CHAPTER V.

REELS.

However useful the later forms of reel, which can be changed from a click to a multiplier at will, may be where casting the minnow is the usual, and casting the fly the exceptional method of fishing, all the authorities agree that for fly-fishing pure and simple a plain click-reel is the best.

The spool, or part on which the line is wound, should be quite narrow—say from one-half to three-quarters of an inch wide. The narrower this is, the less attention need be given to the distribution of the line on the spool when reeling in. With a wide reel the line, unless watched, has a tendency to bunch in one place. From this bunch some of the lateral coils slip off sideways, and thus become loose; these become involved with the succeeding turns of the line, which then fouls and refuses to render. This state of affairs is not only very annoying, but it is also exceedingly dangerous; since, should this happen when any fish of a size the angler would regret to lose is fast, something will probably break and the fish escape.

Another point of importance is the handle of the reel. This should be so arranged that when the line is drawn from the reel preparatory to the back cast, the loop so formed will find no point of attachment on the handle, should it be accidentally thrown over it; for if this happens and the line catches, the reel is locked and the line will not render. An ordinary unprotected crank-handle, therefore, should never be allowed on a reel for fly-fishing. Two preventive methods are in use: first, using a mere button attached to a circular plate for a handle; and second, protecting the ordinary crank-handle by providing the side plate with a flange, thus forming a recess within which the handle revolves. The object is to prevent the slack line from passing between the plate and the crank. Either of these methods accomplishes this purpose; while, should the line pass over the handle, its shape is such that the line slips off, and thus disengages itself automatically.

Another desideratum in a reel for fly-fishing is that the click should be as light as possible, yet offer sufficient resistance to prevent the reel from overrunning. The friction of the line through the rings and in the water is quite enough, when supplemented by rather a feeble click, to impose sufficient load upon the fish. It is however a matter of the first importance that the line be at all times solidly wound upon the reel, since otherwise snarls will occur and the line refuse to render—always at the most inopportune moment. With too light a click the reel is apt to overrun a little every time the line is drawn out, and this danger cannot be avoided.

No music is so sweet to the angler's ear as the whirr of the reel, for it announces not only the triumph of his individual skill in tempting the fish to forget their habitual caution, but it promises the pleasure of, and a happy issue to, the coming contest. Therefore I prefer one which speaks with a crisp, clear voice, though of course this is of no practical value beyond increasing the pleas-
ure of him that uses it; but this it does, at least in my own case, to no small degree.

This portion of the reel should be well made, for the wear-and-tear upon it is great. The spring, pawl, and click-wheel should all be made of tempered steel; while the pivot upon which the pawl vibrates should be supported above as well as below the pawl, or no man can tell when it will give out and refuse to act. To say nothing of the tangles of line due to the reel overrunning, and the annoyance and danger which follow the disability of this part, to one who is accustomed to its voice, a sense as though a friend were stricken dumb follows, when it should, yet does not speak.

It is to be regretted that the old method of placing the parts which compose the click within a box upon the outside of the reel has gone out of fashion. Then these were open to inspection and adjustment both by maker and purchaser, and they were well and durably made. Now, but too frequently, the pawl is merely secured by a headed pin on which the pawl works, which pin has no support except what it derives from the insertion of one end into the side plate. This is totally inadequate to withstand for any length of time the racking to which it will be subject, and to use such a reel is but to invite misfortune. No part of an angler's outfit should be more absolutely above suspicion, since, with the facilities commonly at hand, an accident here is beyond immediate repair, and unless another reel can be had, the pleasure of his trip if not altogether ruined, is much impaired.

The preceding illustration shows how this part should be constructed. A is the click-wheel, which should be of hardened steel. The axle of the spool is squared to receive the wheel which fits on this square, and is there secured by a large-headed screw, a. Thus this part is a fixture, and cannot by possibility get adrift. The spring, B, is rigidly secured to the side of the reel by two screws, and should be actually tempered and not made from wire or metal which owes its elasticity solely to rolling, as is too often the case. C is the pawl working on a pivot, both ends of which are secured, the lower in a hole in the plate itself, and the upper in the cap, D. This latter is fastened to the plate by two screws as shown. Here it is plain nothing can get out of order; and this was the usual method when reels were provided with an exterior box in which the working parts were enclosed. This box, however, was usually made so unnecessarily large as to be unsightly, while the reels themselves were inconveniently wide. Consequently these were superseded in popularity by a narrower reel, of that form in which the working parts constituting the click are placed between one side of the spool and its adjacent side plate.

Though some reels of this form are well made in this respect, still by far the greater part are not; and brass click-wheels and brass paws inadequately supported, and wire springs riveted to the side plate of the reel, are the usual components of the click. Of course brass is totally unfit as a material for parts destined to such severe usage, and cannot wear for any length of time.
These defects only become apparent in actual use on the stream, to the utter demoralization of the angler. Therefore a reel so made should be rejected; and that such should not be bought unawares, the dealer should be questioned as to how the click is made, or the buyer should insist that the reel be taken apart. Indeed, if he does not already know how to do this, he should insist on being shown, since annual cleaning, oiling, etc., will be advisable, and he should be able to do this without injury to the reel by experimental efforts directed to this end.

Another objection to the reel as at present made, though by no means so serious, is the smallness of the axe on which the line is wound. This seldom exceeds the diameter of an ordinary lead-pencil. Thus at first hardly an inch of line is taken up to a complete revolution of the spool, while it is always retrieved with a slowness neither desirable nor necessary. Some seek to overcome this by first enlarging the axe with ordinary twine, upon which the line is then wound, others by using multiplying or automatic reels.

The illustration on the following page shows the form of reel I make for my own use, and it is the best in principle of which I have knowledge.

In this reel each side of the spool is cast separately. These are faced off on the inner sides, soft-soldered together, and six holes equally spaced are drilled through both. Thus these holes correspond exactly. I then unsolder the sides. Then six short wires (α α α in the diagram) are made of this form, and by inserting the smaller ends in the holes, and soft-soldering, and then riveting the ends down, the sides of the spool are rigidly and per-

is attached to an ordinary crank, united to the shaft by a square bearing and secured by a screw. The flange, C, covers the crank, and prevents the line from fouling it.

Automatic reels in which a spring is coiled by withdrawing the line, and the reaction of which is supposed to retrieve it, have been made and are upon the market.
I have never used one, but the reports that I receive from those who have, do not bias me in their favor. Irrespective of the question of whether they do or do not do in practice what is claimed for them in theory, they certainly, if good for anything, greatly reduce the margin for skill and judgment on the part of the angler, and tend in my opinion to degrade the art to the level of pot-fishing.

Of what material the reel should be composed remains to be considered. Brass and german-silver, or these metals combined with celluloid or rubber, are usually employed and give good results. I prefer an all metal reel, since metal affords a more substantial hold to the fastenings of the click-machinery than rubber or celluloid. The latter save weight, but I do not consider this as important as some do in trout-fishing, where the reel is habitually located below the hand. A moderate weight helps to counterpoise the rod, and thus overcome the leverage of the longer portion against the angler; and we all know it is this leverage, rather than the actual weight of the rod, which causes fatigue.

Reels made of aluminum have been on the market and were at one time popular, particularly with those who had never used them, on the ground that they saved weight. This they undoubtedly did. But when this has been said, all that can be said in their favor has been said.

When this metal cost in the neighborhood of a dollar and a quarter an ounce and few were practically familiar with its characteristics, great hope was entertained of its future utility, could a cheap method of production be discovered. This has been done, and, thanks to the electric furnace, aluminum can now be had in any quantity and in almost any form at less than fifty cents a pound.

Nor were these hopes without reason. Its low specific gravity, but two and seven-tenths heavier than water, and its wide distribution, being the third most abundant of the elements, justified great expectations. It had been on the market but a short time as a commercial product when I heard it characterized by one of the most eminent chemists of Europe as “the metal of disappointment.”

For reels, at all events, it is a wretched metal. It is little harder than zinc, and consequently wholly unfit for the bearings for the axle of the spool of the reel. It can be soldered only with difficulty, and then not well soldered. Unless some method has been recently discovered, it cannot be electro-plated. It is very sensitive to alkaline solutions, sea water, and perspiration. It is miserable stuff to turn, drill, and tap, and chokes up files in an exasperating manner. I have made four reels of it, bushing the bearings for the axle of the spool with steel collars, and nearly broke my heart over them. After giving it up in despair a dozen times, I finally succeeded in blackening the outside plates with platinum bichloride. As long as they were kept in lavender, so to speak, they seemed to receive unqualified praise from my angling friends. But if rained on in the afternoon, they were covered the next morning with a white efflorescence disgusting to see.

In brief, as a reel-material aluminum merits little consideration.

But if alone and by itself aluminum is of little value to the angler, its alloys with copper are quite another matter. That composed of ninety parts of copper and
ten parts of aluminum some authorities assert to be the most rigid metal known. It is of a red-gold color, tarnishes with reluctance, is somewhat lighter than brass or german-silver, and will solder. For reels and rod-trimmings, now that it should be cheaper than german-silver, it seems well worthy serious consideration.

All are agreed that the reel for a single-handed fly-rod should be located below the hand, but there is some difference of opinion as to whether it should be at the extreme butt or farther up. If at the extreme butt, it is claimed to counterbalance the longer portion of the rod more efficiently, and for this reason it is generally there placed. For small fish this unquestionably answers well. But no man can stand the continued strain of playing a large fish at arm's-length. The butt is then supported against the body, and if the reel is located too low down, a blow in the stomach is received from the hand at every revolution of the reel-handle. For this reason it is my practice to secure the reel by inserting one end of the reel-plate under a band just below the hand, instead of below the butt-cap itself, fastening the other end by a sliding band in the usual manner. I then reduce the length of that part of the handle appropriated to the reel as much as possible, and yet retain sufficient length to insure convenient manipulation of the reel when the butt is supported against the body.

For the benefit of such as make their own reels, I give the following method of tempering the spring, taught me by one of the best tool-makers in this country. With nothing beyond the same verbal instructions here given to guide me, I have never failed to produce a spring of apparently perfect temper.

Having turned and filed my spring out of a plate of the best obtainable steel, about \( \frac{3}{4} \) of an inch thick, and drilled the screw holes, I next polish out every transverse scratch. After hardening the spring in water in the usual way, I heat some sperm-oil in a small vessel until it takes fire. Securing my spring to a wire, I submerge it in the burning oil until I think both are at the same temperature, and then withdraw it, ignite the adhering oil, and allow it to burn off. Having repeated this three times, I immediately swing it around my head until it is cold.