

35th Anniversary of the Invention of the Force Sensing Resistor

2012 marks the 35th anniversary of the invention of the Force Sensing Resistor. In 1977, after three years of intensive searching Franklin Eventoff invented the first Force Sensing Resistor.

Without an electronics or materials background, Eventoff had been building a series of electronic musical instruments. As he recalls, “In 1974, as a musician in a Gypsy rock band traveling around the country with my brothers in a school bus, I began my quest. I was carving an electronic musical toy out of walnut for my daughter, Rain. (This was later licensed to Mattel® Toys in 1978 as The Magical Musical Thing®.) In those days electronic keyboards had one volume control for the entire instrument, which was not at all musical. Each key should have separate expression. I went to Yale electronics supply store in Los Angeles and asked for something I could press on that would be able to change pitch, slide-whistle-like. There was nothing.”

As Eventoff remembers, “Serge Tcherepnin, a brilliant analogue synthesizer designer, gave me a handful of resistors with an assignment that he hoped would help to explain to me Ohm’s law. I was to twist one end of these resistors together and then to pot the resistors in a resin with the tips of the other end of the resistors exposed and polished off. I was then to connect an ohmmeter to the twisted end and tin-foil to the other and gradually make contact with an increasing number of resistors.

“I thought it would take hours, if not days, to pull this off and so I tried to come up with a simpler way to understand the lesson. I had all these bits and pieces around that I had been working with for years and had a thought. I hooked up my ohmmeter to an interdigitating finger pattern on a PC board that I had salvaged from an elastomer keypad. I then made many small dashes with a soft lead pencil on a piece of paper and laid the paper over the PCB and pressed with my finger. Goose bumps covered my body and chills ran up my spine – the ah-ha moment - the FSR was invented.