

DESCRIPTION

[TITLE OF THE INVENTION] CABLE BODY ANCHORING FITTING

[Technical Field]

[0001]

This invention relates to a cable body anchoring fitting for anchoring a cable body such as a wire rope.

[Background Art]

[0002]

A fitting using a wedge is used as a fitting for anchoring a cable body such as a wire rope. Patent Document 1 discloses a technique related to such a fitting using a wedge (wedge clamp).

[Prior Art Publication]

[Patent Document]

[0003]

[Patent Document 1]

Japan Patent No. 6009611

[Summary of the Invention]

[Problems to be Solved by the Invention]

[0004]

As described in Patent Document 1, the wedge clamp (cable body anchoring fitting) disclosed therein exhibits excellent fastening force due to its configuration, which prevents slippage between the cable body and the wedge member when tension is applied to the cable body, and in which the cable body and the wedge member, as an integral unit, enter a restraining member (cylindrical member) to achieve a higher fastening force.

Cable body anchoring fittings utilizing the principle of the wedge clamp disclosed in Patent Document 1 offer excellent workability and, as

mentioned above, achieve high anchoring efficiency, leading to their increased use in a wide range of applications.

With this diversification of applications, there is a growing demand for cable body anchoring fittings that are even more user-friendly.

[0005]

In view of the above, the present invention relates to a wedge-type fitting (cable body anchoring fitting) for securing cable bodies such as wire ropes, and aims to provide a cable body anchoring fitting that is easier to use.

[Means for Solving the Problem]

[0006]

(Configuration 1)

A cable body anchoring fitting including:

a fitting member including a cylindrical member through which a cable body is inserted;

a driving member including a wedge member inserted into the cylindrical member and abutting the cable body in the cylindrical member;

a first side surface portion provided on a first side surface of the cylindrical member at which the driving member is inserted, and a second side surface portion provided on a second side surface that is opposite the first side surface;

a first cable body retention notch portion which is a notch provided in the first side surface portion and through which the cable body is received and inserted, and having a notch depth greater than the diameter of the cable body; and

a second cable body retention notch portion

provided in the second side surface portion and through which the cable body is received and inserted.

[0007]

(Configuration 2)

The cable body anchoring fitting described in Configuration 1, in which the first cable body retention notch portion has a portion where the notch width of the first cable body retention notch portion is formed narrower than the diameter of the cable body.

[0008]

(Configuration 3)

The cable body anchoring fitting described in Configuration 2, in which the cylindrical member has a cylindrical member side V-shaped groove formed therein configured to contact the cable body in two faces, in which the cable body anchoring fitting is configured such that the cable body is positioned in the cylindrical member side V-shaped groove when the cable body inserted through the cylindrical member is inserted deeper into the first cable body retention notch portion than the portion where the notch width is formed narrower than a diameter of the cable body.

[0009]

(Configuration 4)

The cable body anchoring fitting described in any one of Configurations 1 to 3, in which the fitting member includes a cylindrical member, and a V-shaped groove member having a cylindrical member side V-shaped groove that is formed separately from the cylindrical member, disposed inside the cylindrical member, and configured to contact the cable body at two faces.

[0010]

(Configuration 5)

The cable body anchoring fitting described in any one of Configurations 1 to 4, in which the first cable body retention notch portion has a depth to accommodate two cable bodies.

[0011]

(Configuration 6)

The cable body anchoring fitting described in Configuration 5, in which the first cable body retention notch portion has a depth to accommodate a length of a radius or more of a second one of the cable body.

[0012]

(Configuration 7)

The cable body anchoring fitting described in any of Configurations 1 to 6, in which the driving member has a driving member side V-shaped groove formed therein configured to contact the cable body in two faces, in which, in a rear side of the driving member to a driving direction, the driving member side V-shaped groove is formed shallow or does not exist.

[0013]

(Configuration 8)

The cable body anchoring fitting described in any one of Configurations 1 to 7, in which the fitting member is provided with an engaging portion that slidably and rotatably engages with the driving member, the driving member is provided with a slide groove that receives the engaging portion, and the cable body anchoring fitting is configured so that an engaging portion introduction opening is formed in the slide

groove that can introduce and withdraw the engaging portion by rotating the driving member with respect to the fitting member such that the driving member is attached to and detached from the fitting member.

[0014]

(Configuration 9)

The cable body anchoring fitting described in Configuration 8, in which a portion of the side surface of the fitting member facing the surface of the driving member opposite to the side in contact with the cable body is notched, so that the driving member has greater rotation angle.

[Effect of the Invention]

[0015]

According to the present invention, a fitting (cable body anchoring fitting) using a wedge to anchor a cable body, such as a wire rope, is provided, thereby providing a cable body anchoring fitting that is easier to use.

[Brief Description of the Drawings]

[0016]

[Fig. 1] Fig. 1 is a diagram showing a cable body anchoring fitting of an embodiment of the present invention.

[Fig. 2] Fig. 2 is diagram showing a cable body anchoring fitting of the embodiment.

[Fig. 3] Fig. 3 shows a V-shaped groove member arranged within the fitting member of the embodiment.

[Fig. 4] Fig. 4 shows a driving member of the embodiment.

[Fig. 5] Fig. 5 is a schematic diagram showing the cable body (wire rope) inserted into the cable body

anchoring fitting of the embodiment.

[Fig. 6] Fig. 6 is an explanatory diagram illustrating the removal of the driving member.

[Embodiment for Carrying Out the Invention]

[0017]

Herebelow is a detailed description of an embodiment of the present invention with reference to the drawings. It should be noted that the following embodiment is merely one form to implement the present invention and does not limit the scope of the invention.

[0018]

Fig. 1 and Fig. 2 show a cable body anchoring fitting according to an embodiment of the present invention. Specifically, Fig. 1(a) shows a perspective view from the front, Fig. 1(b) shows a perspective view from the rear, Fig. 2(a) shows a side view, Fig. 2(b) shows a front view, Fig. 2(c) shows a rear view, and Fig. 2(d) shows a bottom view. Note that in Fig. 2(b) (front view) and Fig. 2(c) (rear view), the driving member 12 is omitted (showing only the fitting member 11) to clarify the structure.

Fig. 5 is a schematic diagram showing the state in which a cable body (wire rope) is inserted into the cable body anchoring fitting of this embodiment (conceptual diagram illustrating the positional relationship of each component in a state where the driving member has not been driven in (generating almost no fastening force)), Fig. 5(a) is a schematic cross-sectional view along the longitudinal direction, and Fig. 5(b) is a schematic view in a cross-section perpendicular to the longitudinal direction.

For the sake of clarity, the forward side along a driving direction of the driving member 12 (the left side in Fig. 2(a)) is referred to as "front surface" while the opposite side (the right side in Fig. 2(a), where driving member 12 is inserted) is referred to as "rear surface". The side of the driving member 12 that contacts the fitting member (the bottom side in Fig. 2(a)) is referred to as "bottom surface" and the opposite side (the top side in Fig. 2(a)) is referred to as "top surface".

[0019]

As shown in Fig. 5(a), the cable body anchoring fitting 1 of this embodiment is for eye splicing the end portion of a cable body to anchor the end of the cable body such as a wire rope WR.

A cable body anchoring fitting 1 of this embodiment includes:

a fitting member 11 including a cylindrical member through which a cable body is inserted;

a driving member 12 including a wedge member inserted into the cylindrical member of the fitting member 11 and abutting the cable body in the cylindrical member;

a first side surface portion 111 provided on the rear side (the first side surface into which the driving member 12 of the cylindrical member is inserted), and a second side surface portion 112 provided on the front side (the second side surface, which is the opposite side of the first side surface),

a first cable body retention notch portion 1111 which is a U-shaped notch provided in the first side surface portion 1111 and through which the cable body

is received and inserted, having a notch depth greater than a diameter of the cable body; and

a second cable body retention notch portion 1121 which is a U-shaped notch provided in the second side surface portion 112 and through which the cable body is received and inserted.

The wedge member of the driving member 12 and the cable body are inserted into the cylindrical member of the fitting member 11, and by the driving member 12 being driven (by being driven from the state shown in Fig. 5(a) toward the left side of the drawing), the cable body is restrained by the pressure generated based on the wedge shape of the driving member. Since this basic function and the configuration therefor are the same as those of the wedge clamp disclosed in Patent Document 1, the explanation thereof will be hereafter omitted or simplified.

[0020]

As will be described in detail below, the cable body anchoring fitting 1 of this embodiment is a compact fitting used for small-diameter cable bodies (e.g., wire ropes with a diameter of 2 mm or less). The first side surface portion 111 and the second side surface portion 112 having the first and second cable body retention notch portions 1111, 1121 hold the cable body in place, thereby improving the workability of fastening operation of the cable body and ensuring more secure fastening. To fabricate structural elements such as the first and second cable body retention notch portions 1111, 1121 with high precision, a sheet that is cut or pressed is bent to form the cylindrical member of the fitting member 11,

and the V-shaped groove formed inside the cylindrical member is formed as a separate component. This enables precise fabrication of the compact fitting member 11 that includes the first side surface portion 111 and the second side surface portion 112, which include the V-shaped groove as an internal structure and have first and second cable body retention notch portions 1111, 1121 provided at positions facing the front and rear sides of the groove.

[0021]

The fitting member 11 includes a tapered cylindrical member and restrains the driving member 12 and cable body such as a wire rope WR. As the driving member 12 and the cable body enter the tapered internal space of the cylindrical member of the fitting member 11, strong frictional force is generated between the respective components, thereby restraining the cable body.

In this function, to achieve effective restraining force to the cable body, a V-shaped groove (cylindrical member side V-shaped groove) is formed on the inner surface of the cylindrical member of the fitting member 11 to contact the cable body at two faces. Since the V-shaped groove itself is similar to the wedge clamp disclosed in Patent Document 1, a description of the V-shaped groove itself is omitted.

As mentioned above, in this embodiment, the fitting member 11 includes a cylindrical member formed by bending (and welding) a sheet that has been cut or pressed, and a V-shaped groove member 113, which is formed separately from the cylindrical member and arranged inside the cylindrical member.

[0022]

Fig. 3 is a perspective view showing the V-shaped groove member 113.

The V-shaped groove member 113 has a V-shaped groove portion 1131, which is the aforementioned "V-shaped groove", and is arranged on the inner side of the upper surface of the cylindrical member of the fitting member 11 such that the V-shaped groove portion 1131 faces downward. This forms a V-shaped groove in the inner side of the upper surface of the cylindrical member that contacts the cable body at two faces.

In this embodiment, the V-shaped groove member 113 is fixed (welded) inside the cylindrical member of the fitting member 11; however, the present invention is not limited thereto, and the V-shaped groove member 113 may also be unfixed (e.g., placed inside the cylindrical member as needed). Furthermore, the fixing method is not limited to welding, but also may be bonded by an adhesive.

[0023]

The cylindrical member of the fitting member 11 has a basic configuration including both side surfaces, a top surface, and a bottom surface, with a cross-sectional shape that is substantially rectangular in a cross-section perpendicular to the driving direction and tapers toward the front, forming a tubular shape. The first side surface portion 111 is provided on the rear side of the cylindrical member, and the second side surface portion 112 is provided on the front side.

[0024]

The first side surface portion 111 is provided on

the rear side surface of the cylindrical member of the fitting member 11, on its upper side (with the lower side left open so that the driving member 12 can be inserted from the rear side surface of the cylindrical member).

A first cable body retention notch portion 1111, which is a U-shaped (or inverted U-shaped) notch for receiving and inserting therein a cable body such as a wire rope WR, is formed in the first side surface portion 111. In this embodiment, the first cable body retention notch portion 1111 has a catching portion 11111 formed at the midpoint of the notch depth, where the notch width is narrower than the diameter of the cable body. As can be understood from Fig. 5(b), it is configured to lightly catch the wire rope WR when the first wire rope WR is inserted all the way into the first cable body retention notch portion 1111.

As shown in Fig. 5(b), the first cable body retention notch portion 1111 of this embodiment has a depth to accommodate two cable bodies, and has a depth to accommodate greater than or equal to the length of the radius of the second cable body (wire rope WR).

The first side surface portion 111 is located opposite the rear end face of the V-shaped groove member 113 inside the cylindrical member, and as shown in Fig. 5(b), it is configured such that when the first wire rope WR is inserted all the way into the first cable body retention notch portion 1111 and caught by the catching portion 11111, the wire rope WR is positioned within the V-shaped groove portion 1131 of the V-shaped groove member 113. In other words, "it is configured such that when the cable body inserted

into the cylindrical member is inserted deeper than the position where the notch width is formed narrower than the diameter of the cable body relative to the cable body retention notch portion of the first side surface, the cable body is positioned within the V-shaped groove on the side of the cylindrical member".

[0025]

The second side surface portion 112 is provided on the upper side of the front side surface of the cylindrical member of the fitting member 11 (with the lower side left open to facilitate the insertion of the cable body into the cylindrical member).

A second cable body retention notch portion 1121, which is a U-shaped (or inverted U-shaped) notch for receiving and inserting therein a cable body such as a wire rope WR, is formed in the second side surface portion 112.

The second side surface portion 112 is positioned opposite the front end face of the V-shaped groove member 113 inside the cylindrical member, and is configured such that when the wire rope WR is inserted all the way into the second cable body retention notch portion 1121, the wire rope WR is positioned within the V-shaped groove portion 1131 of the V-shaped groove member 113.

The second cable body retention notch portion 1121 of this embodiment is formed with a depth to accommodate a length of a diameter or more of the cable body, and similar to the first cable body retention notch portion 1111, includes a catching portion where the notch width is formed to be narrower than the diameter of the cable body; however, the

present invention is not limited thereto, and the second cable body retention notch portion only needs to be formed with a depth to accommodate a length of a radius or more of the cable body.

In this embodiment, the second side surface portion 112 is shown as covering approximately the upper half of the front side surface of the cylindrical member; however, as long as the second cable body retention notch portion is formed with a hole through which two cable bodies can pass, the second side surface portion may cover the entire front side of the cylindrical member.

[0026]

Windows (holes) 114 are formed in both side surfaces of the cylindrical member of the fitting member 11. The windows 114 are holes to allow the driven driving member 12 to be moved (released) by prying with a tool such as a lever (tool such as spud wrench), and can also be used to check the fastening status of the cable body (the state of the driving member 12 and the cable body inside the cylindrical member). Note that while this example shows the windows 114 formed in both side surfaces, it is also acceptable to form the window 114 in only one side surface or in the bottom surface (or to omit window 114).

A projection (engaging portion) 117, which protrudes toward the inner surface, is formed on the lower rear portion of each side surface of the cylindrical member. The projection 117 engages with a slide groove 123 of the driving member 12, described below, to slidably engage the driving member 12

relative to the cylindrical member. The projection 117 also functions to enable the rotational movement of driving member 12 as a pivot point.

A third cable body retention notch portion 115 is formed on the front side of the bottom surface of the cylindrical member of the fitting member 11. As shown in Fig. 5(a), the third cable body retention notch portion 115 engages one end of the cable body which has been eye-spliced, and holds the cable body in position to be centered in the width direction (left-right direction in Fig. 2(b)) (to be properly positioned with respect to the V-shaped groove of the driving member).

The rear portion of the bottom surface of the cylindrical member of the fitting member 11 is formed with an opening 116, thereby opening a portion of the bottom surface of the cylindrical member. This increases the rotation angle of the driving member 12 with respect to the projection 117 as a pivot point.

As described above, in the fitting member 11 of this embodiment, both side surfaces, the top surface, and the bottom surface of the cylindrical member of the fitting member 11, and the first side surface portion 111 and the second side surface portion 112 are integrally formed by cutting or pressing a single sheet (stainless steel sheet). By bending each of both side portions, top surface, and bottom surface portion of the single sheet, a cylindrical shape is created, and by welding the joints required to form the cylindrical shape (and bending the first side surface portion 111 and the second side surface portion 112), the cylindrical member is formed. During the cutting

or pressing process, various parts such as the windows 114 and projections 117 are also formed.

[0027]

Fig. 4 shows the driving member 12, specifically, Fig. 4(a) is a perspective view from the front of the top surface; Fig. 4(b) is a perspective view from the front of the bottom surface; and Fig. 4(c) is a side view.

In the side view, the driving member 12 has a wedge shape between the bottom surface portion 122 and the top surface portion (V-shaped groove 121). When this wedge shaped portion is driven into the interior of the cylindrical member of the fitting member 11 together with the cable body, the resulting pressure generates frictional force between the fitting member 11, the driving member 12, and the cable body, thereby fastened to the cable body.

The driving member 12 has formed on its upper surface side a V-shaped groove (driving member side V-shaped groove) 121 configured to contact the cable body at two faces. Since the V-shaped groove itself provided on this wedge-shaped member is similar to the wedge clamp disclosed in Patent Document 1, a detailed description of the V-shaped groove itself is omitted.

The driving member 12 has a cut portion 1211 at the upper part of its rear end, formed such that the driving member side V-shaped groove 121 is shallow or does not exist. The cut portion 1211 is formed such that, in the range facing the first side surface portion 111 on the upper surface of the driving member 12, the cut portion 1211 is substantially parallel to the bottom surface portion 122. Consequently, even if

the driving member 12 is driven (i.e., even if the driving member 12 moves upward relative to the fitting member 11), the driving member 12 is configured not to interfere with the first side surface portion 111. Note that, while this example illustrates a cut portion 1211 formed in a planar manner substantially parallel to the bottom surface portion 122, the present invention is not limited thereto; and the cut portion may be configured such that the driving member 12 does not interfere with the first side surface portion even if the driving member is driven (even if the driving member moves relatively upward with respect to the fitting member).

[0028]

On both side surfaces of the driving member 12, a slide groove 123 is formed that slidably engages with the projection 117 formed on the inner surface of the cylindrical member of the fitting member 11.

The slide groove 123 is formed to extend in the front-to-back direction to be substantially parallel to the bottom surface portion 122.

The front side of the slide groove 123 terminates near the front end of the driving member 12, and thus, when the driving member 12 is slid rearward, the projection 117 of the cylindrical member engages with the terminal portion of the front side of the slide groove 123, preventing the driving member 12 from falling out.

In this embodiment, the slide groove 123 has a projection introduction opening (engaging portion introduction opening) 1231 that opens toward the bottom surface of the driving member 12. The

projection 117 can be inserted into or removed from the slide groove 123 through the projection introduction opening 1231, thereby allowing the driving member 12 to be attached to or detached from the fitting member 11.

[0029]

Fig. 6 is an illustrative diagram showing the removal of the driving member 12 from the fitting member 11.

Fig. 6(a) shows the state in which the driving member 12 is attached to the fitting member 11 (state in which the projection 117 formed on the inner surface of the cylindrical member of the fitting member 11 is slidably engaged with the slide groove 123).

When the driving member 12 is moved rearward, as described above, the projection 117 is engaged by the slide groove 123 being terminated at the front end, preventing it from further retraction. In this state (Fig. 6(a)), rotating the driving member 12 with the projection 117 as the pivot point results in the state shown in Fig. 6(b). Due to the presence of the opening 116 in the bottom surface of the cylindrical member, the driving member 12 can be rotated through a large range.

Next, as shown in Figs. 6(b) and 6(c), sliding the driving member 12 diagonally upward guides the projection 117 into the projection introduction opening 1231. By disengaging the projection 117 from the slide groove 123 through the projection introduction opening 1231, the driving member 12 can be removed, as shown in Fig. 6(d).

The driving member 12 can be attached to the fitting member 11 by following the reverse of the above procedure.

As can be understood from the above, this allows for the simple and efficient attachment and removal of the driving member 12 from the fitting member 11, while also preventing the driving member 12 from being accidentally detached from the fitting member 11.

[0030]

A protrusion 124 (ridge-like portion within the slide groove) is formed within the slide groove 123 for the projection 117 to pass over with a light resistance.

From the state shown in Fig. 6(a), when the driving member 12 is slid in the driving direction, the projection 117 comes into contact with the protrusion 124, and sliding further until the projection 117 passes over the protrusion 124 results in the state shown in Fig. 6(e).

In the state shown in Fig. 6(e), the rotational motion to remove the driving member 12 as described above cannot be performed. The protrusion 124 functions to maintain the state shown in Fig. 6(e) by generating a certain amount of resistance against the sliding of the driving member 12 toward the rear. This further prevents the driving member 12 from being accidentally detached from the fitting member 11.

[0031]

As can be understood from the above, according to the cable body anchoring fitting 1 of this embodiment, since the driving member 12 can be driven while the cable body such as a wire rope WR is held in place by

the first cable body retention notch portion 1111 and the second cable body retention notch portion 1121 (with the cable body positioned within the V-shaped groove), workability is improved, which facilitates proper fastening operations, making it extremely user-friendly.

In conventional cable body anchoring fittings, in attempting to fasten a thin wire rope of, for example, 2 mm or less, due to the thin wire rope being flexible, the wire rope passed through the cylindrical body may twist, and may not be properly positioned within the V-shaped groove. If the wire rope is not properly positioned within the V-shaped groove, required fastening force cannot be achieved, and therefore, it is necessary to position the wire rope correctly within the V-shaped groove. However, since the cable body anchoring fitting itself is small when used to fasten thin wire ropes of 2 mm or less, positioning the wire rope passed through the cylindrical body in the proper position (while holding to prevent shifting) while driving the driving member was often a cumbersome task.

In contrast, according to the cable body anchoring fitting 1 of this embodiment, the driving member 12 can be driven while the cable body is held in place by the first cable body retention notch portion 1111 and the second cable body retention notch portion 1121 (while the cable body is positioned within the V-shaped groove), thereby improving workability.

[0032]

In the cable body anchoring fitting 1 of this

embodiment, the cylindrical member of the fitting member 11 is formed by bending a cut or pressed sheet, and the V-shaped groove portion formed inside the cylindrical member is formed as a separate body. This allows the V-shaped groove to be provided as an internal structure of the cylindrical member, and a compact fitting member 11 can be formed with high precision, which includes a first side surface portion 111 and a second side surface portion 112 that have first and second cable body retention notch portions 1111 and 1121 provided at positions facing the front and rear surfaces.

[0033]

Note that, the example given in this embodiment is a compact cable body anchoring fitting used for small-diameter wire ropes (e.g., wire ropes with a diameter of 2 mm or less); however, the present invention is not limited thereto, and the concepts regarding the first side surface portion 111 and the second side surface portion 112 having the first and second cable body retention notch portions 1111 and 1121, and the concepts regarding the cylindrical member being formed by bending a sheet, and the V-shaped groove member being formed separately from the cylindrical member can be applied to cable body anchoring fittings of any size corresponding to cable bodies of any thickness.

While this embodiment uses a cylindrical member formed by bending a sheet as an example, the present invention is not limited thereto; for example, the cylindrical member may be formed by joining multiple sheets. If precision and strength permit, the

cylindrical member may be cast (in this case, the V-shaped groove member and the first and second side surface portions having the first and second cable body retention notch portions may also be integrally formed).

[0034]

As can be understood from the above description, the cable body anchoring fitting 1 of this embodiment is configured such that "with the engaging portion introduction opening (projection introduction opening) formed in the slide groove that can slidably introduce or remove the engaging portion (projection) to or from the slide groove by rotating the driving member relative to the fitting member, the driving member is configured to be attached to or detached from the fitting member"; and "is configured such that the rotation angle of the driving member is increased by having a portion of the side surface (bottom surface) of the fitting member, which faces the surface of the driving member opposite to the side in contact with the cable body, notched". These concepts regarding the detachable structure of the driving member relative to the fitting member are not limited to being performed together (simultaneously) with the concepts described above regarding the first side surface portion 111 and the second side surface portion 112 having the first and second cable body retention notch portions 1111 and 1121, as well as the concepts regarding the cylindrical member being formed by bending a sheet and the V-shaped groove member being formed separately from the cylindrical member; but rather, each of these concepts may be applied individually to the cable body

anchoring fitting.

[0035]

In this embodiment, the first cable body retention notch portion 1111 is shown as having a depth to accommodate a length of a radius or more of the second cable body; however, the first cable body retention notch portion only needs to have a notch depth that is deeper than a length of a diameter of the cable body (i.e., a depth to accommodate a length of a diameter or more of the first cable body), and it may also be formed to accommodate a length of a diameter or more of the second cable body (i.e., having a notch depth of twice a length of a diameter of the cable body). Additionally, "second catching portion having a notch width formed narrower than the diameter of the cable body" may further be provided to lightly catch the second cable body.

The second cable body retention notch portion may also be formed to have a depth to accommodate a length of a radius or more of the second cable body, or capable of accommodating a length of a diameter or more of the second cable body; furthermore, may be provided with a catching portion that allows the second cable body to be lightly caught.

[0036]

In this embodiment, the example includes both of a first side surface portion 111 having a first cable body retention notch portion 1111 and a second side surface portion 112 having a second cable body retention notch portion 1121; however, the present invention is not limited thereto, and may include only a first side surface portion having a first cable body

retention notch portion (with only the first side surface portion having the first cable body retention notch portion, it is possible to achieve a certain degree of the functional effects described above)

[0037]

Furthermore, regarding the V-shaped groove in the cable body anchoring fitting 1 of the embodiment, which contacts the cable body at two faces, slipping between the groove and the cable body being prevented by setting the two faces to have a predetermined angle therebetween is described in Patent Document 1. While this configuration is highly preferable, it is not essential for the application of the present invention.

[0038]

Furthermore, while the embodiment illustrates an example in which the driving member consists generally only of a wedge member and the fitting member consists generally only of a cylindrical member, the present invention is not limited thereto. It is sufficient for the invention to include a driving member having a wedge member and a fitting member that engages with the driving member to restrain the cable body by means of pressure generated based on the wedge shape of the driving member (each member may additionally have other functions or structural parts).

[Explanation of Reference Numerals]

[0039]

1...cable body anchoring fitting

11...fitting member

111...first side surface portion

1111...first cable body retention notch portion

- 112...second side surface portion
 - 1121...second cable body retention notch portion
- 113...V-shaped groove member (cylindrical member side V-shaped groove)
 - 117...projection (engaging portion)
- 12...driving member
 - 121...V-shaped groove on the driving member side
 - 123...slide groove
 - 1231...projection introduction opening (engaging portion introduction opening)

CLAIMS

[Claim 1]

A cable body anchoring fitting comprising:

a fitting member including a cylindrical member through which a cable body is inserted;

a driving member including a wedge member inserted into the cylindrical member and abutting the cable body in the cylindrical member;

a first side surface portion provided on a first side surface of the cylindrical member at which the driving member is inserted, and a second side surface portion provided on a second side surface that is opposite the first side surface;

a first cable body retention notch portion which is a notch provided in the first side surface portion and through which the cable body is received and inserted, and having a notch depth greater than the diameter of the cable body; and

a second cable body retention notch portion provided in the second side surface portion and through which the cable body is received and inserted.

[Claim 2]

The cable body anchoring fitting described in claim 1, wherein the first cable body retention notch portion has a portion where a notch width of the first cable body retention notch portion is formed narrower than the diameter of the cable body.

[Claim 3]

The cable body anchoring fitting described in claim 2, wherein the cylindrical member has a cylindrical member side V-shaped groove formed therein configured to contact the cable body in two faces, in

which the cable body anchoring fitting is configured such that the cable body is positioned in the cylindrical member side V-shaped groove when the cable body inserted through the cylindrical member is inserted deeper into the first cable body retention notch portion than the portion where the notch width is formed narrower than the diameter of the cable body.

[Claim 4]

The cable body anchoring fitting described in claim 1, wherein the fitting member includes a cylindrical member, and a V-shaped groove member having a cylindrical member side V-shaped groove that is formed separately from the cylindrical member, disposed inside the cylindrical member, and configured to contact the cable body at two faces.

[Claim 5]

The cable body anchoring fitting described in any one of claims 1 to 4, wherein the first cable body retention notch portion has a depth to accommodate two cable bodies.

[Claim 6]

The cable body anchoring fitting described in claim 5, wherein the first cable body retention notch portion has a depth to accommodate a length of a radius or more of a second one of the cable body.

[Claim 7]

The cable body anchoring fitting described in claim 1, wherein the driving member has a driving member side V-shaped groove formed therein configured to contact the cable body in two faces, wherein, in a rear side of the driving member to a driving direction, the driving member side V-shaped groove is formed

shallow or does not exist.

[Claim 8]

The cable body anchoring fitting described in claim 1, wherein the fitting member is provided with an engaging portion that slidably and rotatably engages with the driving member, the driving member is provided with a slide groove that receives the engaging portion, and the cable body anchoring fitting is configured so that an engaging portion introduction opening is formed in the slide groove that can introduce and withdraw the engaging portion by rotating the driving member with respect to the fitting member such that the driving member is attached to and detached from the fitting member.

[Claim 9]

The cable body anchoring fitting described in claim 8, wherein a portion of the side surface of the fitting member facing the surface of the driving member opposite to the side in contact with the cable body is notched, so that the driving member is configured to have greater rotation angle.