Dec. 31, 1957 H. A. GUTHANS 2,818,229

CONNECTING AND TYING DEVICES

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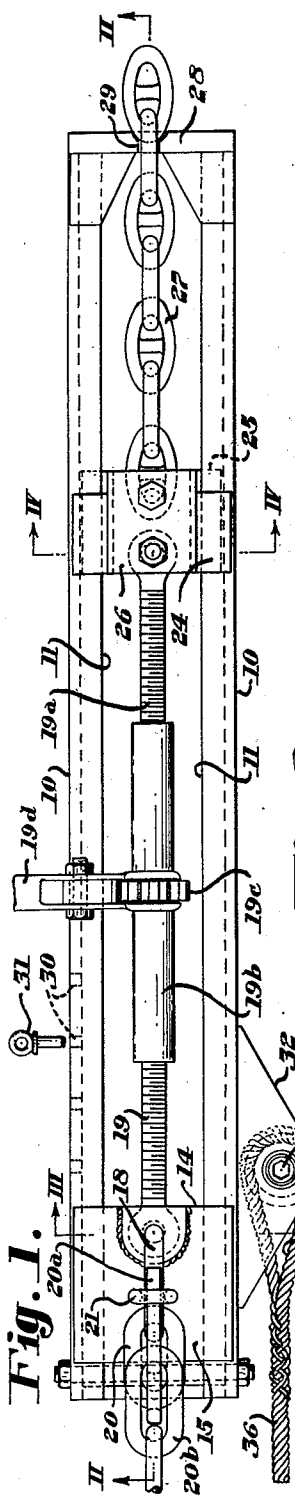


Fig. 1.

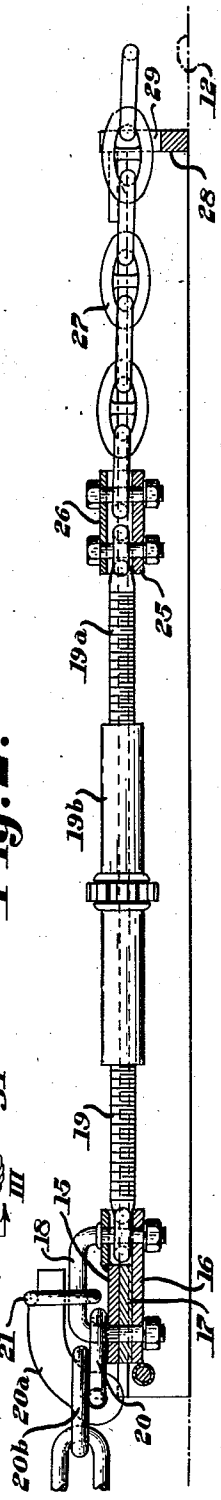


Fig. 2.

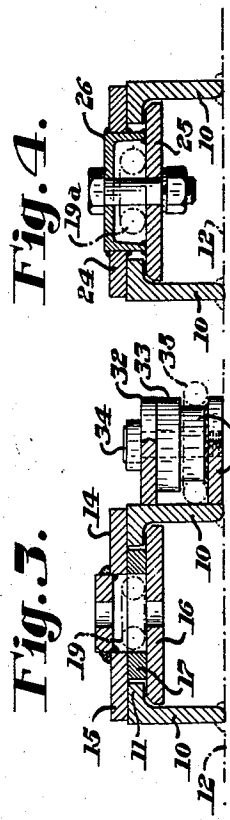


Fig. 3.

Fig. 4.

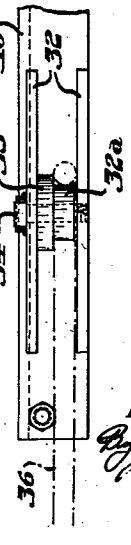


Fig. 5.

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CONNECTING AND TYING DEVICES

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3 Claims. (Cl. 254—67)

This invention relates to connecting and tying devices and particularly to a variable length connecting and tying means. The invention has particular applicability to barge and vessel connectors such as are used for example in connecting barges when fleeted together for towing purposes. The practice heretofore followed in connecting barges has been to fasten the barges together with a cable and to tighten the ends of the cable together by a type of a portable turnbuckle commonly called a ratchet. This practice was dangerous since the ratchets when subjected to undue strain would break, releasing the cable and at times injuring the barge tenders or seamen who happen to be working in the area. The practice was, moreover, time consuming and expensive because of losses and high maintenance and repair on the movable type of ratchet. The ratchets heretofore used are, moreover, awkward to readjust and frequently a sufficient strain on the cable is difficult, if not impossible, to obtain without several readjustments. The portable ratchet is inherently dangerous because the parts tend to fly in all directions at high velocities if they break under strain. It is also dangerous to release the conventional type of portable ratchet when there is strain on the rigging such as happens in emergencies. The ratchet, being a loose piece of equipment, is easily lost overboard and damaged by careless handling. All of these difficulties are overcome by the connector of the present application.

According to a preferred embodiment of my invention I provide a pair of fixed guide members on the barge or vessel deck. A sliding carriage is mounted for movement on these guide frames. One side of the carriage is fixed to one end of a variable length tightening means, the other end of the carriage is provided with a releasable locking cable-engaging member. A second movable carriage is preferably provided on the guide frames spaced from the first carriage and connected to the opposite end of the variable length tightening means. Means are provided on the second carriage for fixing the carriage at spaced intervals on the guide frames and means are provided for actuating the variable length tightening means.

Preferably I also provide means on the side of the guide frame for fixing a cable end against movement relative to the frames.

I have described certain salient features of my invention as they appear in a preferred embodiment, however, other advantages and objects will become apparent from the following description and the accompanying drawings, in which—

Figure 1 is a top plan view of a barge connector according to a preferred embodiment of my invention;

Figure 2 is a longitudinal section on the line II—II of Figure 1;

Figure 3 is a section through the carriage on the line III—III of Figure 1;

Figure 4 is a section through a second carriage on the line IV—IV of Figure 1; and

Figure 5 is a partial side elevation of the cable attachment device of Figure 1.

Referring to the drawings I have illustrated a pair of spaced parallel side frames **10** having an inturned flange **11** at the top thereof. The side frames are welded to the deck of a barge **12** or the like adjacent a corner of the barge near the bits (not shown). In other applications the side frames are welded on a fixed surface of one of the objects to be connected. A sliding carriage **14** is mounted on the flanges **11** at one end. The carriage **14** is made up of a top plate **15** and a bottom plate **16** separated by an intermediate spacer member **17**. A U-shaped clamp **18** threaded at the end of each arm is inserted through openings in the plates **15** and **16** and the spacer member **17**, one arm of the U passing through a ring on a threaded screw member **19**. The U-shaped member **18** carries a movable link **20** upon which is pivoted an L-shaped arm frequently called "a pelican hook" **20***a*. A locking ring **21** is slidable on the U-clamp **18** in order to lock the pelican hook **20***a* to the U-shaped member. The pelican hook **20***a* is adapted to pass through and hold either a loop in the cable **36** or a link **20***b* of the series of free links fixed to one end of the tightening cable **36**. A second carriage is slidably mounted on the opposite end of the spaced-apart side frames **10** and is formed of a top member **24** and a bottom member **25** separated by a U-shaped spacer member **26** and held together by bolts, one of which passes through a ring on the end of a second threaded screw member **19***a* opposite the U-clamp. The two screw members **19** and **19***a* threadingly engage a threaded barrel **19***b* with right and left hand threads. The barrel **19***b* is provided with a drive gear **19***c* and an actuating ratchet handle **19***d* by means of which it may be turned. The other bolt passes through a section of chain **27**. The end of the chain **27** is used to anchor the second carriage in position along the frame members **10** by inserting into a holding member **28** formed at the end of the side frames **10** by welding a member having a keyhole slot **29** so that the chain **27** is adjustably positioned by engaging a link therein. Holes **30** are provided on the sides of the frame **10** to receive a pin **31** which acts as a stop member to hold the carriage **14** while the tightening means is relaxed to permit readjusting or resetting the chain **27** in the keyhole slot **29**. The pin **31** when inserted in hole **30** in the side of the frame lies in the pattern of travel of the carriage **14** so that the carriage abuts it and is prevented from sliding in the frame **10** while the chain **27** is being reset. The tightening means is finally tightened in the usual manner, thereafter removing the bar **31** from the holes **30** in the side frame. A pair of spaced-apart brackets **32** are welded on the side of one of the guide frames **10**. A collar **32***a* is welded on the bottom bracket spaced from the bracket and the side frame to receive the cable loop. A removable collar **33** is inserted between these brackets **32** above the fixed collar **32***a* and is held in position by a bolt **34**. This collar fits above the loop **35** in the fastening cable **36** on the fixed collar **32***a* and prevents its removal from the barge and the fixed collar **32***a*.

When making a connection with the connector of my invention one end of the fastening cable **36** is fixed through the loop **35** to the collar **33**. The cable is passed around the fittings usually used on the vessel when connecting together. The free end of the cable is then fixed to chain links **20***b* which are then fixed to the pelican hook **20***a* and the screws **19** and **19***a* are brought together by turning the threaded barrel **19***b* by means of the ratchet handle **19***d* and gear **19***c*.

I have particularly described my invention as applied to connecting barges together as when fleeted together for towing. Similarly the connecting and tying device of my

invention can be used for tying down a load on the deck of a vessel or for connecting various vessels or objects together. Accordingly, while I have illustrated and described a present preferred embodiment of my invention it will be understood that it may be otherwise embodied within the scope of the following claims.

I claim:

1. A connecting device for barges and the like vessels comprising a pair of fixed spaced guide members having rails extending transverse to the plane of the guide members and toward each other, a movable anchor member slidable on the rails between the guide members and held against rotation by said rails, adjustable locking means adjustably fixing the position of the movable anchor member in the guide means, a movable carriage slidable on the rails between said guide members and spaced from the anchor member, said movable carriage being held against rotation by the rails, a screw member fixed to each of the anchor and the movable carriage, means engaging said screw members and drawing them toward each other to vary the spacing between the anchor and the carriage, said anchor member and movable carriage being supported by the rails and guide members against side thrust whereby the screw means is protected against forces acting in directions transverse to its length and cable engaging means on the carriage adapted to receive a connecting cable.

2. A connecting device as claimed in claim 1 wherein the guide members are provided with openings transverse to the path of travel of the carriage, and stop means adapted to pass through said openings in the path of the carriage whereby the carriage may be temporarily held for repositioning of the anchor member during the tying and connecting operation.

3. A connecting device for barges and like vessels comprising a pair of fixed spaced substantially parallel guide

members adapted to be fixed to a surface of a vessel, a movable anchor member slidable between said guide members and held against rotation thereby, locking means adjustably fixing the position of the movable anchor member in the guide means, a movable carriage slidable between said guide members and spaced from the anchor member, screw means connecting said anchor member and movable carriage whereby the distance therebetween may be varied, said screw means comprising a screw fixed against rotation into each of the anchor and the movable carriage, a hollow internally threaded barrel receiving the threaded ends of the screw members and drawing them toward each other when rotated, a drive gear on the barrel and ratchet handle means pivoted on the barrel engaging the drive gear to rotate on the barrel, said anchor member and movable carriage between said guide members whereby the screw means is protected against forces acting in directions transverse to its length, and hook means on the movable carriage adapted to receive a connecting cable.

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