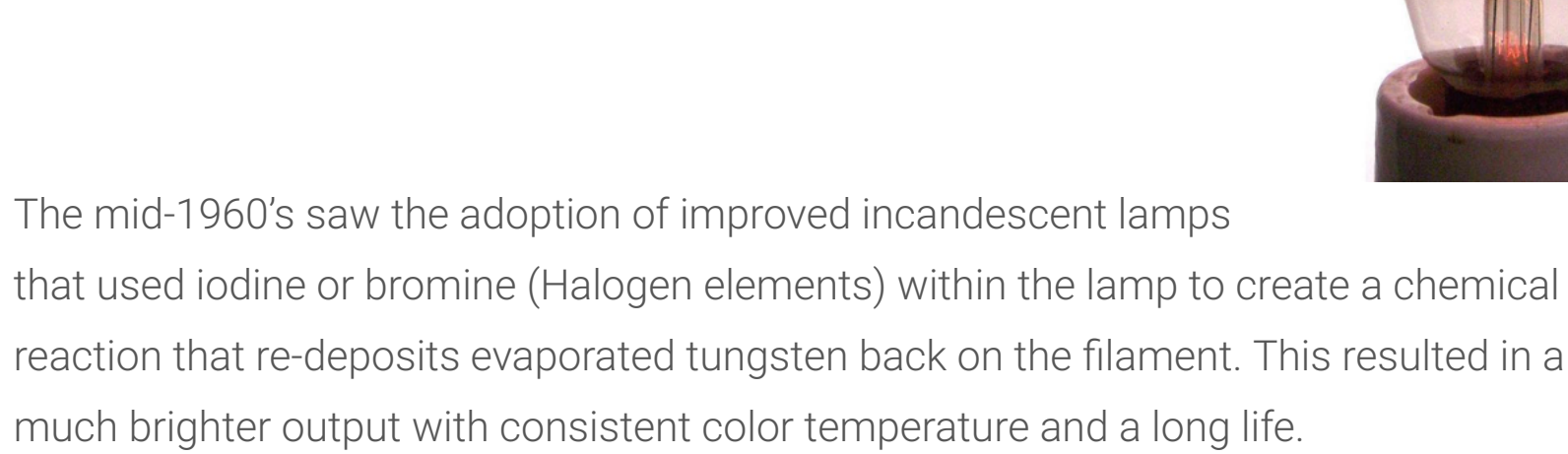
burners placed on and over the stage. The output was significantly brighter than oil lamps and allowed for a new level of control. By adjusting the amount of gas to each burner, the illumination levels and areas could be adjusted. For the first time, the audience lighting could be dimmed while the stage remained illuminated.



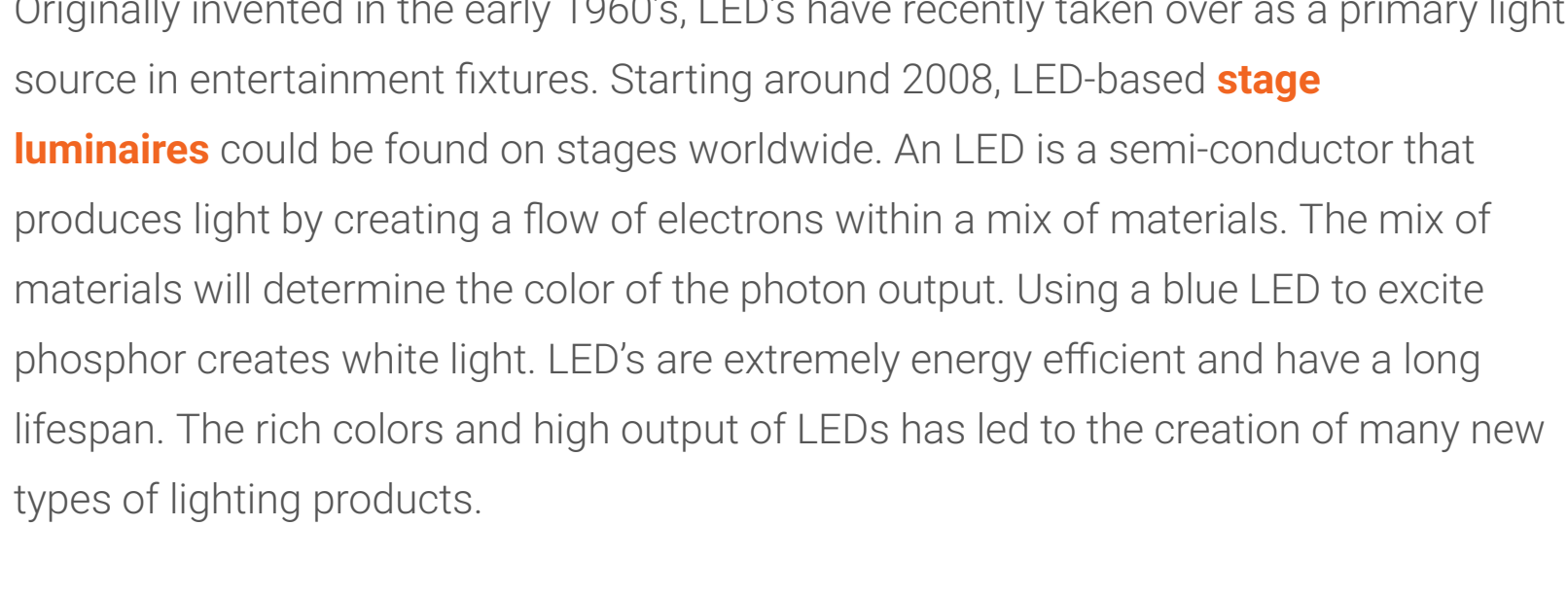
Heard become incandescent and emit a bright white light. This small and intense area of light was often placed in front of a reflector to provide control of the output. This quickly led to the ability to place lighting fixtures in the auditorium and allow uses such as front lights, followspots, and even movement effects such as fire and water.



Thomas Edison is credited with creating the first incandescent bulb and, by the 1880s, it was being used in theater. Over the next 40 years, gas and limelight were completely replaced by incandescent electric light. These lamps first used carbon filaments and were later replaced with metallic filaments such as tungsten.



In the 1980's as automated lighting began to enter into the entertainment scene, the use of High Intensity Discharge (HID) lamps grew rapidly. These lamps produce light by creating an electric arc between tungsten electrodes. This arc occurs in a quartz tube that is filled with a mix of gas chemicals. When heated, the chemicals evaporate and form a plasma, which in turn increases the intensity of the light produced by the arc. Most **automated luminaires** still use arc-source discharge lamps due to their output, efficiency, color temperature, and cost.



The future will surely see further innovations and new methods of light creation.

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