

Hedwig Kiesler

(1914 – 2000)

Aug. 11, 1942.

H. K. MARKEY ET AL

2,292,387

Enabler of Wi-Fi technology

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Hedwig Kiesler is far better known as the actress Hedy Lamarr, star of numerous Hollywood films in the 1940s. But Lamarr was also an inventor in her spare time, developing amongst other things, an improved traffic stoplight, and tablets to create carbonated drinks. She became friends with Howard Hughes, who regarded her as a genius, placing his team of engineers at her disposal. Inspired by birds and the shapes of fish, Lamarr presented Hughes with numerous ideas to make his planes more efficient.

During the Second World War, Lamarr learned that the radio waves used to control torpedoes could easily be jammed, forcing the torpedo off course. Having once been married to a munitions manufacturer, Lamarr had considerable knowledge of weapons guidance systems, including those for torpedoes. With her friend, composer and pianist George Antheil, she developed a device to prevent jamming, based on spread spectrum and frequency-hopping technology. The invention used multiple radio frequencies to broadcast a radio signal, switching frequencies in a random manner at split-second intervals.

Lamarr and Antheil successfully patented their device, but the significance of the work was not realised until decades later, when the US Navy used the invention during the Cuban missile crisis of 1962. The principles of Lamarr and Antheil's work are considered to be the precursor of Bluetooth technology and are similar to legacy versions of CDMA and Wi-Fi. Antheil and Lamarr were posthumously inducted into the National Inventors Hall of Fame in 2014.



Main image: Hedy Lamarr publicity photo for the film *The Heavenly Body*, 1944
Background: Hedy Kiesler Markey and George Antheil. Secret communication system, US2292387A (repr., US, and issued 1941).

