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VESSEL TOWING ASSEMBLY

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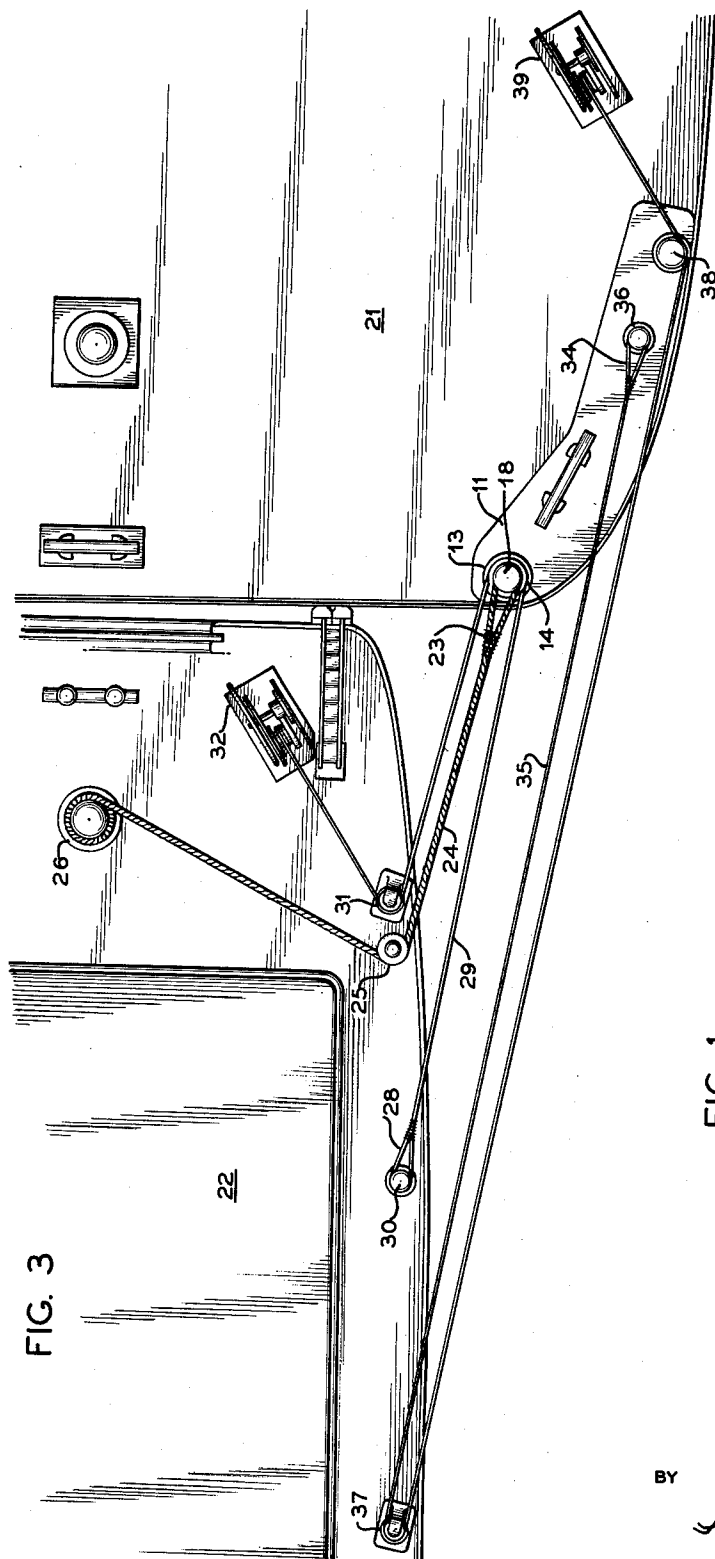


FIG. 3

FIG. 2

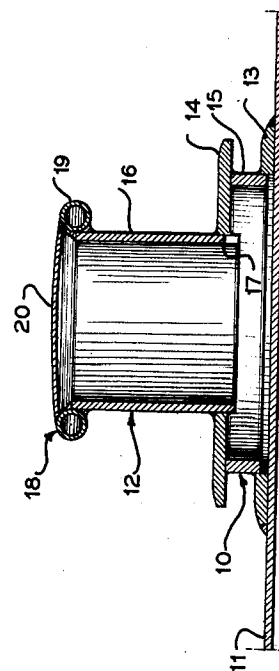
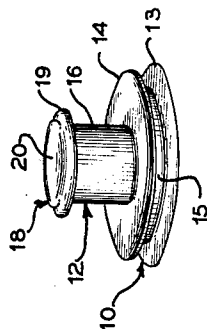


FIG. 1



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VESSEL TOWING ASSEMBLY

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This invention relates to marine transportation and more particularly to that form in which two or more vessels are coupled.

In inland waterway shipping it is frequently necessary to couple barges together or to couple a towboat to a barge, the towboat generally being used behind the barge in order to move it along the waterway. In transportation of this nature it is customary to lash together a plurality of vessels. In the course of a voyage from one point to another it may become necessary because of passage through a lock that the vessels be rearranged, thus necessitating uncoupling and recoupling; also certain vessels may reach their destination before others in the group. Because of the bulk and weight of the vessels and the exigencies of movement on a waterway it is necessary that the vessels be firmly coupled together. On the other hand it is desirable that the time and expense of coupling and uncoupling be held to a minimum.

In coupling marine vessels, as for example a barge to a towboat or barges together, it is the practice to employ lashing which engages members fixed to the adjacent vessels. For example, in the case of a barge which is to be pushed by a towboat, lashing is employed on the starboard and port sides of the vessels from the stern of the barge to the bow of the towboat. The lashing on each side is comparable and similarly positioned to that on the other side in order that the relative positions of the vessels will remain the same after coupling.

When the two vessels are brought together it is customary to loop manila rope over a bitt at the stern of the barge and to bring it back around a roller on the bow of the towboat and to a power capstan, this being carried out preferably simultaneously on each side of the vessel. This temporary lashing initially positions the two vessels in proper position for more permanent lashing. It is then customary to employ wire rope adjacent to the manila rope, one such wire rope being disposed very close to the manila rope in order to substantially duplicate its coupling action. Another wire rope is attached further along the side toward the bow of the barge and toward the stern of the towboat in order to provide greater leverage against relative turning movement between the vessels.

Heretofore, inasmuch as the wire rope that is positioned immediately after the manila rope has not been aligned with the manila rope, it has been necessary to employ more runs of wire rope and consequently more devices on the decks of the vessels for engagement therewith. The invention however includes an improved coupling member around which both the manila rope and the wire rope may be engaged at the same time in order that the direction of pull of the wire rope will correspond to that of the manila rope, thus simplifying the lashing of the vessels.

As a result of using the improved coupling member a simplified lashing arrangement may be employed which affords numerous advantages.

Accordingly, it is an object of the present invention

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to provide a coupling member for use on a vessel which is particularly adapted to expedite the coupling and uncoupling of vessels.

A further object is to provide a combination bitt for use on a vessel which is adapted to receive two loops of lashing in substantial alignment and to permit either to be removed without interference from the other.

A further object is to provide a novel arrangement of lashing for coupling a pair of vessels, which is simpler to employ, uses less material, and requires less time for coupling and uncoupling.

These and other objects of the invention will become apparent from the following description in conjunction with the accompanying drawing in which:

Fig. 1 is a perspective of a combination bitt embodying my invention;

Fig. 2 is a vertical section of the device as shown in Fig. 1; and

Fig. 3 is a plan view illustrating the use of the combination bitt with the improved lashing arrangement.

Briefly stated the invention includes a novel coupling member adapted to engage a plurality of lashings simultaneously, and a simplified lashing arrangement obtainable through the use of the bitt.

Referring particularly to Figs. 1 and 2, the improved coupling member includes a combination bitt having a portion 10 of large diameter and by means of which the bitt may be permanently attached to the deck 11 of a vessel and has a portion 12 of small diameter intimately joined thereto. The portion 10 includes a base plate or ring 13 beveled on its upper peripheral surface and attachable to the deck of a vessel such as a barge 21 and spaced from an opposed plate member 14. The portion 10 of large diameter is formed of a ring 15 rigidly attached to the plates 13 and 14, the space therebetween and around the ring 15 providing a groove adapted to receive a wire cable.

The bitt portion 12 is of cylindrical shape 16 rigidly attached at one end to the plate 14. The plate 14 has a centrally apertured portion 17 for receiving the lower end of the portion of cylindrical shape 16. The upper end of the portion 16 has an enlarged portion or head 18 defined by an annulus or ring shaped pipe member 19 which extends around the upper end of the cylindrical portion 16.

A convex end plate 20 attached to the member 18 closes the end of the cylinder 16 and provides a smooth outwardly bowed surface over which a loop of rope may easily be slipped or applied.

In the use of my combination bitt it is contemplated that the eye or loop on the end of a length of rope may be placed over the portion 12 of the bitt for temporary lashing, the other end being fastened on an adjoining vessel. A wire cable may then be engaged over the enlarged portion 10 of the bitt and drawn tight to exert force in the same direction as the already secured rope.

In the use of my combination bitt, and referring more particularly to Fig. 3, in the lashing of the barge 21 to the towboat 22 the eye or loop end 23 of the length of rope 24 is placed over the portion 12 of the bitt and the rope is looped around a roller chock 25 on the towboat and drawn tight by means of the power capstan 26. All operations of lashing are carried on at each side of the vessels substantially simultaneously.

The initial coupling of the vessels is carried out with suitable cable such as rope inasmuch as it is relatively easy to manipulate manually during the initial stage of maneuvering the vessels together in the desired position. After the temporary lashing is secured the more permanent lashing is applied. This may be a cable of wire.

In accordance with the present invention, the eye or loop 28 of wire cable 29 is applied to a bitt 30 spaced

aft of the bow behind the roller chock 25. The wire cable is then trained around the large diameter portion 10 of the combination bitt, and brought back around the after portion of a roller chock 31 on the deck of the towboat, which chock is positioned forwardly of the roller chock 25, from which chock 31 the wire cable is engaged with a power operated winch 32 of conventional construction. The winch 32 on each side of the towboat may then be drawn tight without danger of changing the relative position of the vessels inasmuch as the wire cable acts to draw the vessels together along substantially the same line as the rope which is already in place.

At this stage of the lashing the vessels are securely and more permanently coupled together. However, in order to afford greater leverage against turning, additional lashings are applied to cooperate with that already in place.

In the drawing, a loop or eye 34 of wire cable 35 is placed over a button bitt 36 spaced forwardly of the combination bitt. The cable is then trained around a roller chock 37, spaced substantially rearwardly of the bitt 30 on the towboat, and back around a fairhead 38 on the barge, forwardly of the bitt 36, and then to a power operated winch 39. Tightening of the wire cable 35 completes the lashing of the vessels. The rope 24 may then be removed without interference from any of the other lashings in order that it may be available for other use.

It should be observed that the more permanent type lashing described requires only four lengths of cable, two on each side of the vessel, and is simple to apply. Without the use of my novel combination bitt and lashing arrangement, however, it has been the practice heretofore to use a lashing having eight lengths of cable on each side of the vessels.

Through the use of the combination bitt, two cables of different materials may be used in engagement with the same bitt and either of them may be readily removed without interference from the other. The combination bitt is sturdy and simple to manufacture and use.

Accordingly, the invention includes a combination bitt having a grooved portion, for rigid attachment to the deck of a vessel and a second portion of smaller diameter axially aligned with the first of greater axial length and of less diameter. The combination bitt is adapted to have a temporary lashing engaged with its second portion of smaller diameter and a more permanent type with its first portion. It is also particularly adapted for use with the simplified lashing arrangement described above, by means of which towboats, barges, and the like may be easily and simply coupled and uncoupled with the use of less cable, a fewer number of engaging members for the cable on the decks of the vessels, and with the consequent expenditure of less time in coupling and uncoupling operations.

It will be apparent to those skilled in the art that various changes may be made in the embodiment disclosed without departing from the spirit and scope of the invention, and therefore the invention is not limited to the specific embodiment described and shown, but only as appears in the appended claims.

What is claimed is:

1. A combination bitt comprising a first substantially plane ring, for attachment to the deck of a vessel, a first hollow cylindrical member within the ring and secured thereto, a second substantially plane ring having an outer diameter greater than the first cylindrical member and an inner diameter substantially less than the inner diameter of the first ring, said second ring being fixedly secured in spaced parallel relation with respect to said first ring for receiving a bight of a wire rope therebetween, a second cylindrical member of less diameter than said first cylindrical member positioned with one end in the opening in said second ring and fixedly secured thereto, and an annular abutment secured to the other end of said

second cylindrical member for retaining a loop of a rope on said second cylindrical member.

2. A tow comprising a pair of vessels, a combination bitt having a wire cable engaging portion of large diameter and a manila rope engaging portion of a diameter appreciably less than the diameter of the cable engaging portion to facilitate removal of the manila rope fixed to one vessel with the large diameter portion adjacent the deck, said portions being coaxial and separated by a flange, a manila rope having an eye at one end arranged with the eye around said smaller diameter portion of the bitt, said flange comprising a substantially plane ring projecting outwardly from said large diameter portion to retain the cable against axial displacement, a roller chock mounted on the other vessel with the manila rope engaging the same, means on said other vessel to which the other end of the rope is secured for producing a pull on said rope, a conventional bitt fixed on said other vessel to one side of said roller chock, a wire cable having an eye at one end fixed with its eye around said conventional bitt on said other vessel, said wire cable extending from said conventional bitt to the said larger diameter portion of said combination bitt and back to said other vessel, a second roller chock on said other vessel on the opposite side of said manila rope from said conventional bitt, and means on said other vessel for producing a pull on said wire cable.

3. A tow comprising a pair of vessels, a combination bitt having a wire cable engaging portion of large diameter and a manila rope engaging portion of a diameter appreciably less than the diameter of the cable engaging portion to facilitate removal of the manila rope fixed to one vessel with the large diameter portion adjacent the deck, said portions being coaxial and separated by a flange, a manila rope having an eye at one end arranged with the eye around said smaller diameter portion of the bitt, said flange comprising a substantially plane ring projecting outwardly from said large diameter portion to retain the cable against axial displacement, a roller chock mounted on the other vessel with the manila rope engaging the same, means on said other vessel to which the other end of the rope is secured for producing a pull on said rope, a conventional bitt fixed on said other vessel to one side of said roller chock, a wire cable having an eye at one end fixed with its eye around said conventional bitt on said other vessel, said wire cable extending from said conventional bitt to the said larger diameter portion of said combination bitt and back to said other vessel, a second roller chock on said other vessel on the opposite side of said manila rope from said conventional bitt, and means on said other vessel for producing a pull on said wire cable, and further lashing means for reinforcing said rope and wire cable, said rope and said wire cable being so arranged that the runs thereof are generally parallel and either the rope or the cable may be removed without removing the other.

4. A bitt comprising a base plate for attachment to the deck of a vessel, a first cylinder extending up from said plate a height of at least the diameter of a wire rope to be used therewith, a first flange comprising a substantially plane ring projecting outwardly from said first cylinder a sufficient distance to retain the wire rope used therewith against axial displacement, a second cylinder of substantially less diameter than said first cylinder and projecting upwardly from said first flange, said second cylinder being generally coaxial with the first cylinder, and a second flange on the upper end of said second cylinder projecting outwardly a lesser distance than said first flange to retain a manila rope on said second cylinder, the diameter of said second cylinder being appreciably less than the diameter of the first cylinder, whereby said flanges and different diameters of the cylinders preclude the wire rope and manila rope from entanglement.

5. The invention according to claim 4 in which said

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first flange is beveled at its upper surface thereof and said base plate projects outwardly of said first flange and is beveled on its upper surface to guide the wire rope into contact with said first cylinder.

References Cited in the file of this patent

UNITED STATES PATENTS

100,197	Shepardson	Feb. 22, 1870	
238,671	Frick	Mar. 8, 1881	10

5

320,670
1,356,218
2,533,972

10,994
122,357
327,939
635,569
646,463

6

McCabe	June 23, 1885
Nowland	Oct. 19, 1920
Symonds et al.	Dec. 12, 1950

FOREIGN PATENTS

Great Britain	1898
Great Britain	Jan. 23, 1919
Great Britain	Apr. 17, 1930
Germany	Sept. 19, 1936
Great Britain	Nov. 22, 1950