

# Studies in Pre-Shakespearean Literature

by Steven K. Vernon

(This article is part of a series about inventions that were adapted for use in fishing reels.)

For the better part of a century, angling historians credited William Shakespeare, Jr., with the invention of “the level wind” used on untold numbers of casting reels, based on his famous patent of 1897. There is little question that Shakespeare’s company was largely responsible for convincing the angling public to buy reels equipped with such devices, but people hardly noticed that, within a decade, Shakespeare began to phase out the use of his own double-screw level wind in favor of Walter Marhoff’s more efficient, single-screw design of 1907. As most collectors are aware, Marhoff’s invention was merely the latest, perhaps most improved, version of what may be called the “standard” level wind, the earliest example of which had been patented in 1860.

Mark Palmer’s 1860 device consisted of a line guide that traveled back and forth as it rode in an endless groove cut into a single rotating cylinder. The helical groove was cut with a right-handed pitch in one direction and returned with a left-handed pitch. The second column of this series (*Reel News*, Vol. XIII, No. 1, 2003) described a machine that anticipated Palmer’s mechanism twelve years before his reel was patented.

In 1883, Louis Schultz, of New York City, was granted a patent for what was entitled a “Mechanical Movement,” which Schultz said was “particularly adapted” for use in a quilting machine. Briefly, the mechanism was capable of converting rotational motion to reciprocating linear motion in a novel fashion. As shown in the patent diagrams of Fig. 1, the invention incorporated two similarly pitched, rotating screws, or worms, on which a platform or “work-carriage” rode back and forth. A pivoting, two-ended pawl attached to the platform engaged the worms alternately as the platform reached the end of its travel in either direction.

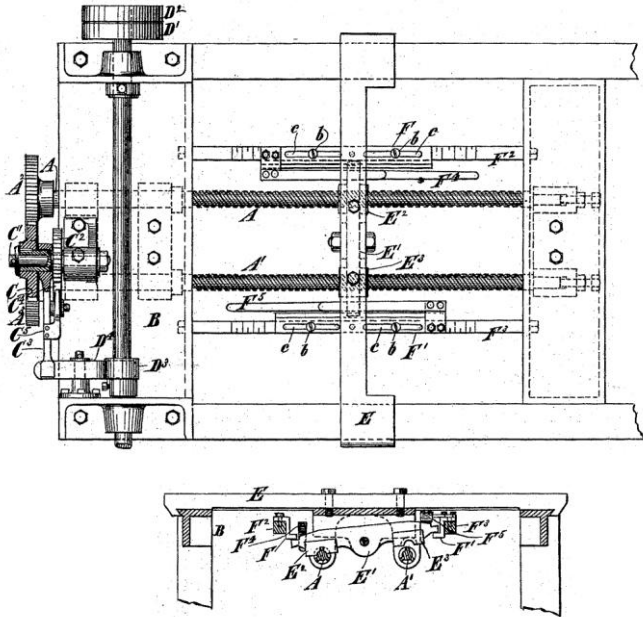


Fig. 1. Patent diagrams showing (top) a bird's-eye view of Schultz's quilting machine and the pivoting pawl that engages the twin screws (A, A'). The pivoting pawl (E) is attached beneath the platform (E). At each end of the platform's travel, it is pivoted automatically until it engages the other screw. The semicircular cutouts of the pawl ride in the grooves of the screws, just as reel level wind pawls do.

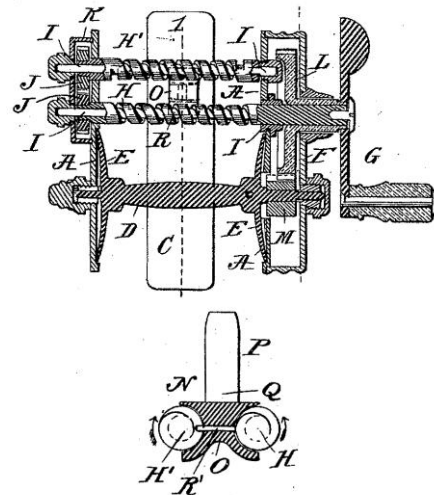
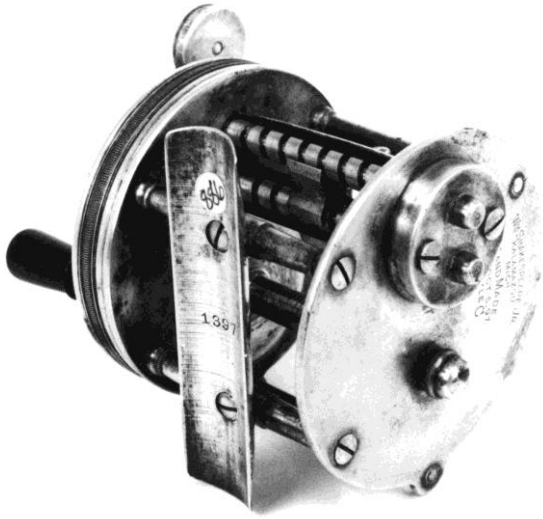


Fig. 2. Patent diagrams showing (top) Shakespeare's twin-screw level wind in a bird's-eye view of his reel. The lower drawing shows a cross-section of the line guide base. The sliding pin (R') rides alternately in the grooves of screws H and H'.



*Fig. 3. Photograph of Shakespeare's level wind on a Style C reel.*

Shakespeare's 1897 level wind essentially duplicated Schultz's mechanism. As shown in Fig. 2, the line guide alternately engaged one or the other of the twin screws by means of a pin, which slid to the other screw when the guide reached its ultimate destination in either direction. The most significant difference between the quilting machine and the fishing reel designs was that Schultz's twin screws rotated intermittently, *i.e.*, with regular stops during their rotation. (Quilting machines have their own needs, after all.) But the means of reversing the linear motions of the platform and line guide were virtually identical.

The next time you're fortunate enough to crank a Shakespeare Style A, B, or C reel with a level wind that still works, raise your glass to the memory of Louis Schultz, whose inspired design made them possible.