Sept. 28, 1943. H. A. CALAHAN 2,330,470

HEAVING LINE DEVICE

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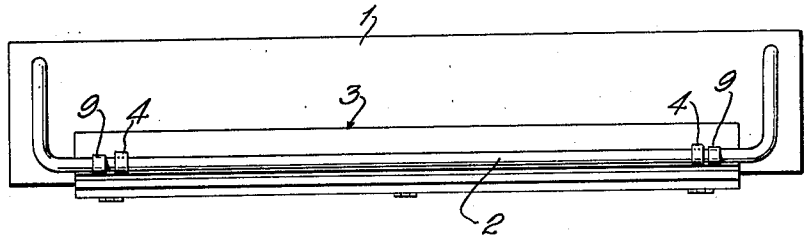


Fig. 1.

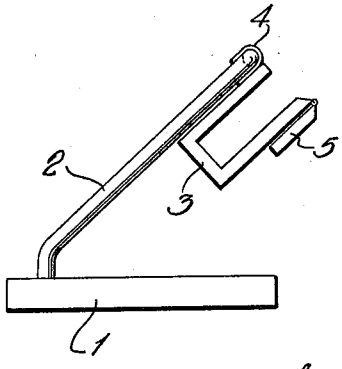
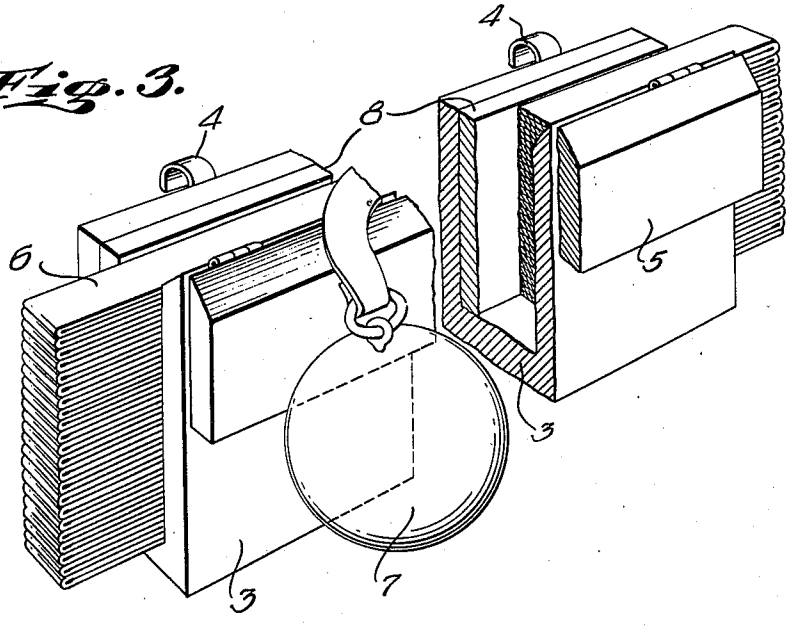


Fig. 2.

Fig. 3.



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HEAVING LINE DEVICE

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11 Claims. (Cl. 206—1)

This invention relates to a heaving line, i. e. a line to be cast or thrown from one point to another as for instance in the case of two vessels separated by an intervening stretch of water, or between a vessel and a dock. It also relates to a device for holding the line in orderly arrangement so that it will not foul or become snarled or deranged, and said device also permits the line to be thrown clear and without friction, regardless of the motion of the vessel from which it is thrown.

In the callings in which heaving lines are ordinarily employed, it has heretofore been common practice to use rope or other cordage which is round or nearly round in cross-section. Such cordage is coiled, and the coil is hove or thrown. A weight, frequently in the form of a Turk's head, is on the end of the line to make the line carry and to aid in unlaying the coils in the air. In heaving the coiled line when it is of substantial length and weight, it is usually apportioned into two parts, one part thrown by the right hand and the other part by the left hand. This method presents two common sources of failure. First, the line must always be freshly coiled just before using to insure the orderly arrangement of the coils, because if a single coil should be out of its proper arrangement, the line will be pulled down in the heave. Second, if in the course of propulsion, one coil should cross another, the line will be fouled and will fail to reach its objective. Both causes of failure are inherent in the fact that a line that is round in section must be coiled.

These defects are overcome by my invention, in which a narrow flat tape is substituted for the round-section line. It is not coiled in the usual manner, but is flaked or folded one layer upon another, so that a lower layer cannot be hurled or pulled until the layer above it has been sent on its way. This tape is flaked into a device which prevents improper flaking, holds the flakes in perfect arrangement so that reflaking immediately prior to use is unnecessary, and permits the tape to be hurled with minimum friction and without the possibility of fouling.

Other objects and advantages of my invention will be readily understood from the following description of it taken in connection with the accompanying drawing, in which

Fig. 1 is a top plan view of my invention with the tape removed.

Fig. 2 is an end elevation thereof, and

Fig. 3 is an enlarged perspective drawing of the trough portion with tape flaked therein and with the center portion sectioned out to reduce the size of the drawing.

In all three figures, similar parts are indicated by the same reference numerals.

Referring to the drawing, 1 is the base in the form of a slab or plank to be placed on the deck or ground. 2 is a bent rod permanently attached at both ends to the base 1 and extending upwards therefrom at an angle with its central portion disposed parallel to the base 1 to form a longitudinal suport for the receptacle in the form of a trough 3, which is pivotally suspended thereon by the flat hooks 4 at a sufficient distance above the base 1 to permit it to swing freely. Said trough which may be made of any suitable material such as wood, is open at both ends and is provided with a hinged cover 5 and a suitable latch (not shown) whereby said cover may be locked in a closed position. Its weight with the tape flaked therein as hereinafter described and its line of attachment to the rod 2 are so disposed that the trough 3 will be maintained by gravity in a slanting position relative to the horizontal regardless of the motion of the vessel upon which the base 1 is placed. 6 is a flat tape of pliable material, which is flaked or folded back and forth upon itself in orderly arrangement, layer upon layer, in the trough 3. At the end of the tape which lies at the top of the trough is separably attached a ball 7 of suitable weight, or other desired object adapted to be thrown or propelled. The other end of the tape 6 may be anchored to the trough or a heavier, stronger line may be attached to it so that the light tape may be used as a "messenger" to haul a heavier, stronger line between the points bridged by the tape.

A spacing block 8 is provided to fill the space between the flaked tape and one side of the trough from which it may readily be removed. When said spacing block is in the position shown in Fig. 3, it compels and maintains the orderly arrangement of the flaked tape. When it is removed, preparatory to heaving, all friction between the tape and the sides of the trough is reduced to a minimum. The degree of slant of the suspended trough 3 is such that the sides of the trough from bottom to top will be substantially in line with the first portion of the trajectory of the tape when the same is hove. 9 are stops to prevent the trough from sliding lengthwise along the rod.

The device is used as follows: First, the trough 3 is removed from the rod 2 and placed upon its bottom with the lid 5 open and the spacing block

8 in place as shown in Fig. 3. The operator next flakes down or arranges in orderly manner, layer upon layer, the tape 6 within the trough 3, the tape being of such a length that unless pressed down, the height of the layers will be somewhat in excess of the inside height of the trough. To maintain the tape in orderly arrangement, the lid 5 is closed and latched over the top of the trough, utilizing the elasticity of the tape to exert pressure thereon. The tape and trough may now be stored with the assurance that the orderly arrangement will be maintained.

When the occasion arises to heave a line, the base 1 is placed upon the deck or ground as the case may be. The trough is attached to the rod 2 by means of the hooks 4 so that the open top of the trough assumes the position facing the trajectory of the line and maintains that position despite the movement of the vessel. The lid 5 is now opened to the position shown in Fig. 3, and the spacing block 8 is removed to reduce friction between the tape and the sides of the trough.

For manual heaving, the operator stands behind the device, places his foot on the base 1 to hold it steady, attaches the ball or weight 7 to the end of the tape, grasps the tape about four feet from the end, whirls the ball about in a vertical circle, and releases his grasp when the desired line of trajectory is tangential to the circle. Since the tape is arranged layer upon layer, it must leave the trough in proper order and therefore cannot foul either in the trough or in the air.

It is to be understood that I am not to be limited to the precise embodiment of my invention above described but that many changes may be made therein without departing from the spirit of my invention as defined in the appended claims.

What I claim is:

1. In a heaving line device, a flat flexible tape, a receptacle having two parallel sides and adapted to hold said tape therein folded in layers upon itself along transverse lines at predetermined points, one layer being supported by the layer immediately underneath and permit the same to play out therefrom in successive layers, the interior width of said receptacle being substantially greater than the width of said tape and means for selectively preventing lateral movement of said flaked tape within said receptacle.

2. In a heaving line device, a flat flexible tape, a receptacle having two parallel sides and adapted to hold said tape therein folded in layers upon itself along transverse lines at predetermined points, one layer being supported by the layer immediately underneath and permit the same to play out therefrom in successive layers, the interior width of said receptacle being substantially greater than the width of said tape, and means for selectively preventing lateral movement of said folded tape within said receptacle, said means comprising a spacing block removably positioned between said flaked tape and a side of said receptacle.

3. In a heaving line device, a support and a receptacle having two parallel sides and adapted to hold a flexible flat heaving line therein folded in layers upon itself along transverse lines at predetermined points, one layer being supported by the layer immediately underneath, said receptacle being mounted on said support at an angle to the horizontal.

4. In a heaving line device, a support, a receptacle adapted to hold a flexible flat heaving line in flaked arrangement therein, said receptacle being mounted on said support, and means for maintaining said receptacle at an angle to the horizontal.

5. In a heaving line device, a flat flexible tape, a receptacle adapted to hold said tape in flaked arrangement therein and permit the same to play out therefrom in successive layers, and means for maintaining said receptacle at an angle to the horizontal.

6. A heaving line device comprising a base, a support positioned above said base, a receptacle pivotally mounted on said support, a flexible flat tape disposed in flaked arrangement within said receptacle, the center of gravity of said receptacle and flaked tape being so disposed as to cause said receptacle to be maintained at an angle to the horizontal.

7. In a heaving line device, a flat flexible tape, a trough-like receptacle formed with open ends having two parallel sides and adapted to hold said tape therein folded in layers upon itself along transverse lines at predetermined points, one layer being supported by the layer immediately underneath and permit the same to play out therefrom in successive layers, the interior width of said receptacle being substantially greater than the width of said tape and means for selectively preventing lateral movement of said folded tape within said receptacle.

8. In a heaving line device, a support, a trough-like receptacle formed with open ends and adapted to hold a flexible flat heaving line in flaked arrangement therein, said receptacle being mounted on said support, and means for maintaining said receptacle at an angle to the horizontal.

9. A heaving line device comprising a base, a support positioned above said base, a trough-like receptacle formed with open ends and pivotally mounted on said support, a flexible tape disposed in flaked arrangement within said receptacle, the center of gravity of said receptacle and flaked tape being so disposed as to cause said receptacle to be maintained at an angle to the horizontal.

10. A heaving line comprising a flat, flexible tape folded in layers upon itself along transverse lines at predetermined points, one layer being supported by the layer immediately underneath to provide a flaked line, a weight at one end of said tape whereby, when the weighted end is heaved, the folds of said tape will be withdrawn successively and means for retaining the said tape in said folded position.

11. A heaving line comprising a flat, flexible tape folded in layers upon itself along transverse lines at equidistant predetermined points, one layer being supported by the layer immediately underneath to provide a flaked line, a weight at one end of said tape whereby, when the weighted end is heaved, the folds of said tape will be withdrawn successively and means for retaining the said tape in said folded position.

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