Railway Car Coupler Encyclopedia Article

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Railway Car Coupler

Railroads have played a very important part in American history. After the Civil War, the railroad industry became one of the nation's largest employers and provided many inventors with an ongoing source of inspiration. In 1897, a young African-American railroad worker, Andrew Beard, filed a patent for an improved coupling mechanism. He had witnessed many of his co-workers become injured or maimed by the traditional " pin" system, in which a coupling pin had to be placed into eyes on the ends of each car to join the cars together. This method of coupling also caused jarring lurches and jolts when the train started and stopped. While many inventors turned their attention to this problem, Beard devised an automatic system to prevent the risk to the lives of railway workers when train cars were attached or disconnected. His first-hand experience with the system and his clear ingenuity seemed to offset a lack of formal training in either engineering or metal working, and Beard successfully introduced the Jenny Coupler. The device consisted of a large, curved head that pivoted to lock onto a swiveling head from another train car. His system was such a success that Beard received $50,000 for his invention before the end of 1897. Although some improvements were made during the next century, most modern couplers were based on the same construction and action as Beard's design.

However, by the mid 1990s, an entirely new railcar called the Flexiliner had been produced in Denmark that employed a revolutionary coupling system. Using state-of-the-art computer technology, each Flexiliner car has a rubber-rimmed front that, upon command, automatically deflates its rubber diaphragm and rolls forward slowly until it couples with the car ahead of it. Once joined in the traditional manner, the lead unit's rubber shrouding reinflates to provide an air-and-water-tight seal. Since all the air and electrical control circuits are contained within the coupler, there is no need for the ages-old ritual of connecting hoses and wires. Further, uncoupling is even faster and more efficient since Flexiliner cars can uncouple while moving. This is achieved by having the front car continue at speed while the second car applies its brakes. In 1996, these new cars and their new coupling systems made successful demonstration runs in Las Vegas, Nevada.