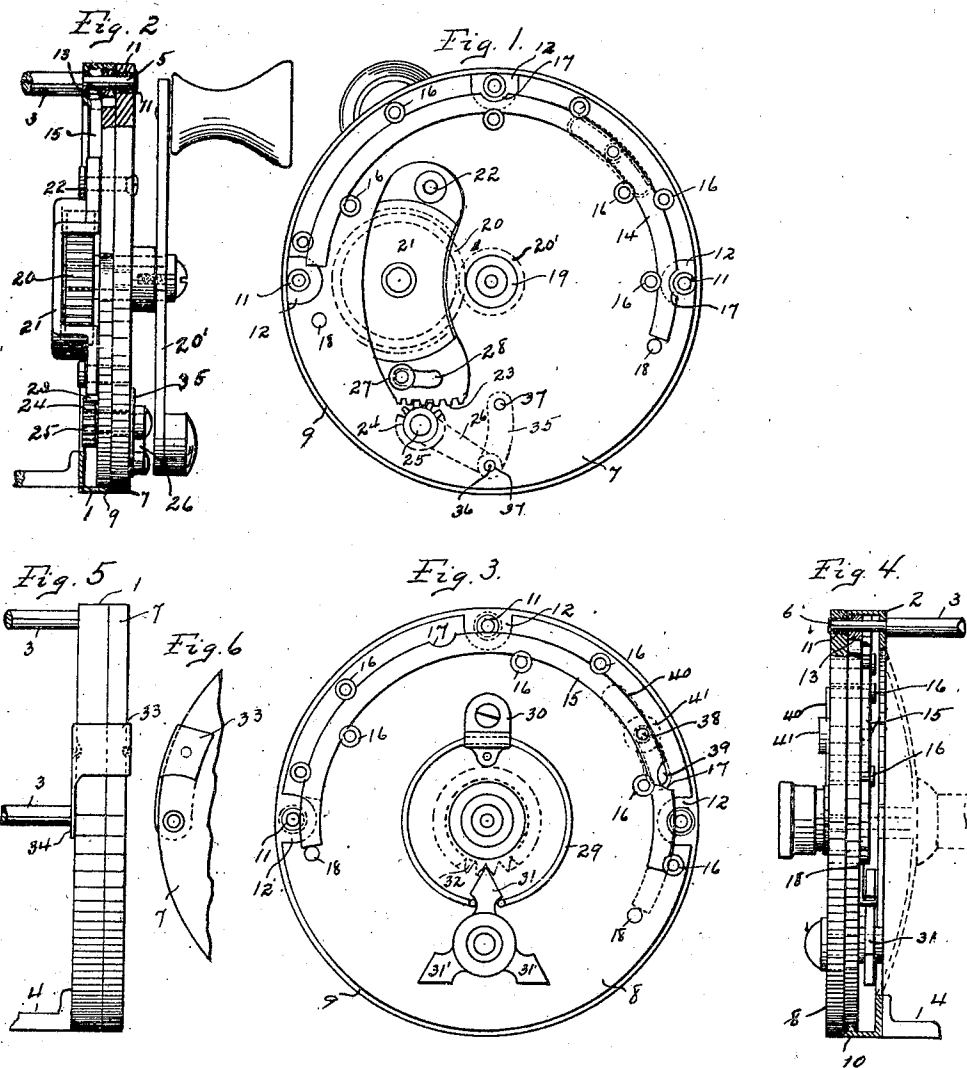


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C. TEUTSCH.
FISHING REEL.
FILED MAY 10, 1921.



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FISHING REEL.

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To all whom it may concern:

Be it known that I, CHARLES TEUTSCH, a citizen of the United States, residing in the city of Newark, county of Essex, and State of New Jersey, have invented a new and useful Improvement in Fishing Reels, of which the following is a specification.

The object of my invention is to provide improved "throw-off" mechanism, whereby the spool may be readily disconnected from the driving gear and so made into what has come to be known in the art as a "free-spool" reel.

Another object is to provide improved means for disconnecting the head- and back-plates from the reel frame, and for replacing and locking them in position.

Another object is to provide an improved form of frame so constructed as to be practically integral, and unusually rigid.

In the accompanying drawings forming a part of this specification,

Fig. 1 is a back plan view of my improved head plate, showing the locking ring for locking the plate to the frame.

Fig. 2 is a side elevation of the head plate, with the adjacent portion of the frame shown in section.

Fig. 3 is a plan of the inside of the back plate showing the locking ring for locking the plate to the frame; an improved form of click is also shown.

Fig. 4 is a side elevation of the back plate with the adjacent portion of the frame shown in section.

Figs. 5 and 6 are respectively side and front views of a modified form of locking device for locking the head and back plates to the frame.

The frame of the reel is made up of the head ring 1, the back ring 2, the spacing posts 3 and the foot plate 4. The rings 1 and 2 are alike in all respects; they are of L-shape in cross-section as shown, and are made as light as possible consistent with the requisite strength. The spacing posts, three in number, are made of metal rods, having the reduced ends as at 5 and 6, which are inserted in apertures in the rings 1, 2, where they are rigidly secured by brazing, soldering or welding. The ends 5, 6 of the posts extend somewhat beyond the outer edge of the rings 1, 2, so as to be flush with the face of the head plate 7 and back plate 8. These plates are made of vulcanized rubber, fibre, or any material suitable for the pur-

pose. They are each provided with apertures to receive the projecting ends 5, 6 of the posts 3. The plates are provided with the shoulders 9, and 10 respectively, which set against the respective outer edges of the rings 1 and 2. The apertures in the plates are all provided with the metal eyelets 11, which are spun over the plates both outside and inside. The material of the plates is cut away as at 12, around each of the eyelets, so as to provide space for the keepers 13, which are rigidly secured to the projecting ends 5 and 6, so that when assembled the inner faces of the keepers will be flush with the respective inner faces of the plates 7 and 8. As a means for locking the plates to the rings, I provide the half rings 14 and 15 upon the respective plates, securing them concentrically in sliding engagement therewith by the series of headed studs 16, which are inserted at intervals along the rings into the plates, as shown. The half rings 14 and 15 are of a diameter to engage the post ends 5 and 6 and when in the position shown in Fig. 3, they serve to engage beneath the keepers 13 to lock the plates to the rings respectively. Notches 17 are provided in the outer edges of the half rings, so that when they are shifted to the position shown in Fig. 1, these notches will register with the keepers, so that the plates will be released from the rings. Stop pins 18 are inserted in the plates, to limit the movement of the half rings to their locking and unlocking positions.

The head plate 7 carries the usual center bearing 19 for the spool pivot (not shown), and the gear 20, which latter is rotated by the crank 20' mounted upon the gear shaft outside the plate. The gear 20 is supported by the bridge 21, pivoted at 22 on the head plate; the bridge has several rack teeth 23 at its free end which mesh with the pinion 24, the latter mounted upon a short shaft 25 with a small crank 26 upon the outer end outside the plate. The turning of the crank through a short arc will obviously cause the bridge to shift and with it the gear 20 into and out of mesh with the pinion on the spool. The headed pin 27 is inserted into the plate through the slot 28 in the bridge, and serves to confine the bridge in place and limit its movement. In this manner the reel becomes what is known as a "free spool" reel.

In addition to the locking device as above

described, the back plate 8 carries the usual click or drag mechanism, which in the present instance comprises the double acting spring 29, confined in place by the clamp 30; the upturned ends of the spring bear upon opposite sides of the click 31, which is carried upon a short shaft mounted in the plate to slide radially so as to carry the point of the click into and out of engagement with the click wheel 32 on the end of the spool spindle. All of the click structure is well known in the art, with the exception that in the present instance, the click is provided with spare points 31', so that when one point becomes too worn to be effective, the spring 29 may be spread so as to free the point in use, the click given a part of a turn to bring another point into use, with the spring bearing upon it as shown.

In some cases, I may substitute for the head plate locking device above described, the form shown in Figs. 5 and 6. This consists of a U-shaped clamp 33, having an elongated shank 34 pivoted to one of the posts 3, so as to embrace both the ring 1 or 2, as shown. When the clamp is thrown back, the plate is freed from the ring. Registering indentations in the clamp, ring, and plate serve to hold the clamp in locking position against accidental displacement. Such a construction as just described is desirable upon what is known as bait casting reels, which are used in bait casting contests, when the quick separation of the parts of the reel is desirable for purposes of inspection or repair. When either of the plates is separated from the frame, the spool may be readily taken out.

If desired, an arc-shaped plate may be fastened to the head plate as at 35, so that the small crank 26 may bear upon it with the point 36 snapping into the indentations 37 in the plate 35, to hold the crank against accidental displacement.

As a convenient means for shifting the locking half ring concentrically about the head plate, I provide the plate with an arc-shaped slot 39, through which a pin 38 projects from the half ring 15, and on the end of said pin the button 41 is secured with the arc-shaped cover plate over the slot 39. The shifting of the button from one end of the slot to the other will correspondingly shift the ring 15 into and out of engagement with the keepers 13, and so lock and unlock the head and back plates.

I claim:

1. In a fishing reel, the combination of a flanged head ring, a head plate fitted thereto, frame posts projecting from said head ring, said head plate having marginal apertures for the reception of said posts, keepers upon said posts, a locking ring slidably mounted upon said head plate for engage-

ment with said keepers to lock said plate and ring together, a spool rotatably mounted in said head plate, a driving gear having a supporting bridge pivotally mounted upon said head plate and a hand operated pinion mounted upon said head plate for engagement with rack teeth upon said bridge for shifting said driving gear into and out of driving engagement with said spool.

2. In a fishing reel, the combination of a pair of flanged head rings, a plurality of spacing posts rigidly and permanently connecting said rings together to form a reel frame, head and back plates fitted into said frames, said plates each provided with apertures into which the projecting ends of said posts are inserted, locking rings rotatively mounted upon the inner faces of said plates respectively to slide into and out of engagement with said posts to lock said plates to said rings, a spool mounted to rotate in said bearings in the respective centers of said head and back plates, said spool having a pinion upon the spindle thereof, a bridge pivotally mounted at one of its ends upon the inner face of said head plate, a driving gear wheel carried by said bridge for engagement with said pinion, rack teeth upon the other end of said bridge and a hand operated pinion mounted upon the inner base of said head plate for engagement with said rack teeth to swing said bridge with its driving gear wheel into and out of engagement with said spool pinion.

3. In a fishing reel, the combination of a reel frame comprising a head ring and a back ring, spacing posts rigidly connecting said head and back rings, head and back plates respectively fitted to and in locking engagement with said head and back rings, a spool mounted to rotate in bearings in the respective centers of said head and back plates, said spool having a pinion upon the spindle thereof, a bridge pivotally mounted upon the inner face of said head plate, a driving gear wheel mounted upon said bridge for engagement with said pinion, rack teeth upon said bridge, a pinion mounted upon said head plate for engagement with said rack teeth, a crank upon the external face of said head plate and connected to said pinion for manually operating the same to swing said bridge with its driving wheel into and out of operative engagement with said spool pinion.

4. In a fishing reel, the combination of a reel frame, head and back plates in locking engagement respectively with the head and back rings of said frame, a spool mounted to rotate in bearings in the respective centers of said head and back plates and having a pinion upon the spindle thereof, a bridge pivotally mounted at one of its ends upon said head plate, a driving gear wheel carried

by said bridge for engagement with said pinion, rack teeth upon the other end of said bridge, and a hand operated pinion mounted upon said head plate for engagement with said rack teeth to swing said bridge with its driving gear wheel into and out of engagement with said spool pinion.

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therein, a driving gear having a supporting bridge pivotally mounted in said frame, a hand operated pinion upon said frame for engagement with rack teeth upon said bridge for shifting said driving gear into and out of driving engagement with said spool.

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5. In a fishing reel, the combination of a reel frame with a spool rotatively mounted

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