

[Document Name] Description

[Title] Reel Seat

[Technical Field]

[0001]

The present invention relates to a reel seat that is attached to a lightweight fishing rod such as a lure rod and a boat rod and used to attach and fix a reel.

[Background Art]

[0002]

Conventionally, on a fishing rod using a reel, a reel seat for attaching the reel is fixed, and as Patent Document 1 discloses for example, a tube-like reel seat attached and fixed on the outer circumference surface of the base rod is known. Patent Document 1 discloses the tube-like reel seat adapted for using a spinning reel, and its tube-like main body includes a first tube portion on the base end side and a second tube portion on the tip end side, wherein a stationary hood is disposed on the underside surface of the first tube portion, and an external thread is formed on the second tube portion with a mobile hood disposed on that area in such a manner that it is moved to the front and rear by a nut.

[0003]

This reel seat is integrally formed by injection-molding a hard resin or fiber-reinforced resin, and between the first tube portion and the second tube portion, a reel leg placement portion and a bridge portion having a curved concave portion on both sides are formed. The concave portion of the bridge portion is formed in such a manner that it is positioned outside, with respect to the radial direction, the rod inserted in the first tube portion and the second tube portion, so as to reduce the weight of the reel seat.

[Prior Art Documents]

[Patent Document]

[0004]

[Patent Document 1] Japanese Patent No. 6691842

[Summary]

[Solution to Problem]

[0005]

Like the reel seat disclosed in Patent Document 1, if the outer shape of the seat main body is hollowed to reduce the weight, the grip performance (quality of grip feel) is reduced. More specifically, the edge portion of the concave portion formed at the bridge portion is curved in such a manner that it is positioned below the rod when the spinning reel is attached, and thus, only some small area is available for the finger of the fisher to make contact when he/she grips it, reducing the grip performance. Furthermore, since the bridge portion is thin, its strength is not good enough as it is easily deformed when gripped tightly.

[0006]

Considering the afore-mentioned problems, an object of the present invention is to provide a reel seat having a reduced weight and excellent strength, which provides good grip performance when the fishing rod is gripped and held together with the fishing reel.

[Means for Solving Problems]

[0007]

To achieve this object, a reel seat according to the present invention comprises: a seat main body including: a reel leg placement portion for placing a reel leg of a fishing reel; a first tube portion including: a stationary hood formed on one end side, with respect to the axial direction, of the reel leg placement portion, and an insertion hole for a rod to be inserted and fixed; and a second tube portion including: a mobile hood disposed on the other end side, with respect to axial direction, of the reel leg placement portion in such a manner that it is movable along the axial direction, and an insertion hole for the rod to be inserted and fixed; the seat main body includes a bridge portion that connects the first tube portion and the second tube portion and is formed to extend away in the radial direction so as to cover the fixed rod; the bridge portion includes a concave portion provided on both sides of the

inserted and fixed rod; the concave portion is formed in such a manner that the most concave position of its edge portion defining the concave portion does not extend over, in a side view, the rod inserted and fixed in the insertion hole; and a reinforcement rib is formed on an inner surface of the bridge portion.

[0008]

When the reel seat of the structure described above is actually used for fishing, the bridge portion formed between the first tube portion and the second tube portion is gripped. More specifically, when a double-bearing reel is attached, the bridge portion is mainly gripped with the finger area making contact therewith, whereas when a spinning reel is attached, it is mainly gripped with the palm area making contact therewith. As described above, the bridge portion includes a concave portion on both sides of the rod inserted and fixed, and the concave portion is formed in such a manner that the most concave position of the edge portion defining the concave portion does not extend over, in a side view, the rod inserted and fixed in the insertion hole, and thus when the reel seat is gripped, some area is left for gripping, and the finger or palm of the fisher does not contact the cutout area (the edge portion defining the opening), allowing for improved grip performance. Also, the bridge portion includes a reinforcement rib formed on the inner surface side, and thus the bridge portion is hard to deform if gripped tightly, making it possible to reduce its thickness.

[Advantageous Effects of Invention]

[0009]

The present invention provides a reel seat having a reduced weight and excellent strength, which provides good grip performance when the fishing rod is gripped and held together with the fishing reel.

[Brief Description of Drawings]

[0010]

[Fig. 1] Fig. 1 illustrates a perspective view of a first embodiment of a reel seat according to the present invention.

[Fig. 2] Fig. 2(a) and 2(b) respectively illustrate a plan view and a side view of the reel seat of Fig. 1.

[Fig. 3] Fig. 3 illustrates a section view of the reel seat of Fig. 1, along the axial direction.

[Fig. 4] Figs. 4(a), 4(b), 4(c), 4(d), and 4(e) respectively illustrate a section view along line A-A of Fig. 3, a section view along line B-B of Fig. 3, a section view along line C-C of Fig. 3, a section view along line D-D of Fig. 3, and a section view along line E-E of Fig. 3.

[Fig. 5] Fig. 5 illustrates a second embodiment of the reel seat according to the present invention with Figs. 5(a) and 5(b) respectively illustrating its side view and its plan view (bottom view).

[Description of Embodiments]

[0011]

Now, embodiments of a reel seat according to the present invention will be specifically explained with reference to the accompanying drawings. Note that in the following explanation, the axial direction (front-rear direction), the top-bottom direction and the right-left direction (lateral direction) means the directions illustrated in Fig. 2.

[0012]

Figs. 1 to 4 illustrate a first embodiment of a reel seat according to the present invention, wherein Fig. 1 is its perspective view, Fig. 2(a) is its plan view, Fig. 2(b) is its side view, Fig. 3 is its section view along the axial direction, Fig. 4(a) is its section view along line A-A of Fig. 3, Fig. 4(b) is its section view along line B-B of Fig. 3, Fig. 4(c) is its section view along line C-C of Fig. 3, Fig. 4(d) is its section view along line D-D of Fig. 3, and Fig. 4(e) is its section view along line E-E of Fig. 3.

A reel seat 1 according to the present invention is fixed, by adhesion for example, to an outer circumference surface of a rod (base rod) 100 constituting a fishing rod, and in the present embodiment, is structured as a fishing reel for attaching and fixing a double-bearing reel for fishing. Thus,

a reel leg placement portion described below is positioned on an upper side. The structure of the fishing rod to which the reel seat is fixed is not limited and may be telescopic, a joint-type, a single piece rod, etc., and Fig. 1 illustrates a part of the fishing rod (a part of the base rod) without illustration of the whole structure.

[0013]

A seat main body 2 constituting the reel seat 1 includes: a reel leg placement portion 3, disposed on an upper side, for placing a reel leg of a fishing reel; and a pair of hood members that squeezes and fixes both sides, with respect to the axial direction, of the reel leg of the fishing reel placed on the reel leg placement portion 3. In the present embodiment, a stationary hood 12 is provided on a rear side, and a rotatable, mobile hood 22 is disposed on a front side in such a manner that it is movable in the axial direction. More specifically, the seat main body 2 includes a first tube portion 10 and a second tube portion 20 respectively formed on one end side (rear side) and the other end side (front side) of the axial direction of the reel leg placement portion 3, and the first tube portion 10 is provided with the stationary hood 12 and an insertion hole 10a for a rod 100 to be inserted and fixed, whereas the second tube portion 20 is provided with the mobile hood 22 disposed in such a manner that it is movable along the axial direction and an insertion hole 20a for the rod 100 to be inserted and fixed. The rod 100 is inserted in the insertion holes 10a, 20a, and its outer circumference surface is fixed by adhesive, for example.

[0014]

The seat main body 2 further includes a bridge portion 30 that connects the first tube portion 10 and the second tube portion 20, and the bridge portion 30 is formed to extend away in the radial direction so as to cover the fixed rod 100. The seat main body 2 of the present embodiment has a structure adapted for a double-bearing reel, and thus the bridge portion 30 is formed so as to cover the underside area of the rod inserted

and fixed in the insertion holes 10a, 20a, and with respect to the first tube portion 10 and the second tube portion 20, formed to extend away (produce a gap) in the radial direction from the outer circumference surface of the rod 100 when the rod is inserted and fixed in the insertion holes 10a, 20a.

[0015]

Specifically, the bridge portion 30 includes, in the axial direction, a swollen curved portion 30A (see Figs. 4(b) to 4(e)) that has a substantially semicircular cross section so as to cover the outer circumference surface of the underside of the rod 100 with a certain gap from both sides with respect to the radial direction of the inserted and fixed rod 100. Both sides of the bridge portion 30 have an upper end edge (edge portion) 30a that defines a concave portion 30a' which connects to the second tube portion 20, while being curved downward in a concave from both end edges 12b on the front side, which defines an opening 12a for receiving a reel leg in the stationary hood 12 formed on the first tube portion 10. The upper end edge 30a of both sides is formed to extend away from the outer circumference surface of the rod 100 in the right-left direction, and as Fig. 2(b) illustrates, a lowest end position (the most concave position of the concave portion) P1 is positioned on the rear side (the first tube portion side) of a middle position with respect to the axial direction of the bridge portion 30.

[0016]

Forming this bridge portion 30 between the first tube portion and the second tube portion allows for reduction of the weight of the reel seat. Thus, the reel leg placement portion 3 is formed of a placement portion 3a formed on a front end side of the first tube portion 10 and a placement portion 3b formed on a rear end side of the second tube portion 20, and is separated at a middle area (the area where the bridge portion 30 is formed). More specifically, the rear end side of the leg portion of the fishing reel is placed on the placement portion 3a, engaged in the opening 12a of the stationary hood 12, and its front end side is placed on the placement portion 3b and engaged, squeezed

and fixed in an opening 22a of the mobile hood 22 that is mobile in the axial direction.

[0017]

An external thread 20b is formed on the outer circumference surface of the front end portion of the second tube portion 20 of the seat main body 2. The mobile hood 22 is disposed on the front side of the reel leg placement portion 3b in such a manner that it is movable in the axial direction covering the second tube portion 20. The mobile hood 22 is engaged with a nut member 22A that is screwed with the external thread 20b, and moves in the axial direction when the nut member 22A is rotated. In this case, the external thread 20b is provided with a guide groove 20d that extends in a straight line in an axis-line direction at one or more points (in the present embodiment, two points at 180° to each other), and when the nut member 22A is rotated, the mobile hood 22 only slides in the axial direction without rotating. The front end surface of the seat main body 2 (the end surface of both sides of the front of the swollen curved portion 30A) is provided with a step 30B that projects laterally from both sides of the placement portion 3b, and the mobile hood 22, which is moved in the axial direction by the nut member 22A to be screwed with the external thread 20b, is regulated with respect to the movement toward the rear side of the axial direction, as a result of its end surface that defines the opening 22a making contact with the step 30B.

[0018]

With the structure described above, when a reel leg is placed on the reel leg placement portion 3 (3a, 3b), its rear leg portion is engaged in the opening 12a of the stationary hood 12, and then, when the nut member 22A is rotated to slide the mobile hood 22 to the stationary hood side, the front leg portion of the reel leg is engaged in the opening 22a of the mobile hood 22, which squeezes and fixes the reel leg between both the hoods 12, 22. The fishing reel attached and fixed between the hoods 12, 22 is removable by rotating the nut member 22A in the opposite direction.

[0019]

Furthermore, in the present embodiment, the seat main body 2 is provided with a trigger 15 for the fisher to hook with a finger when he/she grips and holds the seat main body together with the reel main body. The trigger 15 is formed on the first tube portion 10 of the seat main body 2 in such a manner that it projects to the opposite side of the stationary hood 12.

[0020]

The upper end edge 30a forms the concave portion 30a' of the bridge portion 30 on both sides, and the more it is concave downward, the more the weight of the reel seat is reduced, however, if it is too much concave, the grip performance and strength of the grip portion are reduced. Thus, in the present invention, the lowest end position (the most concave position of the concave portion) P1 of the concave portion does not, in a side view, not extend over the rod 100 inserted and fixed in the insertion holes 10a, 20a (not to be lower than the insertion holes 10a, 20a).

[0021]

With the concave portion 30a' formed on both sides of the bridge portion 30 as described above, the bridge portion 30 includes a curved shape (Figs. 4(b) to 4(d)) that swells outward in the radial direction in a section view that is perpendicular to the axial direction, and constitutes the swollen curved portion 30A with both the inner and outer surfaces projecting outward in a curved manner.

[0022]

The inner surface of the swollen curved portion 30A constituting the bridge portion 30 is provided with a reinforcement rib 35 to improve strength against crush. The reinforcement rib only needs to be formed on an area of the inner surface of the swollen curved portion 30A, however, if the fisher grips it too tightly, a high pressure is exerted on the lowest end area of the swollen curved portion 30A, and thus like the present embodiment, it is preferable to provide an axial direction rib at least at the center of the swollen curved

portion 30A, along the axial direction (hereafter, such an axial direction rib is referred to as the reinforcement rib 35).

[0023]

Forming the reinforcement rib 35 on the inner surface of the swollen curved portion 30A allows the swollen curved portion 30A to be thinner, and to reduce the overall weight if the surface shape of the swollen curved portion 30A is changed as required. In this case, the thickness of the swollen curved portion 30A (the bridge portion 30) and the reinforcement rib 35 is some 1.0 mm to 2.0 mm in order to maintain their strength while reducing their weight. As for the shape of the underside surface (surface shape) of the swollen curved portion 30A, as Figs. 2 (b) and 3 illustrate, it is preferable to be gradually swollen from the second tube portion 20 toward the first tube portion 10, and curved to be gradually concave from a position near the opposite position of the placement portion 3a, so as to obtain a curved concave portion 16 between it and the base area of the trigger 15. More specifically, as for the swollen amount of the bridge portion 30 (the swollen curved portion 30A), forming the base end side to be bigger than the tip end side allows for improvement in the grip performance of the reel seat 1 gripped together with the reel main body, and the curved concave portion 16 helps not to give uncomfortable feelings when the fisher puts his/her finger on the trigger 15.

[0024]

The reinforcement rib 35 preferably has a height that functions to guide the rod 100 inserted in the insertion holes 10a, 20a. Specifically, the reinforcement rib 35 is formed along the axial direction in such a manner that its upper end edge 35a has a height that matches with the opening edge of each of the insertion holes 10a, 20a, such that when the rod 100 is inserted in the reel seat 1, it is smoothly guided and easily penetrates through the first tube portion 10 and the second tube portion 20, while being stabilized at the area of the bridge portion 30.

[0025]

The seat main body 2 may be integrally formed by hard synthetic resin materials such as nylon and ABS, and plastic composite materials mixed with reinforcement fibers such as glass fiber and carbon fiber (FRP), to improve strength while reducing the weight.

[0026]

When actually used for fishing, the reel seat 1 described above is gripped by the fisher with his/her ring finger or middle finger put on the trigger 15, and the underside of the finger making contact with the bridge portion 30 (the swollen curved portion 30A) formed between the first tube portion 10 and the second tube portion 20. As described above, the bridge portion 30 includes the concave portion 30a' on both sides of the inserted and fixed rod 100, and the concave portion 30a' is formed in such a manner that the most concave position P1 of the upper end edge 30a of both sides defining the concave portion does not extend over, in a side view, the rod 100 inserted and fixed in the insertion holes 10a, 20a, and thus, when the fisher grips the reel seat, the grip performance is improved as some area is left for gripping. Furthermore, since the reinforcement rib 35 is formed on the inner surface side of the bridge portion 30, the weight of the bridge portion can be reduced by reducing its thickness, and at the same time, it becomes hard to deform if it is gripped tightly, allowing for effective reduction in its weight and improvement in its strength, and as a lightweight fishing rod, its handleability is improved as well.

[0027]

Note that the reel seat described above may separately include a soft member (e.g., urethane, EVA, thermoplastic elastomer, and rubber) that provides good grip performance, at an area where the finger of the fisher contacts when he/she grips it. For example, the nut member 22A may be fitted by one of such members, or a grip member may be fitted by one of the materials described above and fastened on the outer circumference surface of the area projecting from the rear of the stationary hood 12 of the first tube portion 10.

[0028]

The weight of the seat main body 2 of the structure described above may be reduced, as required, by forming a rib, hollow portion, cutout, or concave portion, etc., while maintaining its strength. For example, as Fig. 4(e) illustrates, the weight of the area where the placement portion 3a of the first tube portion 10 is formed may be reduced, while maintaining its strength, by connecting the area into which the rod is inserted and the swollen curved portion 30A by a plurality of radial direction ribs 18a, 18b and by forming a gap S between the ribs. Also, as Fig. 4(a) illustrates, strength of the area of the second tube portion 20 where the placement portion 3b is formed may be improved by forming reinforcement ribs 27, 28 on the outer circumference surface, as required. Such ribs, hollow portions, cutouts, dents, and projections are preferably formed on an area that does not affect the grip performance.

[0029]

Fig. 5 illustrates a second embodiment of the present invention, and Figs. 5(a) and 5(b) respectively illustrate a side view and a plan view (bottom view).

The reel seat of this embodiment is structured to attach a spinning reel, and the reel leg placement portion 3 (3a, 3b) faces downward for the spinning reel to be attached and fixed. Note that in Fig. 5, the same components as those of the first embodiment described above are given the same reference numerals.

[0030]

When a seat main body 2A of a reel seat 1A of the present embodiment is used, the reel leg placement portion 3, the stationary hood 12 and the mobile hood 22 face downward, and the bridge portion 30 is mainly gripped by a palm of the fisher from above, and thus, it is preferable to form with a diameter somewhat larger than that of the first embodiment to be easily gripped and held. Also, the upper end edge (edge portion) 30a forming the concave portion 30a' of the bridge portion 30 on both sides is formed in such a manner that the topmost end

position (the most convex position of the concave portion) P1 of the concave portion does not extend over, in a side view, the rod 100 inserted and fixed in the insertion hole (is not positioned above the insertion holes 10a, 20a).

The reel seat 1A of the structure described here also provides actions and advantageous effects similar to those of the embodiment described above.

[0031]

The embodiments of the present invention are explained here, however, the present invention should not be limited to these embodiments, and a variety of modifications are possible.

The shape of the reel seat 1 is not limited to those illustrated in the drawings, and a variety of modifications are possible. For example, as for the hood member for fixing the reel leg, the one on the rear side may be a mobile hood, and the structure of each hood member may be modified as required. Also, the reinforcement rib formed on the inner surface of the swollen curved portion 30A (the bridge portion 30) may extend in the lateral direction instead of the axial direction, for example, with some part crossed or formed into a lattice, and furthermore, a plurality of ribs that extend in the axial direction maybe formed. The height and thickness of the reinforcement rib may be changed as required as far as it does not interfere with the inserted rod. Also, the shape (swollen shape) of the bridge portion 30 (the swollen curved portion 30A) and the shape of the concave portion 30a' may be modified as required.

[Explanation of Reference Numerals]

[0032]

- 1 reel seat
- 2 seat main body
- 3 (3a, 3b) reel leg placement portion
- 10 first tube portion
- 12 stationary hood
- 20 second tube portion
- 22 mobile hood

30 bridge portion
30A swollen curved portion
30a upper end edge (edge portion)
30a' concave portion

[Document Name] Claims

[Claim 1]

A reel seat comprising:

a seat main body including:

a reel leg placement portion for placing a reel leg of a fishing reel;

a first tube portion including: a stationary hood formed on one end side, with respect to the axial direction, of the reel leg placement portion, and an insertion hole for a rod to be inserted and fixed; and

a second tube portion including: a mobile hood disposed on the other end side, with respect to axial direction, of the reel leg placement portion in such a manner that it is movable along the axial direction, and an insertion hole for the rod to be inserted and fixed; wherein

the seat main body includes a bridge portion that connects the first tube portion and the second tube portion and is formed to extend away in the radial direction so as to cover the fixed rod;

the bridge portion includes a concave portion provided on both sides of the inserted and fixed rod;

the concave portion is formed in such a manner that the most concave position of its edge portion defining the concave portion does not extend over, in a side view, the rod inserted and fixed in the insertion hole; and

a reinforcement rib is formed on an inner surface of the bridge portion.

[Claim 2]

The reel seat of claim 1, wherein the bridge portion includes a curved shape that swells out in the radial direction in a section view perpendicular to the axial direction, and is formed in such a manner that the swollen amount of the base end side of the rod inserted and fixed in the insertion hole is larger than that of the tip end side thereof.

[Claim 3]

The reel seat of claim 1 or 2, wherein the reinforcement rib includes an axial direction rib along the axial direction; and

the axial direction rib has a height providing a function to guide the rod inserted in the insertion hole.

[Claim 4]

The reel seat of any one of claims 1 to 3, wherein a trigger is formed on the opposite side of the reel leg placement portion of the first tube portion.

[Claim 5]

The reel seat of any one of claims 1 to 4, wherein the thickness of the bridge portion and the reinforcement rib is 1.0 mm to 2.0 mm.

[Claim 6]

A fishing rod to which the reel seat of any one of claims 1 to 5 is affixed.