

Ajith (AJ) Kumar

The Problem Solver: This Train Engineer Can't Stop Inventing A Better Locomotive

By Maggie Sieger

Asking Ajith Kumar to pick his favorite patent is a little like asking a father to choose his favorite child. But in this case, Kumar has 303 children. Press him hard enough, though, and he'll admit to liking one best: technology that powers each wheel on a locomotive separately.

Kumar calls the technology "quite simple" but in reality, it has revolutionized the freight industry. Old direct current locomotives sent the same amount of voltage to each wheel, but that meant when rails were slippery or when the wheel diameters were different, all of the other wheels had to reduce power. Kumar's AC technology makes it possible to send more power to wheels that need it at any given time, helping new locomotives run faster and stay on the tracks.

It's the technology, not the achievement, that really excites Kumar, a consulting engineer with GE Transportation Systems who holds more patents than any other GE employee. "I've worked on every new product transportation has come up with from the conceptual stage to prototype and first production," says Kumar, 65. "I really enjoy solving problems in a slightly different way."

Kumar has seen enormous changes in technology over the past 40 years. The son of a math professor and a school superintendent, he was always interested in electricity on the grandest of scales, from large motors and transformers to transmission lines. He received a degree in electrical engineering from (need info), but when he arrived at Stanford University as a graduate student in 1976, he started learning about the smaller world of engineering. "It was all micro-electronics and micro-processors, totally different," he laughs.

Kumar melded the two worlds by becoming an expert in controlling huge machines with tiny circuits. His focused-on transportation equipment including locomotives, mining vehicles, subway cars and drilling equipment.

After graduating from Stanford, he considered going back to India, but decided to take a chance and try for a job at GE. "I wrote a letter telling them I'm interested in working in high power and its control," he says. "I just asked, 'Do you have a position?' "

In response, he received a telegram from Erie, Pennsylvania, that said, "Please call me collect." He had to look Erie up on a map. "I didn't know where Pennsylvania was, but they said come for an interview so I went," Kumar says. There was a telegram with a job offer waiting for him when he arrived back at his hotel.

Kumar still lives in Erie, where he works on developing new products. He married his wife, Meera, in 1982, and has two daughters and two grandchildren. When he's not working, Kumar loves to travel and spend time with his family and friends. He's still collecting patents. He was awarded his most recent patent just last month for a distributed power control system that manages individual locomotives in freight trains up to 2 miles long.

With his 40th work anniversary coming up, Kumar is considering retirement but not quite yet. He's still enjoying himself way too much.

"When there's no more interesting work," says Kumar, "that's when I'm going to leave."