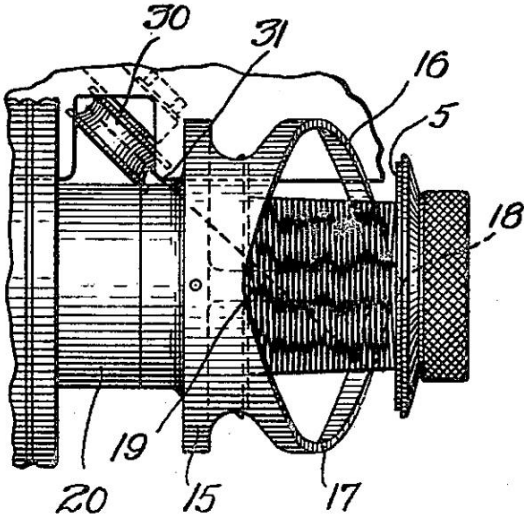


## Roots o' Reels XIV. Spiral-Cam Level Winds

Steven K. Vernon

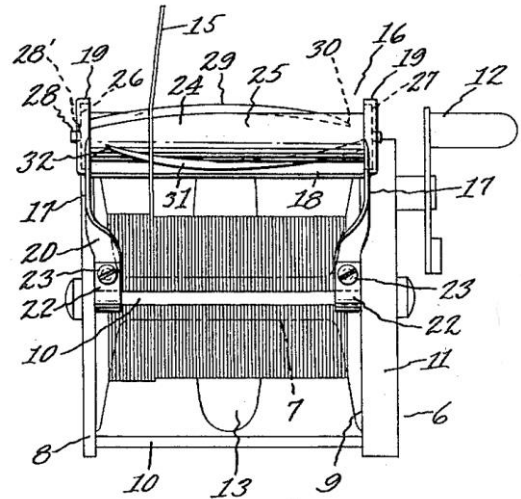
On September 19, 1922, Charles J. De Coster, of Philadelphia, Pa., patented a "winding mechanism for strands" and assigned the invention to Western Electric Co., Inc. The key feature of his design was a spiral cam around a spool. The cam guided the strand back and forth along the arbor while it was wound onto the spool. De Coster asserted:

"The advantages of a spooling device of the character described is that it is constantly rotating in the same direction, thereby avoiding the sudden starts and stops which are present in the ordinary reverse movements spooling devices. By making the cam faces smooth the cord or strand may be guided back and forth across the length of the spool in smooth even layers while traveling at a very high rate of speed and without putting any appreciable tension on the strand aside from that put upon it by the spool."



*De Coster's cam (16 and 17) guides the spooled strand back and forth. Spiral-cam designs were adopted more widely during the 1950s and later by manufacturers of synthetic fibers.*

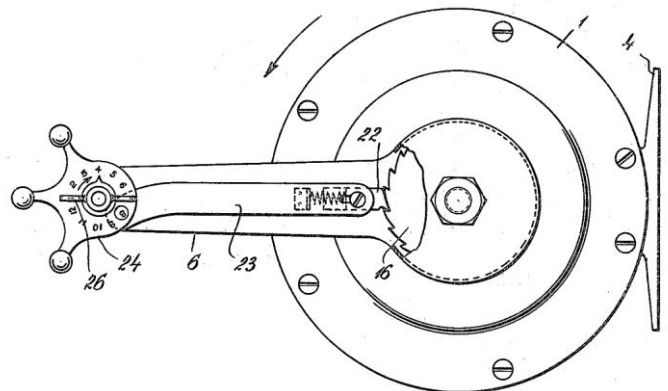
Four years later, Jay A. Curdy, of Cleveland, Ohio, applied De Coster's idea to a fishing reel. He filed a patent application for an attachment to a non-level-wind reel, which supported a rolling cylinder with two longitudinal, spiral ribs, or vanes. When the roller was turned by the friction of retrieved line, the ribs moved the line back and forth as it was spooled.



*The incoming line on Curdy's reel turns the level wind (25), which guides the line back and forth. The gadget is clamped to the top reel pillar.*

Curdy was born in Painesville, Ohio, in 1889. After starting out as a window trimmer in a Cleveland clothing store, he established his own business — Display Craft, Inc. — during the 1920s. His patent was granted on November 15, 1927.

Perhaps the spiral-cam level winds best known to collectors are those made by the Spiral Wind Fish Reel Co., Inc., of Buffalo, N.Y. These reels, equipped with rotating spiral bars in front of the spools, were the brain-children of Hyla Fredrick Maynes, who was granted several patents for them from 1934 to 1944, while he and his wife, Emma, were living in North Tonawanda, N.Y. They were the first commercially successful reels with spiral-cam level winds, and var-



*Maynes' first fishing reel. The handle (6) spans the frame and cranks the reel by ratcheting.*



*A Spiral Wind reel with its spiral bar level wind.*

ious models were produced by the company, which was located a few miles from the Maynes' home at 12 Whiting in N. Tonawanda.

Maynes was born on New Year's Day in 1881 in Tioga Co., Pa. Beginning in 1901, while working in Corning, N.Y., Maynes submitted at least three patent applications for a coaster-brake transmission for chainless bicycles. A leading bicycle company adopted the brake, and the inventor made a name for himself by his early twenties.

In 1906, back at Gaines Township, Tioga Co., Pa., Maynes directed his inventive energies elsewhere, submitting his first patent application for an amusement park ride featuring rotating, tilting cars. He would continue to invent other rides and associated hardware until the onset of World War II. Later in the decade, he took a position in an automobile factory for a while in Denver, Colo., and then returned to Gaines Twp., where he was working as a machinist in a garage by 1910.

Within the next several years, Maynes would open his own business equipping and setting up traveling amusement parks. In 1916, while traveling with a circus, he set up his Coney Island rides in Watrous, Gaines Twp., where he and Emma then lived, and provided free rides for the locals. Over the next few years, he would travel widely with his show, and he gained a reputation as "The Ride King." He also fished for bass in nearby Pine Creek. What may have sent Maynes north was the fact that his rides were manufactured at Spillman Engineering Corp. in N. Tonawanda. By 1925, Maynes was filing more ride patent applications from there.

Maynes filed for his first fishing reel patent in May, 1932. The invention was a saltwater trolling reel equipped with a large, U-shaped lever, spanning the frame, that was cranked back and forth to wind the

reel. At least one additional patent for the reel followed. It wasn't until June, 1934, that he finally invented what would become the "Spiral Wind" reel. His first patent for the reel was granted on September 11, 1934, and Spiral Wind Fish Reel Co. probably was founded around that time, but not before Maynes was able to close down the carney rides he had set up at the Chicago World's Fair of 1933-34.

During the late 1930s and into the early 1940s, Maynes patented more spiral-cam reels, an automatic single-action reel, more rides, and equipment for manufacturing radiators. In 1945, a lot of Maynes-designed carnival equipment was advertised for sale, and it was probably his own. He retired around that time, moving with Emma from N. Tonawanda to Miami, Fla., where he died on October 16, 1948.

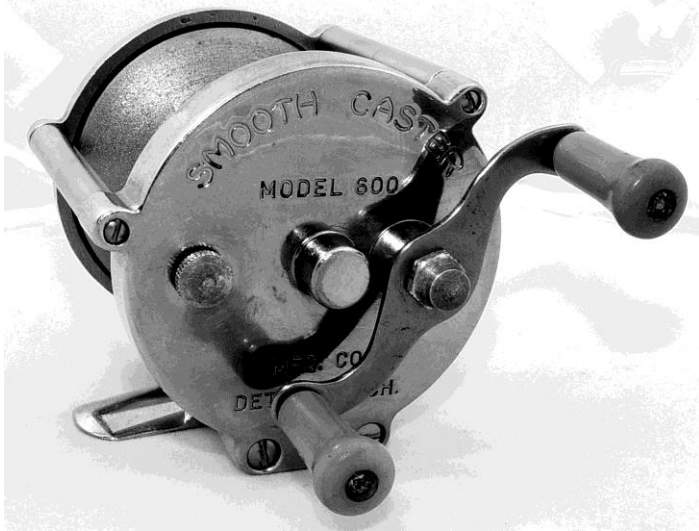
Penn Fishing Tackle Manufacturing Co., Philadelphia, Pa., acquired the rights to the Spiral Wind patents, adapting the mechanisms to produce its No. 350 "Leveline" reel. Whereas the Spiral Wind cams alternated rotational directions, the Leveline spiral bar turned in only one direction.



*A Penn Leveline 350 reel, ca. 1970.*

The simplest, and perhaps the most interesting, spiral-cam reel was the "Smooth Caster," made initially by the Betts & Boddeus Manufacturing Co. in Detroit, Mich. In a sense, the reel was a throwback, a raised-pillar reel with a sliding click button and a knurled screw for an adjustable brake. However, the spool arbor carried two longitudinal, spiral flanges that pushed the line back and forth along the arbor as it was retrieved.

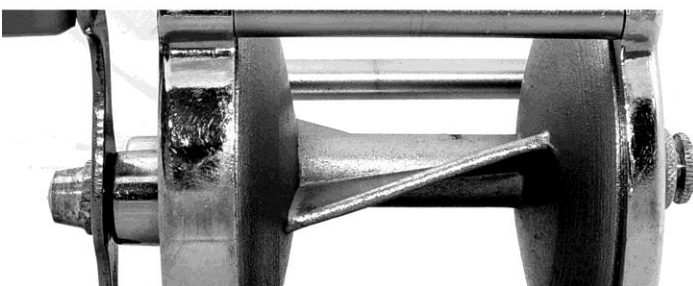
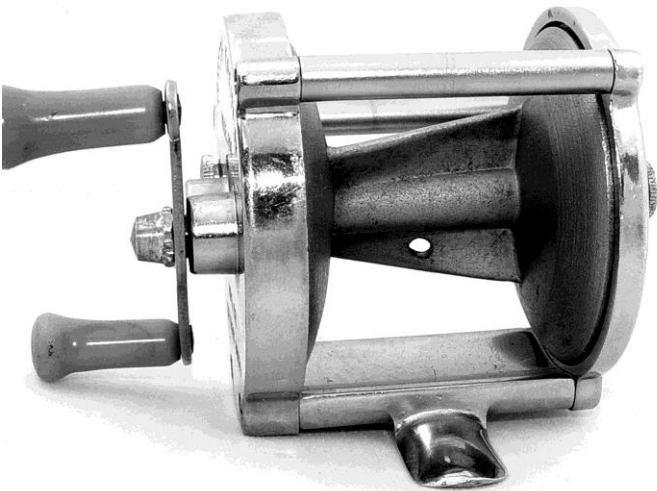
In 1922, twenty-one-year-old Henry Theodore Joseph Boddeus, a Dutch assistant steward on the S.S.



*The Smooth Caster reel with its aluminum, raised-pillar frame. Earlier models bore the Betts & Boddeus name.*

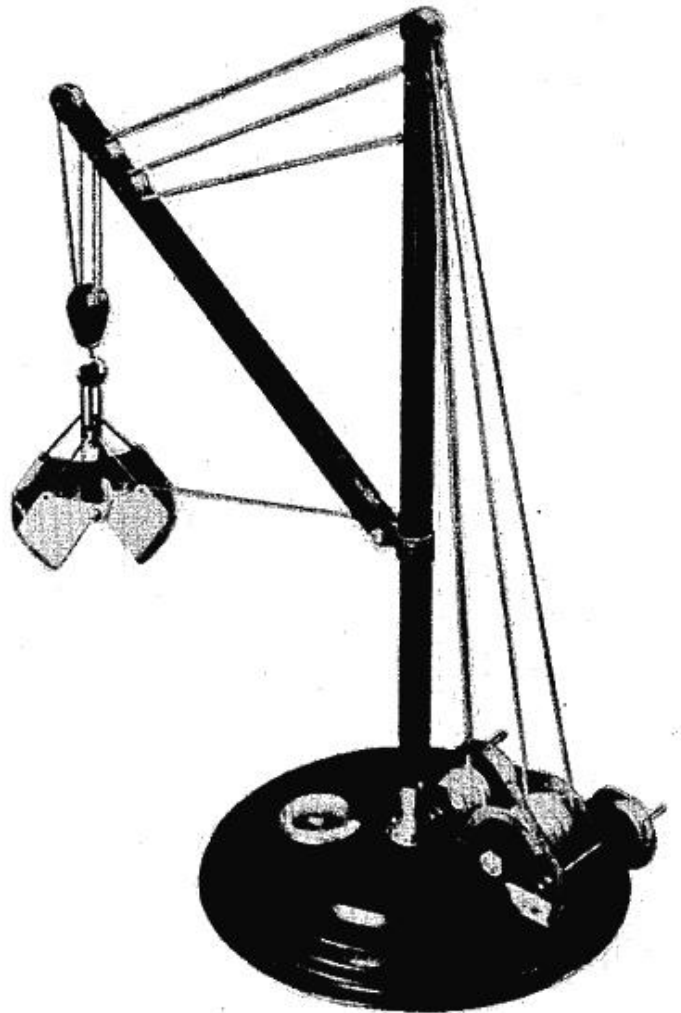
Pastores, jumped ship in New York City. Possibly as an alternative to deportation, he served in the U.S. Marine Corps from 1923 to at least 1928 and was stationed in Haiti and several U.S. cities, arriving in Detroit in 1928. By 1934, he lived with his Tennessee-born bride in Flint, Mich.

Born in Alabama, Murrie C. Betts was a twenty-two-year-old machinist in Saginaw, Mich., in 1930. He was still working there at Baker Perkins, Inc., in 1941.

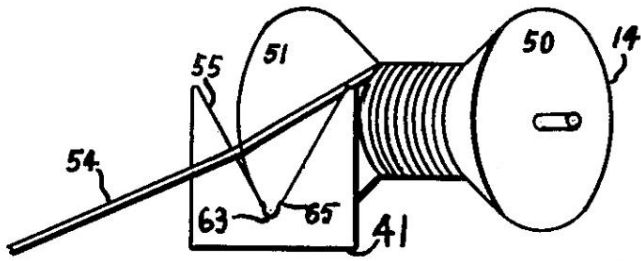


*Two views of the Smooth Caster spool arbor with its spiral vanes.*

After the war, Boddeus, Betts, and H.D. Betts partnered to establish Betts & Boddeus Manufacturing Co., located at 3005 Caniff St., Hamtramck, Mich., in 1946. The company made toys, one of which was a derrick for which Murrie Betts eventually received a design patent in 1950. Boddeus left the firm quickly and moved to Florida, where he died in 1947. The company was renamed Betts Manufacturing Co. and moved to 1601 Howard St., Detroit, by 1948. The spiral-cam level wind reel appeared before Boddeus left, as some reels are marked with the Betts & Boddeus name. After the change, the company re-focused on sporting goods, fishing tackle, and display stands. It made both steel and fiberglass rods, and its later reels are marked "Smooth Caster Mfg. Co." By 1959, the company moved to 20855 Telegraph Rd. in Detroit. Murrie Betts also moved to Florida by 1963, where he patented a chair-attached sunshade. He died in St. Petersburg in 1996.



*Murrie Betts' toy derrick. His application for a design patent was submitted in 1946, and the toy was produced by the Betts & Boddeus company.*



*Wilson's variation on the spiral-cam level wind. Although there is no actual cam, the point of contact of the incoming line with the spool traces spirals back and forth along the arbor.*

An unusual variation of the spiral-cam level wind was patented on March 3, 1953, by Charles W. Wilson, of Norton Twp., Muskegon Co., Mich. The reel spool consisted of two truncated cones whose narrow ends met in the center. A vertical plate with a V-shaped notch was mounted at the front of the reel, and the combination of the notch and spool shape resulted in the retrieved line being wound evenly.

Spiral-cam winding came to be used widely by industry for wire and synthetic fibers, but I'm not aware of any other fishing reels so equipped. One might imagine that rotating cams could require fewer parts than the typical reciprocating line guide, though the Spiral Winds and the Penn certainly had parts aplenty. On the other hand, thumbing the spool of the simple Smooth Caster may have been a little too interesting for most anglers. Maybe the level winds just didn't work that well, requiring different pitches for spools of varying widths turned at varying speeds by gear trains of varying multiplying ratios. Whatever the reason for their demise, I'll miss them.