

July 26, 1960

H. E. HANDLEY

2,946,562

MOORING REEL

Filed Feb. 14, 1956

2 Sheets-Sheet 1

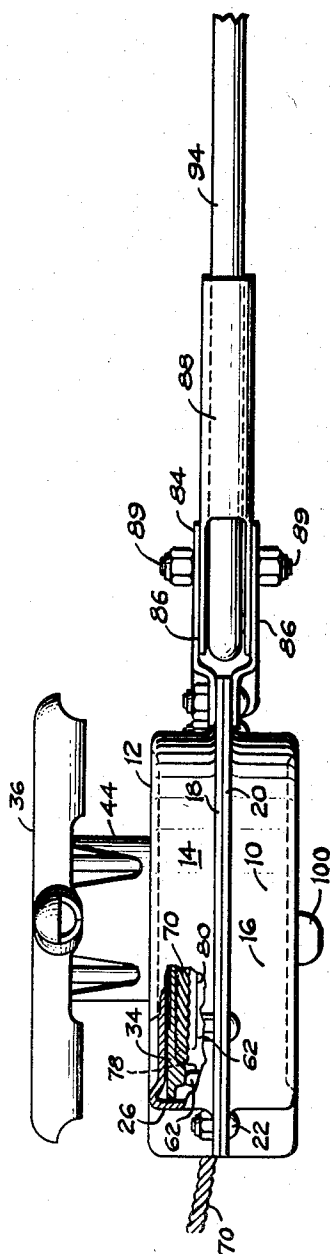


Fig. I

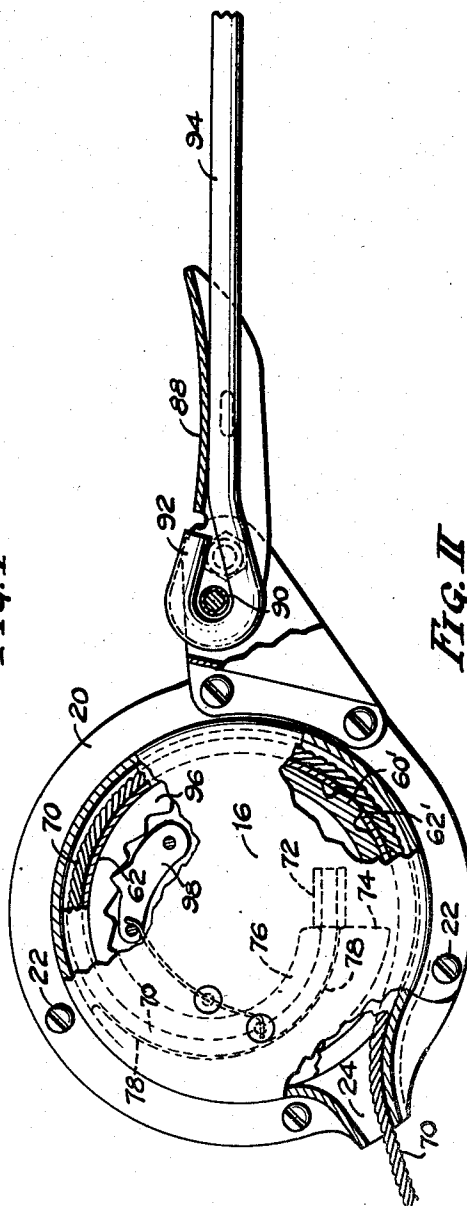


Fig. II

INVENTOR

Harold E. Handley

BY *Lawson M. Bluman*

ATTORNEY

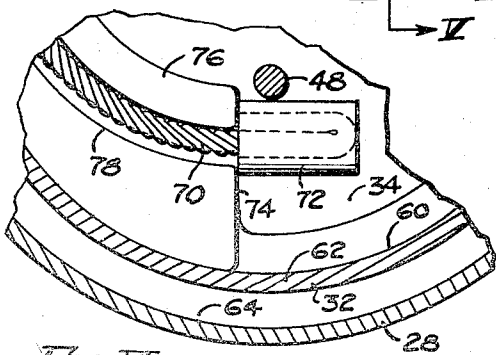
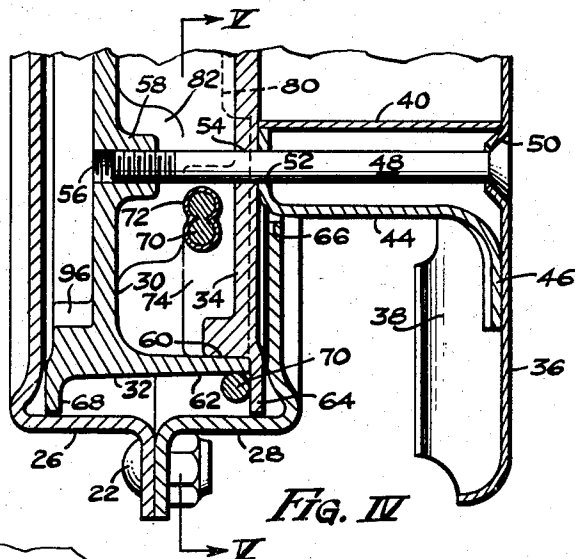
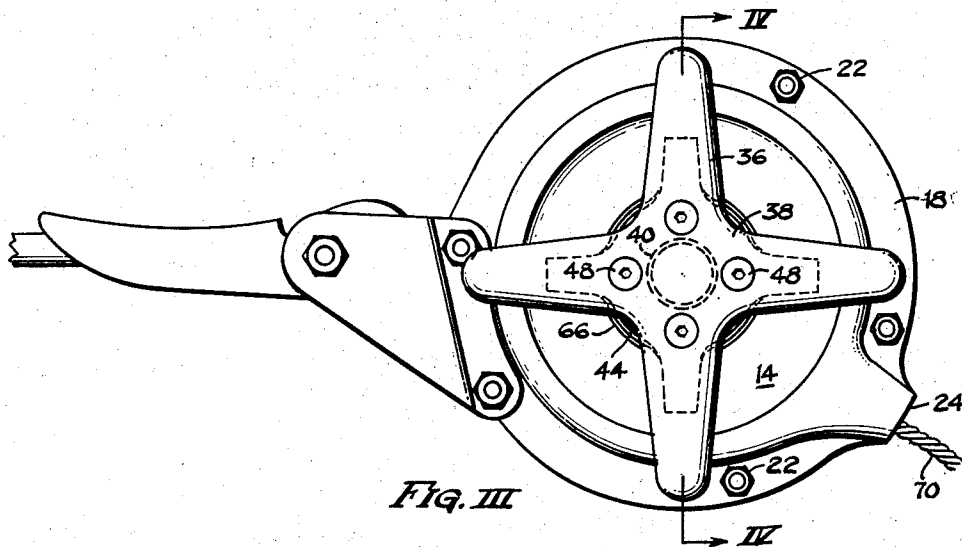
July 26, 1960

H. E. HANDLEY
MOORING REEL

2,946,562

Filed Feb. 14, 1956

2 Sheets-Sheet 2



INVENTOR

Harold E. Handley

BY

Lawrence F. Boorman

ATTORNEY

2,946,562

MOORING REEL

Harold E. Handley, Jackson, Mich., assignor to Handley Brown Heater Company, Jackson, Mich., a corporation of Michigan

Filed Feb. 14, 1956, Ser. No. 565,386

3 Claims. (Cl. 254-161)

The present invention relates to improvements in cable tightening and reeling devices being an improvement upon that type of device disclosed in United States Patent No. 2,586,048.

It is an object of the invention to provide a device of the above described type capable of being used in connection with heavy duty mooring yet is relatively light in construction and subject to being economically manufactured.

Another object of the invention is to provide a device of the described type in which the cable reel has a bearing within the casing structure of maximum diameter.

A further object resides in providing a device of the described type in which a substantial length of cable may be level wound and both the reel structure and the casing are relatively free of axial pressure tending to rupture the casing structure.

A still further object of the present invention resides in the novel manner in which the reel structure is made and the manner in which the end of the cable is anchored and the turns of the cable received on the drum portion.

These and other objects and advantages residing in the invention will more fully appear from the following detailed specification and appended claims.

In the drawings,

Fig. 1 is a top view of the device with the casing broken away to show the manner in which the cable is fed upon the drum of the reel.

Fig. 2 is a side elevational view of Fig. 1 with the end of the cable and its guide structure being shown in dotted outline.

Fig. 3 is a view similar to Fig. 2 taken from the opposite side,

Fig. 4 is a partial view in cross-section taken on line IV-IV of Fig. 3, and

Fig. 5 is a fragmentary view taken on line V-V of Fig. 4 showing the anchoring of the cable end in the sheave portion of the reel.

Referring to the drawings, my improved heavy duty cable tightening and reeling device 10 comprises a casing 12 having two generally similar portions 14 and 16 with complimentary radial flanges 18 and 20 secured together by circumferentially spaced bolts 22. Except at the cable discharge opening 24, the portions 14 and 16 have complimentary annular axial flanges 26 and 28 which define a bearing, of maximum diameter within the confines of the casing 12, for the cable reel 30.

The cable reel 30 is preferably of cast construction and comprises a first portion 32, a second portion 34, and a hand wheel portion 36. As shown, the hand wheel portion 36 is of stamped sheet metal construction having a spider portion 38, presenting four spokes and inner and outer annular spacing members 40 and 44, respectively, of which the member 44 may be welded or otherwise secured to portion 38 at 46. Screws 48 are received in circumferentially spaced openings 50 in the portion 38 and extend through axially aligned openings 52 and 54 in the member 44 and second portion 34, respectively,

for screw threaded engagement with tapped holes 56 in the bosses 58.

As more clearly shown in Fig. 4, the second portion 34 has an annular pilot portion 60 upon which the axial flange portion 62 of the first portion 32 has a sliding fit. When the screws 48 are tightened, the portion 62 is drawn toward the radial flange portion 64 of the second portion 34 to rigidly assemble the reel cable 30 comprising the first, second and hand wheel portions 32, 34 and 36, respectively. The opening 66 in the casing portion 16 receives the outer spacing member 44 with clearance to permit the cable reel 30 to be readily rotated within the casing 12 with the annular radial flange portion 64 of the second portion 34 and the annular radial flange portion 68 of the first portion 32 having a free running fit within the cylindrical bearing defined by the axial flange portions 26 and 28. A lug 60' on the pilot portion 60 registers with notches 62' in the flange 62 to interlock the component parts 33 and 34 of the reel 30 against relative rotation and aligns the holes 54 and 56.

The cable 70 has an anchoring ferrule 72 attached to its inner end, the ferrule 72 abutting the shoulder 74 defined by a boss 76 of the second portion 34. Boss 76 is of generally tapering shape extending from a maximum radial width adjacent the shoulder 74 to a minimum radial width at the point at which the outwardly spiraling cable groove 78 defined in the radial face of the boss 76 intersects the annular pilot portion 60. At this point of intersection, the axial flange portion 62 has a relieved portion 80, as shown in Fig. 1, to permit the cable 70 to pass and be wound one or more turns upon the outer cylindrical face of the flange portion 62 shown in Fig. 4. The boss 82 on the first portion 32 is disposed in opposed relation to the groove 78 to retain the cable 70 in the groove 78. The cable 70 extends out the opening 24 and will be equipped with a hook or other suitable attachment structure.

The tightening structure 84 may take any suitable form and constitutes no material part of the present invention. As shown, parallel ears 86 are attached to the flanges 18 and 20. A sheet metal lever 88 is disposed between the ears 86 and pivoted on studs 89 carried by the ears 86. The pin 90 carried by the lever 88 is engaged in the eye 92 of the tension rod 94, the other end of which is usually attached to a fixed part in the ground, or the like. By actuating the lever 88 the pin 90 may be swung from one side of the axis of the studs 89 to the other to tighten and loosen the cable 70.

Before the lever 88 is swung into the tightening position of Figs. 1 and 2 the hand wheel portion 36 is rotated about its axis to effect a preliminary tightening of the cable 70 by winding one or more turns of the same upon the reel structure 30. To maintain this preliminary tightening of the cable 70, the inner face of the drum portion 32 is provided with an annular ratchet portion 96 with which a pawl 98 carried by the casing portion 16 engages to lock the reel 30 against rotation in a cable loosening direction. Thereafter, the final tightening of the cable 70 is effected by the lever 88. To loosen the cable, the lever 88 is first actuated and then a button 100, attached to the pawl 98 through an opening in the casing portion, is actuated to depress the pawl 98 and permit the cable 70 to be unwound from the reel 30.

I claim:

1. In a mooring reel of the type described, a casing having a cable discharge opening therein, cable reel structure disposed in said casing and having an annular portion upon which the cable is wound, a hand wheel attached to said reel for winding the cable thereon to effect a preliminary take up on the cable, a cable having

its inner end anchored within the interior of said reel, an opening defined in said annular portion of said reel through which said cable end, to be wound upon said annular portion and discharged through said opening in said casing, is passed, said reel being in the form of two parts one of which is piloted and rigidly fixed against relative rotation upon the other, anchoring and guide structure for said cable inner end defined by said parts interiorly of said annular portion of said reel, said hand wheel abutting one of said parts, means extending between said hand wheel and the other of said parts for attaching said hand wheel and said reel parts together into a unit, said reel having spaced radial flanges having circular peripheries upon opposite sides of said annular portion, said casing being defined in part by axial flange portions enclosing said annular portion of said reel, said axial flange portions defining a cylindrical bearing surface complementary to the periphery of said radial flanges for giving relative rotational support to said reel through said radial flanges.

2. In a mooring reel of the type described, a casing, reel structure rotatably supported in said casing and having a first portion and a second portion, said first and second portions having annular parts thereof in telescoping engagement with one another, said first portion having an axial flange portion, structure upon said first and second portions located interiorly of said axial flange portion and defining cable anchoring and guide structure, a cable having one end disposed interiorly of said axial flange portion within said reel and having the inner end thereof anchored and guided interiorly of said axial flange, an opening in said axial flange through which said cable extends to be wound upon said axial flange, a side opening in said casing, a hand wheel extending through said side opening and attached to said reel

for rotating the same within said casing to wind said cable upon said axial flange, said first and second portions including spaced radial flanges having circular peripheries, said casing being defined in part by axial cylindrical flange portions enclosing in spaced relation said axial flange of said reel, said axial flange portion of said casing defining a cylindrical bearing surface complementary to the periphery of said radial flanges giving rotational support to said reel through said radial flanges.

3. In a mooring reel of the type described, a casing having a peripheral cable discharge opening in one side thereof, reel structure disposed in said casing and rotatably supported therein to effect a preliminary take up on the cable, a side opening in said casing, a hand wheel for rotating the said reel and extending through said side opening and attached to said reel, said casing having axial cylindrical flange portions defining the peripheral portion of said casing, said reel having radial flange portions having cylindrical peripheries defining the peripheral portion of said reel, said axial flange portions of said casing defining a cylindrical bearing surface complementary to the periphery of said radial flanges giving rotational support to said reel through said radial flanges.

References Cited in the file of this patent

UNITED STATES PATENTS

2,367,214	Hedge	Jan. 16, 1945
2,545,613	Gabel	Mar. 20, 1951
2,586,048	Hyatt	Feb. 19, 1952
2,822,992	Moulden	Feb. 11, 1958

FOREIGN PATENTS

658,802	Great Britain	Oct. 10, 1951
---------	---------------	---------------