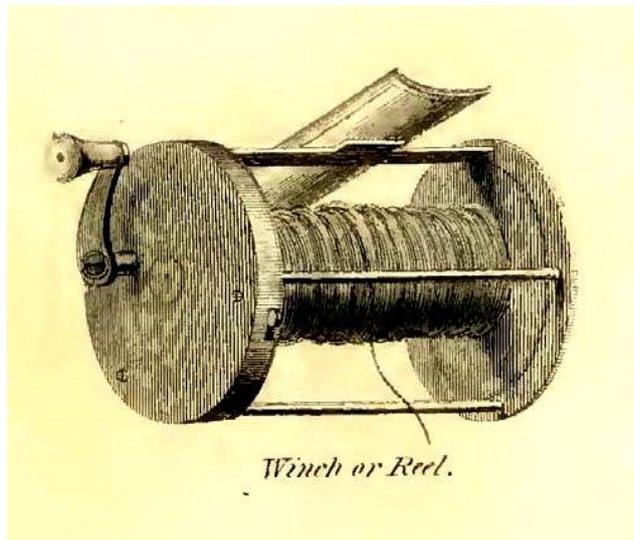


# The classical multiplier

Hans van der Pauw

The first fishing reels, or 'winches', were simple reels of the centrepin design, in which the handle was fixed to the spool. That means of course that one turn of the handle equals one revolution of the spool. The 'multiplying reel' or 'multiplier' differs from that: a gearing was added to make the spool revolve faster than the handle, which makes retrieving a bait a swifter and easier job.

The multiplier was invented in England in the 18th century. Advertisements by the London fishing tackle maker Onesimus Ustonson, dating from between 1760 and 1770, show that 'multiplying brass winches' were well-known by that time. Judging by the oldest known illustration of such an item, published in volume 2 of William Barker Daniel's book *Rural Sports* from 1802, those early brass multipliers were rather clumsy, primitive and weak constructions. Despite that, they were apparently seen as an improvement on the centrepin reel, as in the first decades of the 19th century they had already become a common piece of angling equipment in England.



The first illustration of a multiplier, from *Rural Sports* by W.B. Daniel (volume 2, 1802).

During the first half of the 19th century multipliers were much improved. To some extent this was done in England, but the major part of the reel's development took place in the United States, particularly in the state of Kentucky. The father of the 'Kentucky reel' - back then the usual name for a multiplying reel - was George Snyder, a watchmaker and silversmith from Paris, Ky. Snyder made his reels between 1820 and 1844. Taking his models as examples various other craftsmen from that state started making 'Kentucky reels' from 1833 onward, e.g. the brothers J.F. en B.F. Meek and B.C. Milam. These reels were used primarily for 'baitcasting', which meant casting fairly heavy artificial lures, like plugs and spoons.



Brass multiplier by George Snyder  
from Paris, Kentucky, ca. 1830-1840.

By the start of the 20th century American made multipliers had already reached a high degree of quality and functionality. They were made in large quantities and part of this production was exported to Europe and other parts of the world.



Tournament multiplier with perforated  
spool, made around 1910 by B.F. Meek  
& Sons from Louisville, Kentucky.

### **A.B. Urfabriken (ABU)**

In Svängsta, in the south of Sweden, a firm called A.B. Urfabriken (Watch Factory Ltd.) was established in 1921. It was known from the late 1950's by the abbreviation ABU. For the most part this firm made specialised clocks and timepieces, like telephone control clocks and taximeters, the latter under the brand name 'Record'. By 1939 it had developed a very handy and manageable taximeter, but in September of that very same year World War II broke out. Among many other things these war circumstances brought about a scarcity of fuel - which meant a decline in the use of taxis - and a halt to overseas export. Both these effects were disastrous for the home market and the export of taximeters. By the end of 1939 this made A.B. Urfabriken decide to change its activities over to producing fishing reels. Multipliers in fact. The first models were marketed in 1940 and like the taximeters they carried the 'Record' brand name (this brand name changed to 'ABU' from 1957 onward). These Record reels were based on the American multipliers that had been popular in Sweden before the war.

The Record catalog of 1941 states the following on his new enterprise (in my translation):

"99% of the baitcasting reels that have up to now been used in our country, were imported from America. This import has now ceased, but anglers need not worry. They now have at their disposal Swedish built reels, made and guaranteed by A.B. Urfabriken, Svängsta."

This was immediately followed by a quote from an 'advertorial' in the newspaper *Svenska Dagbladet* of 12 November 1940, in which the quality of these Swedish reels was compared favourably with that of American multipliers:

"RECORD baitcasting reels made by A.B. Urfabriken have proven to be of at least as good a quality as the better American reels, which makes their import from now on unnecessary. RECORD [reels] are made in five different models, in outer appearance similar to the American ones, but with an improved mechanism. When test casting with the RECORD 1800 the distances achieved were at least as good as with the best American reels. Thanks to the smooth working brake on our RECORD considerable distances can even be achieved in a headwind."

**Det officiella svenska längdrekordet i spinnkast är 58,02 meter.**

Rekordet gäller för fiskeklass med 18 gr. kastvikt (speciell trävikt för tävlingar) och vanlig fiskeutrustning, då rullen icke får vara försedd med automatisk broms eller frikopplad spole. Linan får icke vara tunnare än 9 lbs och kastet utföres på slät mark.

En av förutsättningarna, om man vill göra en god fångst, är att kunna kasta långt med precision. Efter någon tids träning, då draget kan kastas precis till den vasskant Ni vill placera det, bliva fångstmöjligheterna större och Ni får erfara spinnfiskets tjuuning.

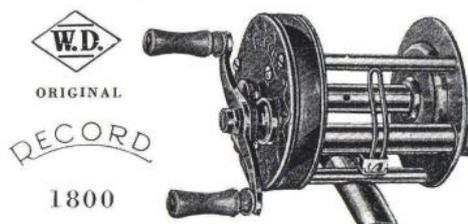
För att kunna nå ett gott resultat måste spinnrullen vara förstklassig, annars hjälper det icke hur bra spöet och linan är, och hur mycket Ni än tränar.

99 % av de spinnrullar, som hittills använts i vårt land, hava importerats från Amerika. Denna import är nu stoppad, men sportfiskarna behöva icke oroa sig. Det finnes svenskbyggda rullar, tillverkade och garanti-stämplade av A.B. Urfabriken, Svängsta.

**En välkänd sportfiskares utlåtande:**

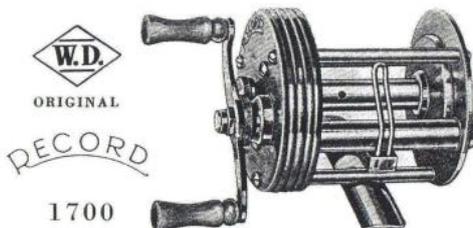
(I Svenska Dagbladet den 12 nov. 1940.)

RECORD spinnrullar av A.B. Urfabrikens tillverkning hava vid prov visat sig vara av minst lika god kvalitet som de bättre amerikanska, varför import i fortsättningen synes onödig. . . . RECORD tillverkas i fem olika typer, till det yttre lika de amerikanska, men mekanismen har förbättrats. . . . Vid provkast med RECORD 1800 ha nåtts minst lika fina kastlängder som med de bästa amerikanska rullar. . . . Tack vare RECORDS mjukt verkande broms, kunna avsevärda kastlängder uppnås även i motvind.



En förnämlig spinnrulle av högsta kvalitet, i lyxutförande med gravyr. Lovordas av experter som provkastat densamma. Synkroniserad balansbroms med fjädrande fiberbrickor mot vevaxeln. Genom att lossa en mutter avmonteras hela revspridaren och evighetsskruven, utan att rullen för övrigt isärtages. Dubbel knivbult. Kapacitet 100 yds. Äkta Agatlager. Pris Kr. 44.—. + Omsättningsskatt.

Tillverkas även med lättmetall-spole.



En precisions-rulle med finesser som endast återfinnas hos de dyraste amerikanska rullar. Snedskurna breda drev, förstärkta med brygga. Synkroniserad balansbroms, som är kopplad direkt på vevaxeln. Alla axlar av silverstål. Äkta Agatlager. Dubbel knivbult. Kapacitet 100 yds. Pris Kr. 32.—. + Omsättningsskatt.

Tillverkas även med lättmetall-spole.

RECORD n:o 1800 och 1700 hava hårdförkromade evighetsskruvar. Denna ytbehandling är hårdare och slitstarkare än hårdat stål.



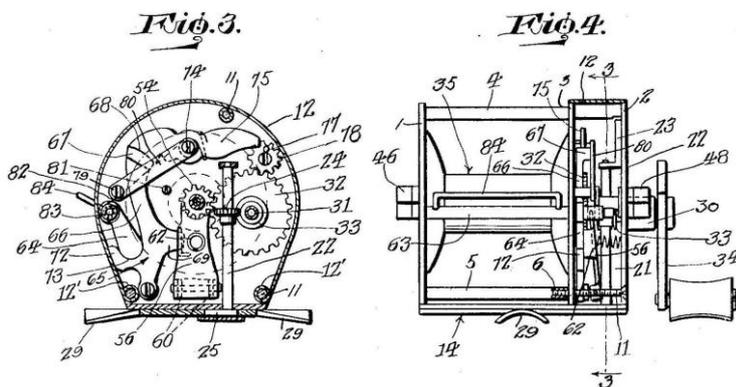
From the Record catalog of 1941 : multipliers made by A.B. Urfabriken in Svängsta, Sweden.

## Free spool mechanism and centrifugal brake

Whether or not the early Record reels could indeed compete favourably with the best pre-war American multipliers, I wouldn't dare to confirm. I've never used either of them. But there can be no doubt that the best pre-war American reels were made to a very high standard of technical design and craftsmanship. The most advanced American reels of that era certainly look more impressive than the first Record reels from the 1940-1944 period. But with the introduction of the Record 2100 Sport in 1945 these Swedish reels also reached the highest degree of perfection at that time. The 2100 Sport namely was the first Record reel with a free spool mechanism. This mechanism disengages the spool from the transmission during the cast, so that transmission and handle do not revolve together with the spool. The spool can now run much more freely so longer casts can be made. Also the 2100 Sport was the first reel that was equipped with a centrifugal brake, an innovation patented by A.B. Urfabriken. This brake evened the spools speed when casting and thus reduced the risk of 'overrunning', which may cause a 'backlash' - commonly known as a 'bird's nest'. The free spool mechanism reduced that same risk as well, as it lessened the 'flywheel effect' by unlocking the handle in particular.

The free spool mechanism on multipliers was not an innovation by A.B. Urfabriken however, but an American invention. The oldest patent I know of was granted on 12 December 1933 to a Mr. Ira L. Spenny an optometrist from Versailles, Ohio.

(See: <http://www.freepatentsonline.com/1939148.html> , which offers a link to the PDF-document of the patent.)



Two technical drawings for the advanced, from the patent of Ira L. Spenny (1933).

## Transmission (ratio)

The original term 'multiplier reel' refers to the multiplication of the handle's revolution to that of the spool. A multiplication by four means that one revolution of the handle causes the spool to revolve four times - in short a transmission of 1:4. Here the principle applies that the higher the ratio of transmission, the higher the speed of retrieving, but the lower the power that can be exercised when retrieving. Therefore a suitable balance should be found between the speed and power that are desired, and this choice of a certain ratio depends in the first place on the kind of angling involved. E.g. boat fishing with heavy weights or for big fish like sharks requires a reel with which a lot of winching power can be exercised, which means a reel with a low transmission. Nevertheless today's high speed world seems to favour high speed reels no matter what their task may be, and ever higher speeds are promoted as an improvement and an advantage by the marketing boys. Shrewdly they do not mention the disadvantage of the loss of winding power that inevitably comes with a high speed transmission. But you're warned now.

The old Kentucky reels of the 19th century, that were used for baitcasting for bass - a form of fishing that involves a comparatively high speed of retrieving a lure - usually had a transmission of 1:4 or thereabouts and for this reason they were referred to as 'quadruple multipliers'. In fact these reels were even faster than the first Record reels from the 1940's, that had a transmission of 1:3.33. The Ambassadeur 5000 and 6000 reels that were produced in the 1950's were a bit faster already, with a transmission of 1:3.6 (factually 1:3.56, for the connoisseur). In 1974 - when the Record reels were already called ABU reels - high speed models of the Ambassadeurs were introduced, with a transmission of 1:4.7 (factually 1:4.66). And after that the transmission was gradually speeded up in small steps. By now the standard Ambassadeur models, like the 5000 and 6000, have a 1:5.3 transmission, high speed models have 1:6.3 and some ultrafast models even have a dazzling 1:7.1.



Record 2100 Sport with light magnesium spool.  
Produced from 1945 until 1973.

## Bearings

The Record 2100 Sport reel from 1945 - the first Record reel with a free spool mechanism - was very popular with tournament casters and the reel broke many long distance casting records. In 1950 A.B. Urfabriken introduced a more advanced casting reel, the Record 3000 Flyer. This was the first Record reel that had the spool shaft run on ball bearings. Furthermore the Flyer had spool caps (serving as a mechanical brake when casting) that could be adjusted a little more accurately. Yet when the legendary Ambassadeur 5000 was brought out by the end of 1952, this reel, which was the flagship of A.B. Urfabriken, was not supplied with ball bearings, but with bronze bushings (the 'Sfäriska Glidlager', that initially gave the 5000 its suffix 'Mod. S.G.'). The 3000 Flyer remained in production until 1957 (while the more popular 2100 Sport was made until 1973) and after that A.B. Urfabriken did not produce any reels with ball bearings for several years. It wasn't until 1963 that ball bearings returned, as sort of a luxury gadget in the very expensive 'golden' Ambassadeur 5000 Deluxe. In the regular Ambassadeurs they didn't return until 1967, when the first Ambassadeur 5000C models appeared on the market.



*The Record Ambassador 5000 reel, as it appeared on the market in 1952.*

It is generally assumed that with a baitcasting reel fitted with ball bearings longer casts can be achieved than with a reel fitted with bronze bushings. In smaller circles however there's room for discussion on this point - just as this is the case with bushings versus ball bearings in centrepin reels. The fact is that reels with bushings, and certainly well run in and polished bushings, appear to cast just as far or even further than reels with well oiled ball bearings. And even ABU was quite aware of this when they introduced their 5000C models (the addition C stands for equipped with ball bearings). From that perspective, the reintroduction of ball bearings in 1963 and 1967 seems to have been above all a commercial choice that offered the illusion of extra quality and perhaps also responded to popular demand. Looking back ABU more or less admitted this. In the Swedish ABU catalog 'Napp och Nytt' of 2002 we can read: "The C-model, the reel with ball bearings, became a success, despite the fact that in reality it did not cast any further, and ever since most models are made both with and without ball bearings." That's how it goes.



My own two faithful Ambassador 4601C3 reels : C-models, with ball bearings.  
The left one is used for lighter work and done up with an old fashioned single handle.

In this era of heavily propagated stainless steel and ceramic bearings, Rocket Fuel reel oil and fine tuning, in which many 'experts' tend to circle around the same trendy assumptions, often in line with the advertorials, the possible equality of bronze bushings to ball bearings when it comes to long

distance casting is not likely to be a subject open for discussion. Not to say it's well nigh impossible to accept the idea. This was also what reel tuning expert Tim Parratt experienced. One day he bought an old Ambassadeur 5000 and found out to his disbelief that with this old reel, fitted with bronze bushings, he could cast further than with his much more up-to-date Ambassadeur 4600C4 generously equipped with ball bearings and trendy Rocket Fuel. Or as he wrote himself:

"I was astounded - the 5000 out-cast the 4600C4. Thinking it was a fluke I kept on casting. Every time it was the same - the 5000 cast further. If someone told me this I wouldn't believe them - a 5000 with two bushings and a fixed spindle design out-casting a 4600C4 with two spool bearings, a level wind bearing and an ultra-cast spool. It made no sense."

Yet those were the facts. Carefully polishing the inside of the bushings, the ends of the spool shaft and some other small parts even turned out to further improve the casting performance of the old Ambassadeur 5000.



The bronze bushing of an Ambassadeur 5000 reel, with its inside polished.

I happen to have had the same experience as Tim Parratt. For years I have used two very well maintained Ambassadeur 4601C3 reels, with ball bearings that is. But a short while ago I took my old and much more primitive ABU 1750A out fishing again, for sentimental reasons and after it had been asleep in the cupboard for many years. A few drops of oil and a fresh line and off we went. I too was much surprised again by the long casts I could make with this little old reel. Longer than with my 4601C3 reels? I haven't actually measured it, but it could very well be.



My simple and trusty ABU 1750A, bought in the last year of production , 1978.

## Finally

There are infinitely more things to tell about multipliers. But in the limited space of this article I confine myself to these few aspects from the life of a highly useful and very pleasing piece of angling equipment. Anyone who wants to know more on the subject has already arrived at the place to be: Wayne Reals website REALSREELS. Tim Parratt's findings and his tips on servicing can be found here too. Tight Lines to you all!

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This article was first published in 2011 in a Dutch version on the website 'Flitsend Nylon' (now no longer in cyberspace). The original can be found, along with other articles - some in English - on my website: <http://jlvanderpauw.nl/artikelen/>. I translated it in August 2015 for Wayne Real's website.