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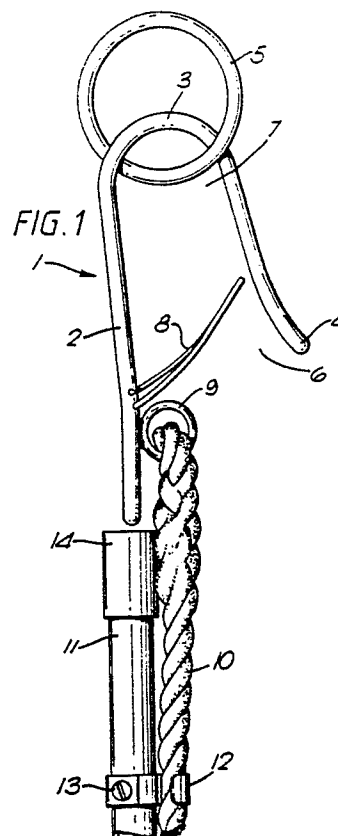
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D-8000 München 22(DE)(54) **A hook arrangement.**

(57) A hook arrangement for use when mooring a boat comprises a hook (1) defining a mouth (6), a gate (8) mounted upon the hook and movable between a first position in which it extends across the mouth so that the mouth is closed and a second, alternative position in which it is displaced from the mouth so that the mouth is open, means for securing a line or rope (10) to the hook, and an elongate element (11) provided with guide means (12) for engaging a line or rope, one end of the elongate element being configured such that when the guide means engage a line or rope which is secured to the hook, said one end of the elongate element may be moved axially to engage and move the gate to the second or open position to facilitate connecting the hook to a mooring point.



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A hook arrangement.

THE PRESENT INVENTION relates to a hook arrangement and more particularly to a hook arrangement which may be used for mooring a boat.

Various types of hooks and hook arrangements have previously been proposed for use in boat mooring applications.

One prior proposed arrangement comprises a hook having a gate extending across the opening to the throat of the hook and a boat pole to which a special track may be fitted so as to enable the hook to be attached to the pole. The assembled hook and pole facilitates boat mooring, since the hook can be passed through a mooring shackle or a like from a remote position by reaching out to the shackle using the boat pole with the hook attached to the end of the pole. Once the hook is secured to the shackle, or other fixed mooring point, the pole may be pulled free from the hook leaving the hook secured to the shackle. A length of rope is secured, at one end, to the hook and at the other end to a fixed point on the boat to be moored.

Whilst this prior proposal assists the mooring procedure, it is still necessary, when releasing the boat from its mooring, to pull the boat close enough to the mooring point so that the hook is within arms reach to enable the hook to be released manually. It will be appreciated that reaching from a boat with an outstretched arm to release the hook is a precarious and sometimes dangerous operation. This operation may be even more difficult in "foreign" moorings where the height of the mooring point is different from that for which the boat was designed. In addition the operation of releasing the hook becomes particularly difficult in rough weather conditions.

The present invention seeks to provide an improved hook arrangement which does not suffer from the above disadvantage and which is suitable for use in mooring a boat.

According to the present invention there is provided a hook arrangement, said arrangement comprising a hook defining a mouth; a gate mounted upon the hook and movable between a first position in which it extends across the mouth so that the mouth is closed and a second, alternative position in which it is displaced from the mouth so that the mouth is open; means for securing a line or rope to the hook; an elongate element, said element being provided with guide means to engage a line or rope, one end of the elongate element being configured such that when the guide means engage a line or rope which is secured to said securing means, said one end of the elongate element may be moved axially to engage the gate and move the gate to the second or open position.

Preferably the gate is in the form of a spring biased member, the gate being biased to the first or closed position.

Conveniently the gate is a spring member which comprises two legs interconnected at one end, the legs lying in a common plane when the spring member is in a relaxed state, the free end of each leg being mounted upon the hook such that the spring member is distorted and the legs do not lie in a common plane.

Advantageously said one end of the elongate element is tubular and is dimensioned to receive the free end of a shank of the hook.

Conveniently said one end of the elongate element defines a central bore, the bore being provided with opposed channels dimensioned to receive the legs of the spring member, the bore being recessed from said one end, there being a tapering entrance between said one end and the central bore.

Preferably said securing means are in the form of an eye mounted upon and extending laterally from a shank of the hook.

Conveniently said one end of the elongate element is slit so as to receive said eye.

Advantageously said guide means comprise one or more guide clips mounted upon the elongate element, the or each guide clip defining an arcuate portion dimensioned to receive a line or rope.

In order that the present invention may be more readily understood and so that further features thereof may be appreciated the invention will now be described by way of example, with reference to the accompanying drawings in which:

FIGURE 1 is a side view of a hook arrangement in accordance with the present invention;

FIGURE 2 is a side view of the arrangement of Figure 1 in an alternative operating position;

FIGURE 3 is a perspective view of part of the hook arrangement; and

FIGURE 4 shows the hook arrangement of Figures 1 and 2 when used for mooring a boat.

Referring to Figures 1 and 2 of the drawings a hook arrangement comprises a hook 1 having a substantially linear shank 2 which is formed at one end with a U-shaped arcuate portion 3, the arcuate portion 3 terminating with an outwardly projecting tip 4. The arcuate portion 3 forms the load carrying part of the hook 1, that is to say the part of the hook that receives and engages an item such as a ring 5, as illustrated in Figures 1 and 2. The hook may, of course, receive other items such as a rope or shackle. The shank 2, arcuate portion 3 and tip 4 together define an open mouth 6 extending into a

throat 7 of the hook. The hook 1 may be formed from a steel such as a stainless steel.

A spring member 8 is mounted on the shank 2 of the hook 1 at a position opposite the tip 4, the spring member 8 constituting a gate which extends across the open mouth 6 and engages the tip 4 of the hook. The spring member or gate 8 is in the form of a "planar" spring comprising two arms interconnected at one end. The member is formed from spring wire. With the spring member in a relaxed state the two arms lie in a common plane. The free ends of the arms terminate with inwardly directed fingers. The gate is attached to the shank 2 of the hook 1 by inserting the fingers at the free end of each arm into bore holes provided in the shank of the hook. The bore holes in the shank of the hook are arranged on opposite sides of the shank 2 but with offset axes such that when the fingers are inserted into the bores, the gate 8 is distorted out of its planar relaxed state, so that the two arms of the gate no longer lie in a common plane. The spring member or gate will naturally tend to return to its relaxed state and this tendency biases the end of the spring where the two arms are interconnected into engagement with the tip 4 of the hook, such that the spring member forms a gate across the open mouth 6, with the gate being biased to a closed position, as illustrated in Figure 1 of the drawings. It will be appreciated that the gate 8 is, in effect, rotatably mounted upon the shank 2 and the gate may be moved to an open position, as illustrated in Figure 2 of the drawings, by pushing on the gate in a direction towards the throat 7 of the hook. When in the open position, the spring member 8 lies substantially parallel to the linear shank 2 of the hook.

A circular eye 9 is welded to the shank 2 of the hook 1 between the mounting point of the spring member or gate 8 and the free end of the shank. The eye 9 extends laterally of the shank and is directed inwardly towards the tip 4 of the hook so that the eye is positioned adjacent the spring member 8. A line or rope 10 is attached to the eye 9 and thus the eye 9 serves as means for securing the rope to the hook 1. When the hook arrangement is used for mooring a boat, the opposite end of the rope 10 would be secured to a fixed point on the boat.

The hook arrangement further comprises a circular section pole 11. Only the end region of the pole 11 has been illustrated in Figures 1 and 2 of the drawings. The pole 11 is, however, of uniform circular cross-section throughout its length. The pole 11 is provided with one or more guide clips 12, each guide clip 12 being in the form of a length of strip metal which is secured at one end to the pole 11 by means of a screw 13, the other end of the strip being of substantially U-shaped form, this

end of the clip being dimensioned so as to receive the rope 10 with a small clearance. The U-shaped arcuate portion of the clip 12 is offset to one side of the pole 11 in such a way as to enable the rope 10 to be inserted freely into the U-shaped portion. The free end of the pole 11 illustrated in Figures 1 and 2 is provided with an end piece 14 which is of tubular construction, i.e. the end piece defines a central bore 15 which is co-axial with the pole 11. The end piece 14 is also provided with an axial slit 16 that is to say it has a longitudinally extending opening 16 leading into the central bore, with opening 16 commencing at the free end 17 of the end piece 14. The central bore 15 is recessed in the end piece 14 and there is provided a tapering entrance between the free end 17 of the end piece, adjacent the outer edge thereof, and the central bore 15. The width of the slit 16 is less than the distance between the two arms of the gate 8. The central bore 15 is provided with two diametrically opposed channels 18. Each channel 18 is of rectangular form and extends radially outwardly from the central bore 15 and along the length of the bore 15. The channels 18 are dimensioned to receive the two arms of the spring member or gate 8. The central bore 15 is dimensioned to be large enough to receive the shank 2 of the hook together with the end region of the gate 8 which is mounted upon the shank 2. The longitudinally extending slit 16 or opening is dimensioned to be large enough to receive the eye 9, so as to enable the end of the pole 11 to be pushed onto the shank 2 of the hook with the eye 9 received in the slit or opening 16, as illustrated in Figure 2 of the drawings.

When the hook arrangement is used for mooring a boat the rope 10 will normally be spliced onto the eye 9 of the hook and the opposite end of the rope 10 will be secured to a cleat or other attachment on the boat.

As the mooring point is approached the hook 1 is mounted upon the end of the pole 11 by inserting the free end of the shank 2 into the central bore 15 in the free end of the end piece 14 so that each arm of the spring member or gate 8 is guided into a respective channel, thereby causing the gate 8 to be moved to the open position as shown in Figure 2. The eye 9 is received within the slit 16 in the end piece 14 whilst the free end of the shank 2 and part of the gate adjacent the point at which it is mounted on the shank are received within the central bore 15 and the channels 18. As mentioned above the gate 8 is automatically biased towards the closed position as shown in Figure 1 and this bias serves to retain the hook in engagement with the end piece since the gate will grip the inner surfaces of the channels 18.

The pole may now be passed over the guard rail of the boat as generally shown in Figure 4 and

the hook 1 may be passed through a mooring ring 5 or other fixed mooring point, since the gate 8 is in the open position. Once the hook has been attached to the mooring point the pole may be pulled off the free end of the shank 2 and the gate 8 will automatically move to the closed position as illustrated in Figure 1 with the mooring ring or other mooring point retained within the throat 7 of the hook. The boat is now moored and the pole may be left on the deck of the boat.

When it is desired to release the boat from its mooring the rope 10 is pulled so that it is taut and so that the boat is within a pole's length of the mooring point. With the rope 10 held in the taut condition the pole 11 is attached to the rope by passing the guide clip 12 over the rope. The pole is then effectively clipped onto the rope. The pole may now be slidden down the rope towards the hook 1. As the pole approaches the hook the central bore 15 is aligned with the free end of the shank 2 due to the arrangement of the guide clip 12 on the rope 10. The slit or opening 16 in the end piece 14 is also aligned with the position of the eye 9 on the shank 2 and thus the end piece 14 may be pushed onto the end of the shank with the eye 9 being received in the slit 16. The arms of the gate 8 are guided into the channels 18, thereby causing the gate to be moved to the open position as shown in Figure 2. The hook 1 may now be removed from the mooring ring 5 and returned to the deck of the boat. The boat is now free from its mooring. It will be appreciated that in practice the mooring ring 5 would be secured to a mooring buoy or to a fixing mooring point on a quayside or the like.

It can be seen from the above description that when using a hook arrangement in accordance with the present invention the mooring procedure no longer involves the precarious and sometimes dangerous releasing operation presently required. Utilising a hook arrangement in accordance with the present invention helps to make the mooring procedure safer and quicker than conventional operations. This is advantageous when one is sailing single handed or short handed where there often is not time to tie and untie knots and in that untrained crew members can be used to moor the boat.

Whilst the hook arrangement has been described as having a primary application in mooring boats, the arrangement may have other applications where a safety hook is to be secured to and released from a fixing. The hook may, for example, have a wheel or roller mounted within the U-shaped arcuate portion 3 so that it may move freely along a cable or bar when being used to move heavy loads above head height or at remote positions which could not easily be reached by hand.

It will be appreciated that various modifications

and alterations may be made to the above-described embodiment without departing from the scope of the present invention. The hook arrangement may be provided in various sizes. The hook itself may be of circular cross-section or of octagonal cross-section or indeed of any other desired cross-section. The pole 11 may be provided with an integral hook at a point adjacent the end thereof so that the pole may be used in the manner of a conventional boat pole.

Claims

1. A hook arrangement, said arrangement comprising a hook (1) defining a mouth (6); a gate (8) mounted upon the hook and movable between a first position in which it extends across the mouth (6) so that the mouth is closed and a second, alternative position in which it is displaced from the mouth (6) so that the mouth is open; means (9) for securing a line or rope (10) to the hook (1); an elongate element (11), said element being provided with guide means (12) to engage a line or rope (10), one end of the elongate element (11) being configured such that when the guide means (12) engage a line or rope (10) which is secured to said securing means (9), said one end of the elongate element (11) may be moved axially to engage the gate (8) and move the gate to the second or open position.

2. A hook arrangement according to Claim 1 wherein the gate (8) is in the form of a spring biased member, the gate being biased to the first or closed position.

3. A hook arrangement according to Claim 2 wherein the gate (8) is a spring member which comprises two legs interconnected at one end, the legs lying in a common plane when the spring member is in a relaxed state, the free end of each leg being mounted upon the hook (1) such that the spring member is distorted and the legs do not lie in a common plane.

4. A hook arrangement according to any one of Claims 1 to 3 wherein said one end of the elongate element (11) is tubular and is dimensioned to receive the free end of a shank (2) of the hook.

5. A hook arrangement according to Claim 4, as dependant upon Claim 3, wherein said one end of the elongate element (11) defines a central bore (15), the bore being provided with opposed channels (18) dimensioned to receive the legs of the spring member, the bore (15) being recessed from said one end, there being a tapering entrance between said one end and the central bore.

6. A hook arrangement according to any one of the preceding claims wherein said securing means (9) are in the form of an eye mounted upon and

extending laterally from a shank (2) of the hook (1).

7. A hook arrangement according to Claim 6 wherein said one end of the elongate element (11) is slit so as to receive said eye.

8. A hook arrangement according to any one of the preceding claims wherein said guide means (12) comprise one or more guide clips mounted upon the elongate element, the or each guide clip defining an arcuate portion dimensioned to receive a line or rope.

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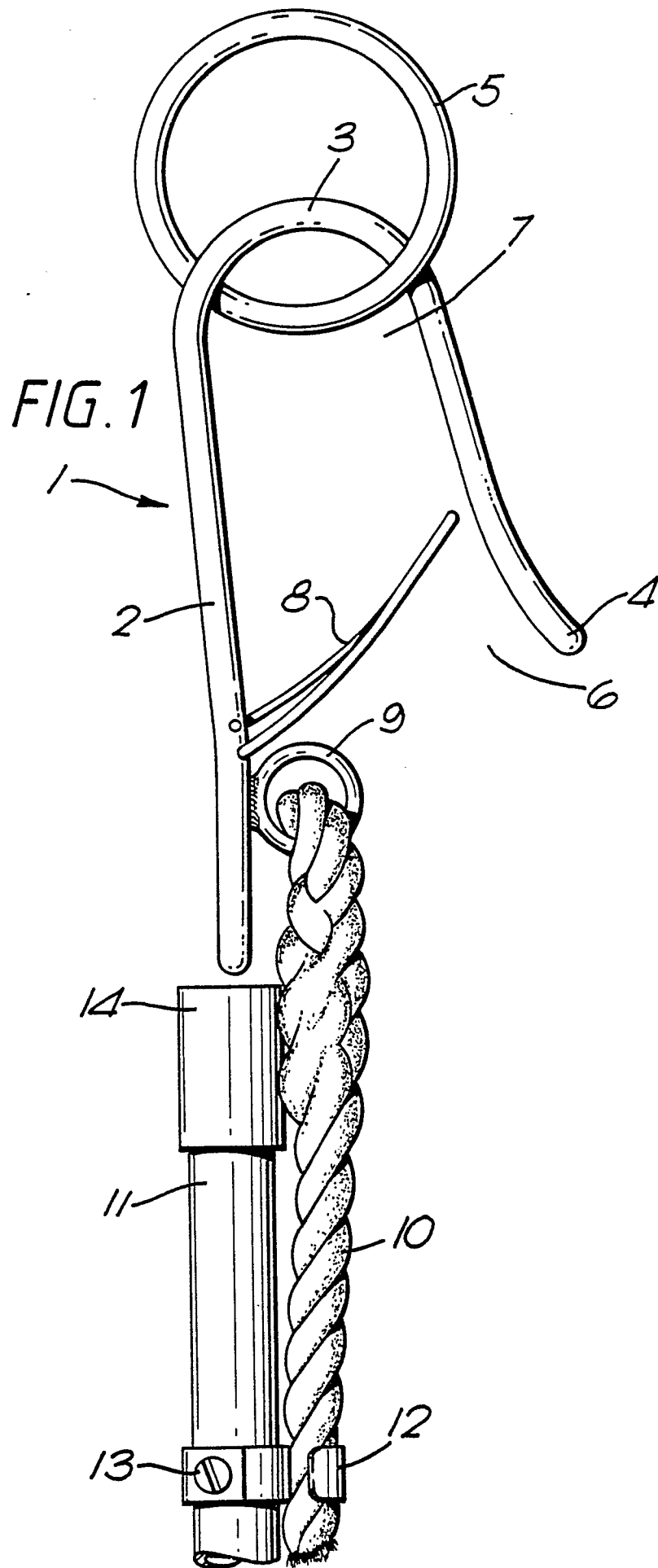


FIG. 2

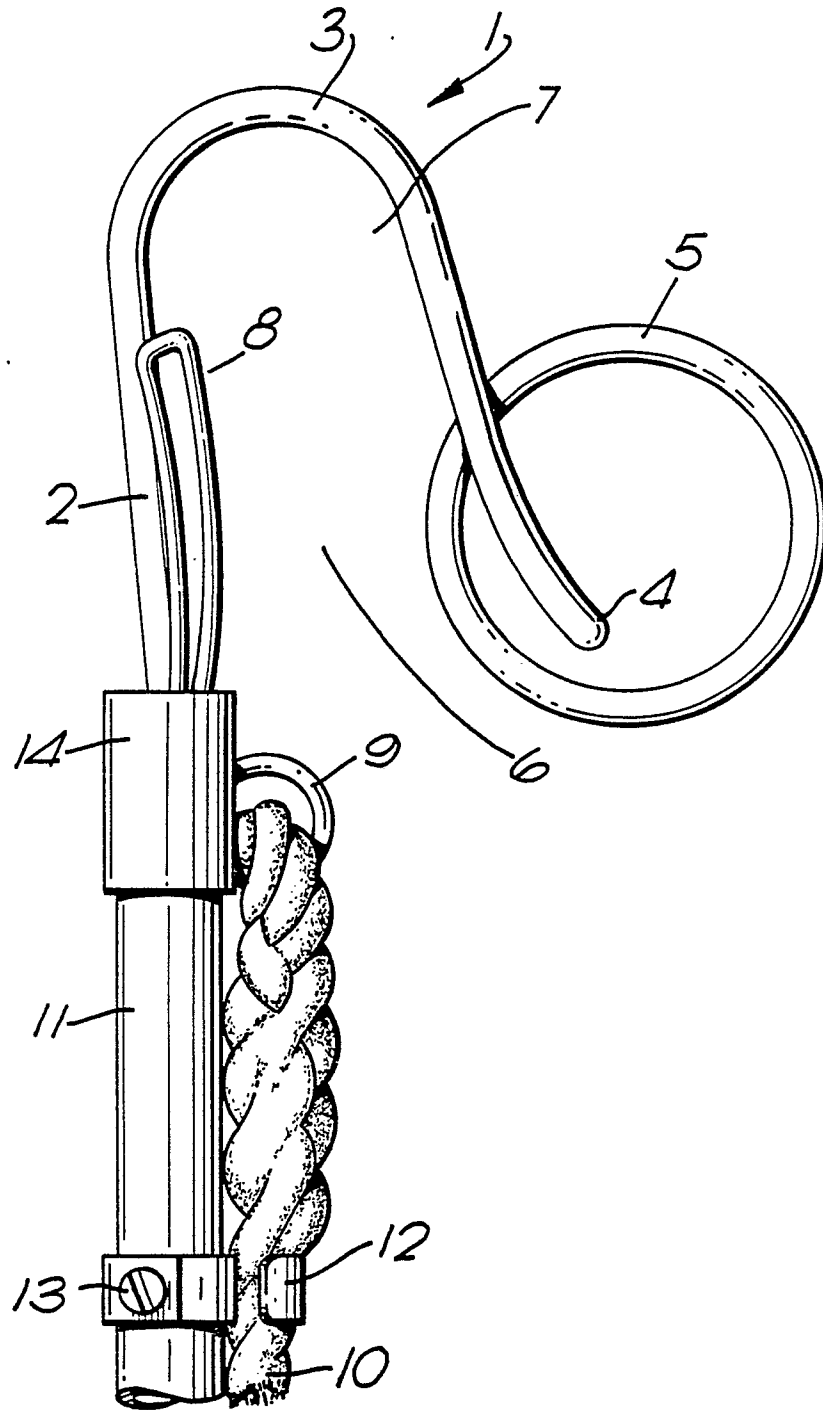


FIG. 3.

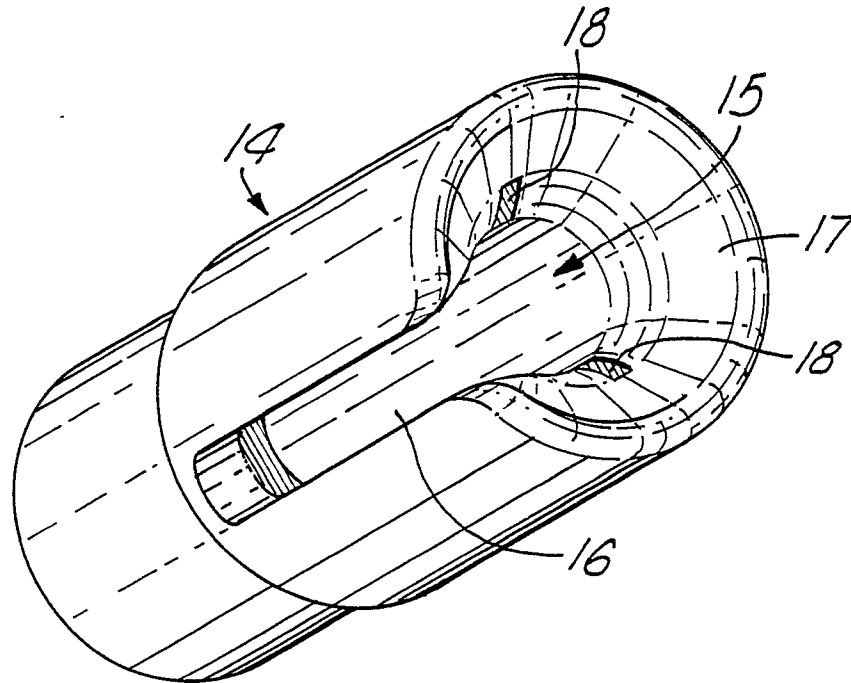
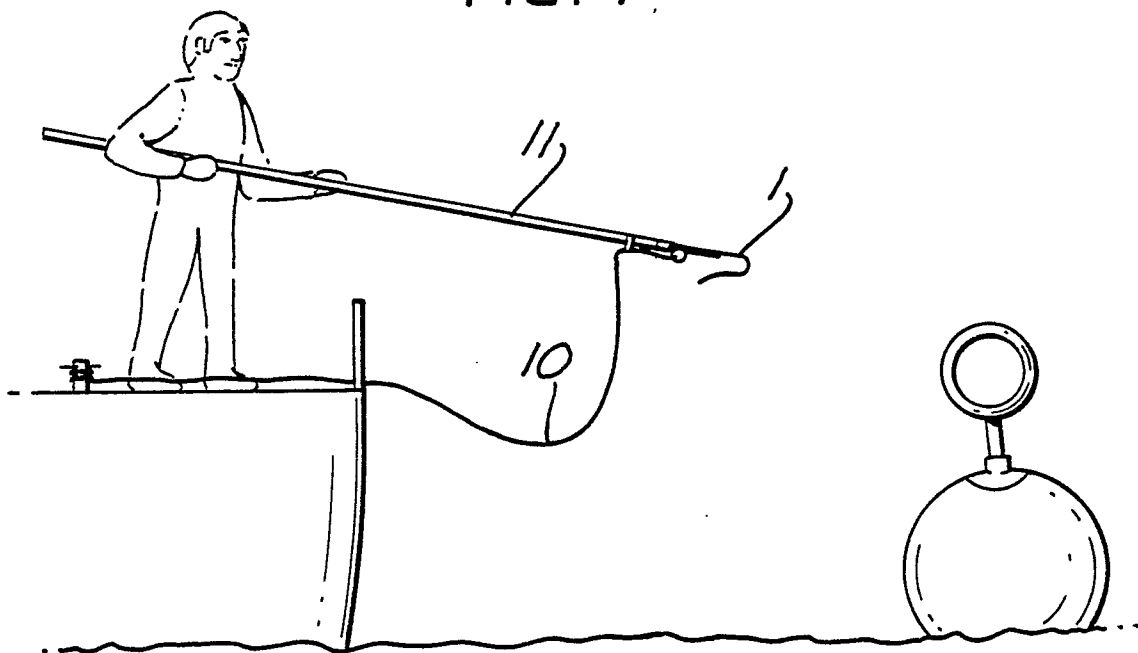


FIG. 4.





DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	US-A-1 536 701 (BUCKINGHAM) * Page 2, lines 10-15 *	1,2,4,6 7	B 63 B 21/54
Y	---	3,5	
Y	GB-A-2 192 926 (R.W.O.) * Figure 1; page 1, lines 13-38 *	3,5	
X	---		
X	US-A-4 595 223 (HAWIE) * Figure 5 *	1,2,4,8	
X	---		
X	FR-A-2 606 732 (BERENGER) * Figures 1-3 *	1,2,8	

			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			B 65 B F 16 B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 03-11-1989	Examiner HUNT A.E.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	