



Arthur Redman Wilfley (1860-1927)

1992 Inductee from Mining's Past

Arthur Wilfley was born in Maryville, Missouri, and moved to Kokomo, near Leadville, Colorado, with his family when he was 18 years old. Here the family hoped to set up a lumber mill to supply building materials for the gold rush boom towns. Wilfley took work as a mineral survey assistant, and to supplement his grade-school education, he learned assaying from a chemist and in the evenings studied books on mining engineering. In 1883, he passed an examination to qualify as a United States deputy mineral surveyor and went into partnership with his employer as an engineer.

As recoverable silver played out in 1884, Wilfley, one of the few who stayed in Kokomo, believed that advances in mining technology would eventually make extraction of silver sulfides economical. After three years of experimentation, he leased a claim, built a smelter, and began to make a profit. To improve the performance of this smelter in processing the Kokomo ores, Wilfley began working on a new type of concentrator, one that operated by separating minerals according to differences in their specific gravities rather than by application of heat. In ten years, he had perfected the Wilfley Table, a sloping riffled surface that was agitated to separate particles in a solution of pulverized ore and water. Often installed to rework tailing dumps, the table helped to raise mineral recovery 35 to 40 percent beyond previous processes and was in use around the world by the end of the century.

Wilfley developed an ore-roasting furnace, another table to recover minerals from slimes, a centrifugal pump to transfer heavy, abrasive slurries, and, combined with his son George's mechanical insight, a pump of unique design for handling corrosive solutions. This last invention, completed in 1913, was as successful as the Wilfley Table and led to the creation of A. R. Wilfley and Sons in 1919. By 1924, Wilfley had a total of 24 patents and his name is listed in Webster's Dictionary in conjunction with the mineral separating table he invented.