

The Once and Future Reel: The Arrival of the Automatic Fishing Reel

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In 1987, David Beazley, the eminent British angling historian, included an intriguing quotation in his "Fishing Reels, a History," published in *The Journal of Flyfishers Club*, Vol. 76, No. 284, Summer, 1987:

"A reel has been invented lately containing a spiral spring which acts (in the manner of the spring in a window blind) upon the axis to wind up the line."

Why intriguing? The quoted sentence was written by Alfred Ronalds in his groundbreaking *The Fly-Fisher's Entomology*, published in 1836 (London: Longman, Hurst, Rees, Orme, Brown & Green). It was a revelation to learn that someone had invented, or at least proposed, an automatic reel almost half a century before Francis Loomis, of Onandaga, N.Y., was granted a U.S. patent, in 1880, for what has been purported to be the first automatic reel for sport-fishing. Unfortunately, Ronalds provided no additional information about the reel or its inventor. He probably had no first-hand knowledge of the reel.

After decades of wondering if we would ever learn anything about this possibly apocryphal automatic reel, I think we can now identify it.

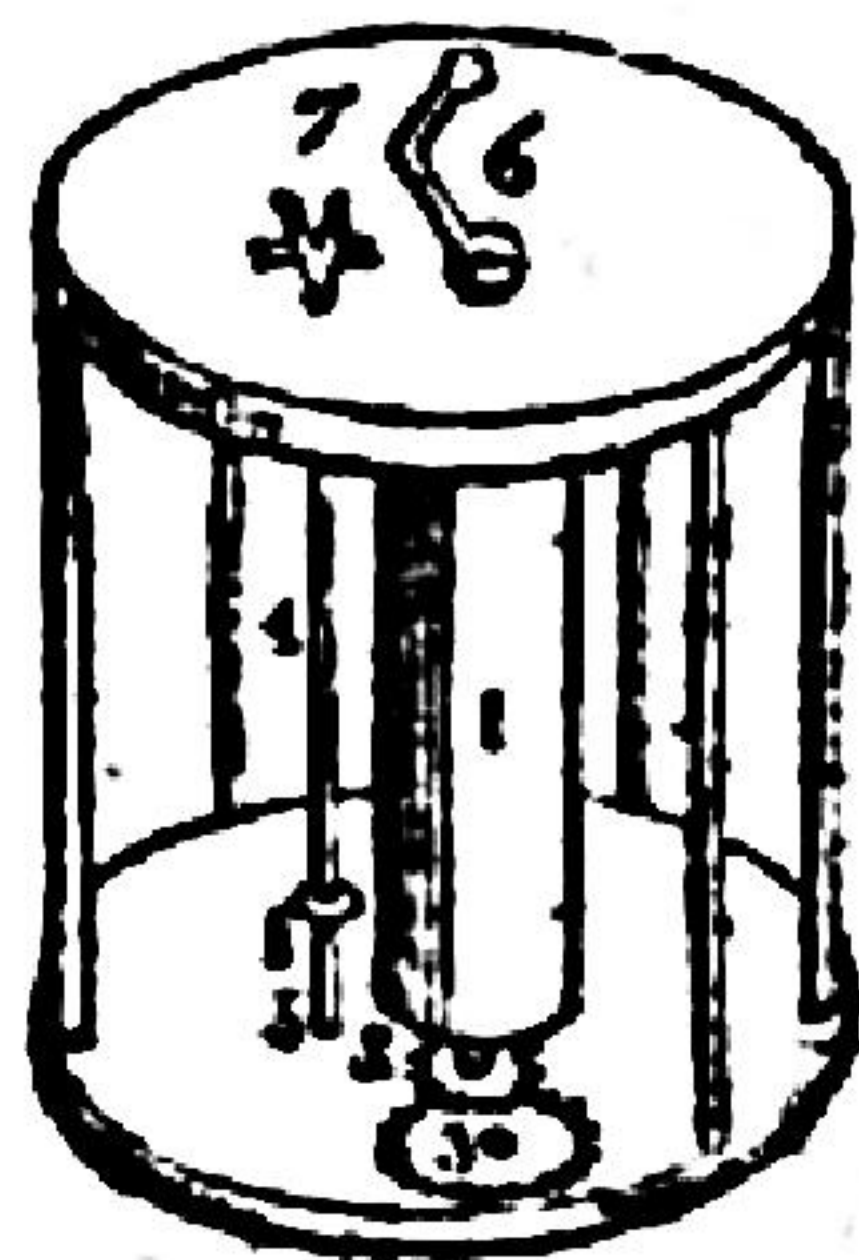
This story began when I stumbled across a letter to J.C. Robertson, editor of *Mechanics' Magazine* (London: Knight & Lacey), entitled "Improved Fishing-Rod Reel" and published on pp. 105-106 in the issue dated June 17, 1826 (Vol. 6, issue No. 147). The letter itself was dated May 3, 1826, and it described a spring-driven reel that "will wind up a given length of line without having occasion to use the handle." Bingo! Ten years before Ronalds' book was published and fifty-four years before Loomis & Plumb, Syracuse, N.Y., produced their first automatic!

The letter writer provided a description and a single drawing of his invention. Although his letter is reproduced here *in toto*, I will try to interpret his design, which lacks some detail. The reel crank turns a one-inch-diameter "axle", or arbor, that spans the inside of what appears to be an ordinary reel frame of the period. A four-tooth pinion gear is attached to the distal end of the arbor, and it must be journaled in the

tailplate. There is no indication in text or drawing that the arbor carries any spool flanges.

Meshing with the pinion is a thirty-two-tooth main gear, "behind" which is a coiled spring. My guess is that the spring fits within a recess cut into the back of the gear. My guess is also that the spring is anchored to the tailplate, because it is supposed to hold the main gear in mesh with the pinion. Because a means of pushing the gear out of mesh with the pinion is provided, the main gear may be journaled in a slot in the tailplate; however, it's conceivable that the gear isn't journaled at all, but is merely attached to the inner end of the spring itself and can move when the gear/spring assembly is pushed sideways. When the reel is cranked, the pinion turns the main gear and tightens the spring.

The inventor includes a "bolt," or rod, to prevent the main gear from being spun by the tightened spring. Once the reel is cranked, the rod is pushed inward, and it slides into a hole in the gear "casing," which can only mean the tailplate. It "sends [the main gear] out of gear and prevents its revolving." I believe that this "sending" is effected by a pawl attached to the rod, as the drawing shows what appears to be a pawl just above the number 5, which desig-



P.P.'s drawing of his proposed automatic reel

nates a "guide" for the rod. Supposedly, when a fish is hooked, the angler pulls out the rod, the spring-mounted main gear is released, and it meshes with and turns the pinion. "The spiral spring on the large wheel is not so strong but what the fish may run out with line if you allow it, but in returning or plunging, the line is constantly kept tight, by means of the spring. On this plan, if you are ever so careless or inexperienced, you will never have a slack line..." Note that the reel has an 8:1 multiplying ratio.

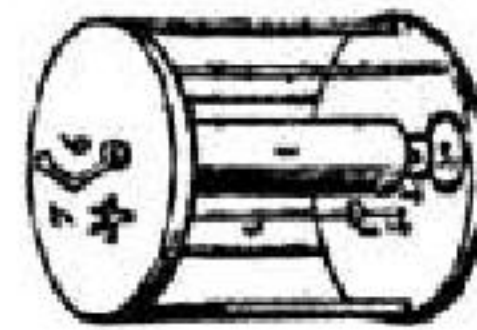
The writer goes on to lament that "The art of fishing seems to be the only one in which of late years no improvement has been made; and were good old Isaac Walton to reappear amongst us, he would marvel at other wonderful inventions, and be surprised to find this art still in the same state as when he flourished in the seventh [sic] century."

Not only did the writer invent an automatic reel, he also invented what may have been the very first freespool clutch. This was thirty years before the earliest extant American reel patent described a clutch, invented by John Bailey, a Jersey City, N.J., copper-smith, who assigned his patent to John Warrin, the New York City needle, hook, and tackle maker and retailer.

Was the proposed reel ever produced or even patented in Great Britain? I have no idea. But even if we forever lack that information, it would be nice if we could identify the letter writer. The letter was sent from Retford and was signed only "P.P." Retford is a town in Nottinghamshire, about 30 miles from Nottingham. The only "P.P." from that area I've been able to identify was a tavern owner in Nottingham during the 1830s. P.P. was probably an educated gentleman with some training in mechanical engineering, perhaps gained during service in the military.

Although the single drawing could have used some refining, it should not have been difficult for P.P., perhaps working with a collaborating reelmaker, to produce a working prototype. I hope that we will eventually learn the visionary P.P.'s identity and whether or not his reel ever made it beyond the proposal stage. Ronalds' mention of the reel suggests that it did, indeed, appear streamside at some point.

In 1838, Shipley & Fitzgibbon wrote that "we have heard Chesterman's self-winding reel much commended, but we can see only one advantage in it, namely, that it winds up with great speed; but, then, an insuperable objection to it is, that there is a difficulty in modifying that speed, according to will; and that, consequently, in playing a fish, you have not free power over its mechanism. Besides, its construc-



To Mr. Robertson.

SIR,—The above representation of a Reel for a Fishing-rod is so constructed by means of a spiral spring, that the axle No. 1, will wind up a given length of line without having occasion to use the handle.

No. 1, Is the axle on which the line is wrapped, 1 inch diameter.

2. Small wheel on axle, of 4 teeth.

3. Wheel of 32 teeth, in which is the spiral spring that gives motion to the wheel.

4. The bolt which slides against the wheel 3, and pushes it out of gear.

5. A guide for the bolt to slide in.

6. The handle for winding.

7. The handle of the bolt.

The advantage accruing from this, I conceive will be great, particularly to anglers like myself, who have not had sufficient practice to make themselves perfect in the interesting diversion of angling.

Behind the wheel 3, is a small spring, which presses against the wheel, and keeps it in gear with the small one; therefore, when this is not wanted, you push the bolt 4 by the handle 7, which slides into some of the holes made on purpose in the casing of the wheel 3, which sends it out of gear and prevents its revolving. The reel is then used similar to common ones.

When a large fish is hooked, you immediately pull back the bolt 4, and the wheel then springs into gear. The spiral spring on the large wheel is not so strong but what the fish may run out with line if you allow it, but in returning or plunging, the line is constantly kept tight, by means of the spring. On this plan, if you are ever so careless or inexperienced, you will never have a slack line, which would prevent many a fish being lost, as they invariably unhook themselves (particularly the wary trout) when the line is permitted to get slack.

A reel, made with wheels and axles same size as those specified in the explanation of the drawing, would require a spiral spring of about 30 turns, and would lap up about 30 yards of line; but they may be made to draw up any quantity, by having a larger spring, wheel 3, and axle.

Perhaps some of your readers may be able to give a better plan than the above, to answer the same purpose.

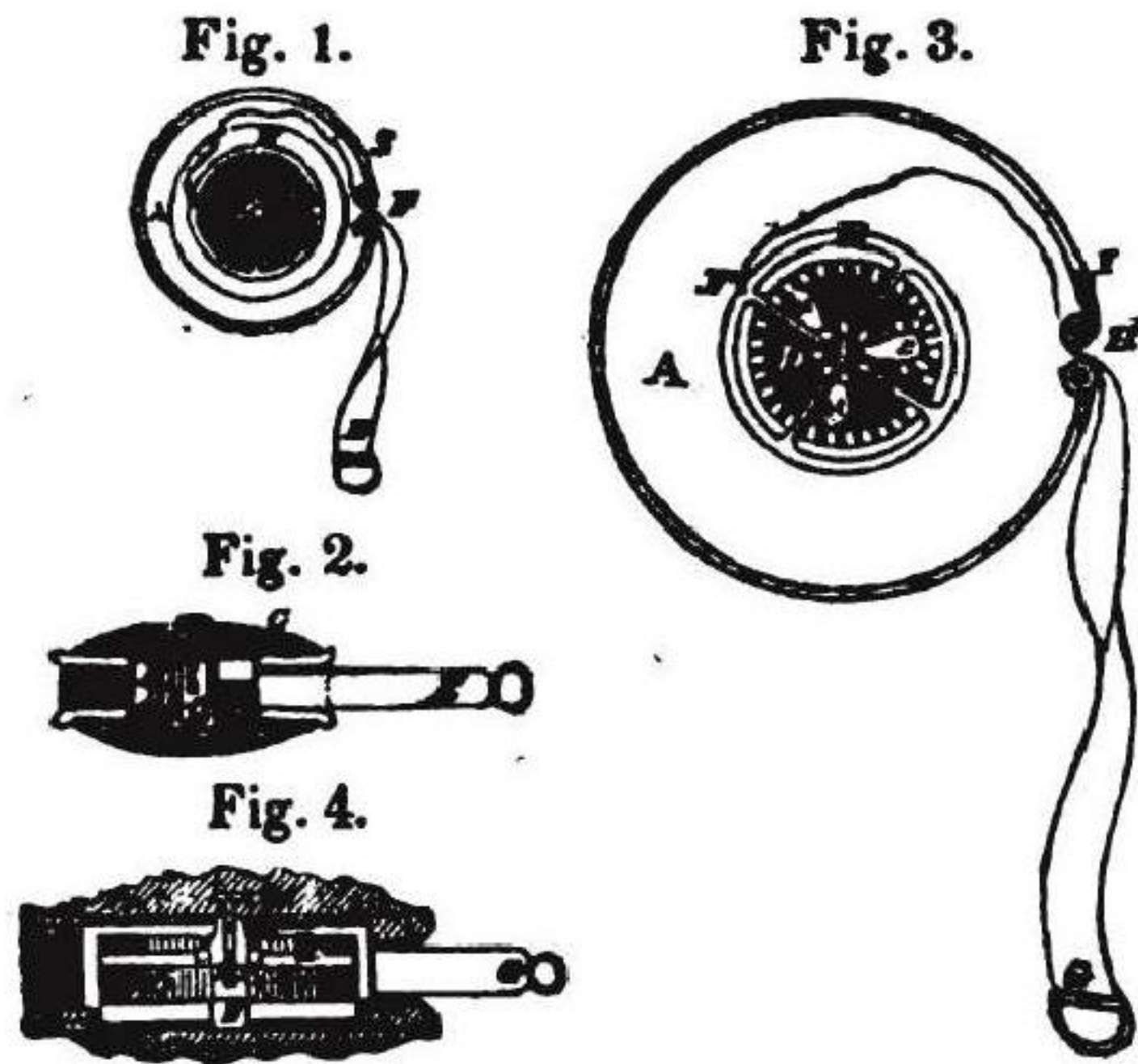
The art of fishing seems to be the only one in which of late years no improvement has been made; and were good old Isaac Walton to reappear amongst us, he would marvel at other wonderful inventions, and be surprised to find this art still in the same state as when he flourished in the seventh century.

I am, Sir,
Your's, respectfully,
P. P.

Retford, 3d May, 1836.

tion is heavy and over-complicated.”¹ Chesterman’s reel may have been a commercialized adaptation of the reel design proposed in 1826.

Born in 1792, James Chesterman arrived in Sheffield, Yorkshire, from London in the late 1810s and went to work for James Dixon & Sons, silversmiths. It didn’t take long for him to begin a series of partnerships. He went into business as a machinist, making powder flasks, but in late 1820, his partnership with John Bartram was dissolved. Chesterman formed a new partnership with Bartholomew Hounsfeld, and the firm made powder flasks and shot belts. This partnership did not last long, either, but in 1829, Chesterman patented the invention that would eventually make him rich—a self-retracting measuring tape whose internal spring was wound as the tape was drawn out.



Chesterman’s drawings for his 1829 self-retracting tape measure

By 1832, James Chesterman & Co., Ltd., manufactured measuring tapes and other measuring instruments, but by 1834, the inventor was working at the firm of James P. Cutts, where he would become a partner. Cutts manufactured optical instruments, window blinds, and Chesterman’s tape measure. In 1837, Chesterman patented an improved spring for a self-rolling window blind. Obviously, Chesterman was uniquely qualified to be the manufacturer of what was almost certainly the first commercially-available automatic reel.

In the next decade, Chesterman continued to patent a variety of items, and the company expanded. By 1848, it had reorganized to become Cutts,

Chesterman & Bedington, located at 39 Division St. in Sheffield. The company was now making a number of Chesterman’s patented measuring instruments, as well as tape measures, window-blind springs, a patented spring for knives and razors, and a host of other products. Bedington left in the early 1850s.

Three distinct businesses occupied 39 Division St. by 1854, according to a Sheffield directory: J.P. Cutts, Sutton & Son, “opticians to her Majesty,” Cutts, Chesterman & Co., manufacturers of tape measures, window blind rollers, etc., and James Chesterman, “patentee & general machinists.” Cutts, Sutton & Son advertised in a trade journal that same year. The company also had addresses in London and New York.

By 1864, James Chesterman & Co. moved into a large factory renamed the Bow Works, after the company’s logo. Chesterman died in 1867, but his firm would endure long enough to be acquired by The Stanley Works in 1989, which continued to make tools marked with his name.

In an appendix to an edition of Walton’s *The Complete Angler*, published in 1856, the publisher, Henry Bohn, informed readers that “there is also a reel, called *Chesterman’s self-winding reel*, containing a spiral spring, which acts like the spring of a window-blind, in winding up the line by its own force. It has the advantage of winding up with great speed, but there is a difficulty in modifying it at will.”² Unless these remarks were merely lifted from Shipley & Fitzgibbon’s book, we can infer that Chesterman’s reel was in production for at least eighteen years. Further research will be required to determine whether or not Chesterman’s reel was related to P.P.’s 1826 proposal.

Notes

- ¹ Shipley, William, & Edward Fitzgibbon, *A True Treatise on the Art of Fly-Fishing, Trolling, etc., as Practiced on the Dove, and on the Principal Streams of the Midland Counties; Applicable to Every Trout and Grayling River in the Empire*. London: Simpkin, Marshall, & Co., 1838, p. 68
- ² Walton, Izaak, & Charles Cotton, *The Complete Angler, or The Contemplative Man’s Recreation*, edited by Edward Jesse. London: Henry G. Bohn, 1856, p. 332

I am grateful to David Beazley for his advice and help in writing this article.