



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) **EP 1 193 172 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
03.04.2002 Bulletin 2002/14

(51) Int Cl.7: **B63C 9/22**

(21) Application number: **01123097.6**

(22) Date of filing: **27.09.2001**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE TR**
Designated Extension States:
AL LT LV MK RO SI

(72) Inventor: **Nissen, Richardt Brodersen**
6710 Esbjerg (DK)

(74) Representative: **Blichfeldt, Mogens Erhardt**
c/o K. Skött-Jensen,
Patentingeniører A/S,
Lemmingvej 225
8361 Hasselager (DK)

(30) Priority: **28.09.2000 DK 200001430**

(71) Applicant: **Thanner Development A/S**
6701 Esbjerg (DK)

(54) **A release mechanism for releasing nautical life-saving equipment**

(57) Containers for inflatable lifeboats on board ships are in general kept in place on a support stand by means of a strap which by means of a "release hook" is fastened to a retaining eye within the stand. Said release hook is shaped comprising a locking member which can be released by means of manually squeezing the hook whereafter this can be released through flipping-away from the retaining eye. This system is difficult to operate. Through the invention, it is depicted that the system is substituted with a bracelike fork member (18) on the part

being connected with the support stand (4), and which bracelike member functions to a releasable retaining of an anchoring member which is let through a terminating eyelet, or loop, of the strap, and which is releasable from the retaining position of it through pull-out of a locking-pin (22) which is inserted through a transverse hole provided in one of the ends of the fork branches. Advantageously, the fork body being connected to the support stand (4) can be provided as an integrated releasable part of a hydrostatic functioning release device.

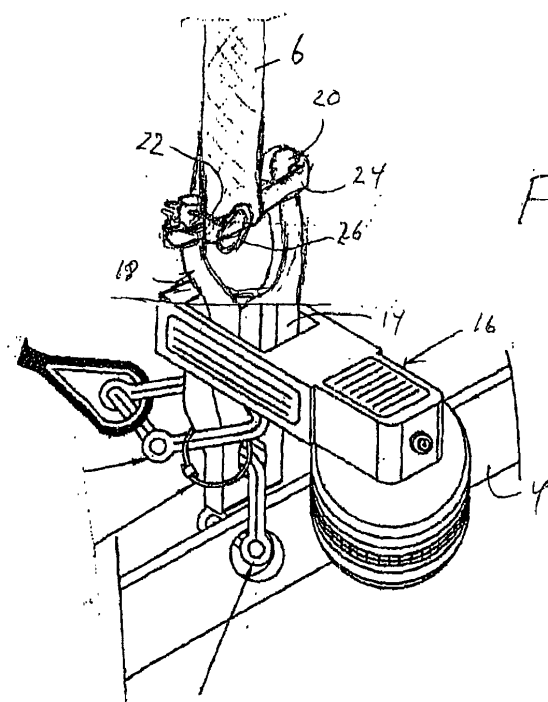


Fig. 2

EP 1 193 172 A2

Description

[0001] The present invention relates to a release mechanism for releasing maritime rescue equipment, preferably being openable containers comprising inflatable lifeboats. Such containers are, while being fastened to suitable support stands on board the relevant ships, by means of claspable straps releasably retained on the support stands while having one of the ends of the straps permanently fastened onto the support stands and having the other ends of the straps releasably fastened to the support stands in a generally standardized manner involving a so-called release hook being hooked into a hole within the support stand. The release hook comprises an eye portion adapted to stay in connection with a back-bend end of the straps and a protruding base portion of the hook with a free end portion extending relatively far backwards which at the end comprises a retaining protrusion for the retaining of an anchoring ring encircling the base portion of the hook and the respective free end portion. The free hook end portion can be let through the retaining hole within the support stand and thereafter be locked against pull-out by letting the locking ring down over the retaining protrusion on the free end of the hook.

[0002] The backwards protruding free end is resiliently depressible into the base portion of the hook so that, to manually achieve a release of the connection provided by the hook, the hook can be sufficiently compressed to provide a releasing of the locking ring from the retaining protrusion and thereafter flip and retract the hook from its grip in the hole in the support stand thus releasing the floatable container whereby a connection to the ship still is in general maintained by means of a lifeline which at last may be cut by means of release means or a knife having been installed in the liferaft.

[0003] In the later years a release device has been added to this traditionally embodied release system which automatically is able to break the retaining hook connection whenever a water pressure corresponding to submersion down to a depth of a few meters below the surface of the sea. By means hereof it is safeguarded that the liferaft container in case of an actual shipwreck is going to be released in time so that the liferaft still can also be of use in case a manual release has not been carried out. As an example an embodiment of such a hydrostatic release device is disclosed through the Danish industrial pattern No. DK-BR-1998 00279.

[0004] It has been found that the simplest way of employing the hydrostatic release device is so that the two main members which may be mutually locked or released are mounted respectively through a fixed connection to the support stand and in shape of a releasable member being provided with the hole which receives the aforementioned release hook whereby it is mandatory that long time before an activation of the hydrostatic release device, as caused by a factual sinking of the ship, may take place, it is possible manually to provide a re-

lease.

[0005] The hydrostatic release device thus provides an added safety without deviation from the safety provided by means of the aforementioned, in general employed release hooks.

[0006] Through the existence of the present invention it has been found that the traditionally provided release hooks present problems of safety with regard to the easiness of release which is being required of them. Thus, when applying an initially tight tensioned strap, in case of exposure of the strap to an increased level of humidity, the tension of the strap is further augmented, and in that case a correspondingly strong tension within the strap provides a pulling in the release hook whereby the free end portion of the release hook is forced to an elastic pivoting away from the main stem of the hook thus resulting in a so strongly augmented outwards tensioning within the aforementioned locking ring that it becomes difficult to release it through a manual squeezing of the release hook. Furthermore, the release hook has to be released from the retaining gripping by being bent outwards to achieve a transverse translation of the external hook portion away from the retaining hole, and this necessary bending outwards of the hook is made difficult to perform due to an increased pulling within the eye-end of the hook. Therefore, by means of the present invention a changed standard for the fastening of the releasable strap end has to be provided for so that a fairly easy provided releasing is safeguarded independent on the size of the tension within the strap. A further purpose according to the invention moreover is to depict an embodiment of the hydrostatic release device enabling it to function as a the manual release means.

[0007] According to the invention, the coupling portion of the hydrostatic release device being adapted to be coupled onto the strap through the aforementioned release hook is bracerlike shaped in such a manner as to make it directly or releasably couplable to the eyelet or to the loop of the strap while employing a releasable coupling beam which by means of a transverse locking-split-pin or a corresponding manually pull-out locking means is locked against any unintended release from the bracerlike portion. By means hereof, the aforementioned coupling portion of the hydrostatic release device may function as well as an automatically releasable portion or as a strap retaining means making a manual releasing of the strap possible.

[0008] By means of the aforementioned mounting of the strap on a coupling portion which is locked against being pulled-away from the aforementioned bracerlike portion the pulling force from a tensioned strap is being received by the bracerlike portion and by the coupling beam extending through the eyelet of the strap, and the easiness with which the aforementioned locking-split-pin can be pulled-out from the locking position it occupies is only influenced by the larger or minor value of the friction against pull-out depending upon the pulling force within the strap. A locking-split-pin which is pro-

vided with a rigid strap ring will in practice easily lend itself to be manually pulled-out even in case of a strong-tensioned coupling connection, thus a releasing will more easily be brought to take place than while employing the aforementioned release hooks.

[0009] Hydrostatic release devices may be activated in different manners than by employing water pressure, different manners to be mentioned are thus: By means of water contact, by means of electric signals, by means of radio signals, by means of air-/gas pressure, by means of vacuum, but also other manners of releasing are possible as well as combinations hereof all dependent upon the various conditions.

[0010] Embodiments according to the invention are specified in more details as follows under reference to the drawing, wherein:

Fig. 1 in the perspective illustrates a conventionally employed supporting device for a life raft container, and
fig. 2 correspondingly illustrates a release coupling according to the invention.

[0011] In Fig. 1 of the drawing a liferaft container 2 is illustrated which is arranged supported in a support stand 4 and is fastened to the support stand by means of an upper strap 6 which connectingly extends down to a retaining eye 8 of a release hook 10 which comprises an upwards extending fork branch 12 which is let through a below arranged retaining hole comprised in a part 14 of a coupling. This part in itself forms a releasable part of a hydrostatic release coupling device 16 which moreover is coupled onto a fixed bottom part of the support stand 4. The strap 6 thus lends itself to be released as well manually by being taken off the release hook 10 and away from the element 14 as automatically through a releasing of the element 14 itself.

[0012] According to the embodiment illustrated in Fig. 2 the upper end of the part 14 of the coupling is shaped as a bracelike member 18 of which one branch comprises an outwards extending protrusion 20 while the other branch exhibits a hole for receiving a locking split-pin 22. To the bracelike member 18 belongs a transverse beam 24 which at the ends comprises eyelets, adapted to be put down over the ends of the branches, and between them a straight beam portion so that the transverse beam 24 is adapted to be able to be inserted through an eyeshaped free end of the strap or through the loop of the strap 6 and thereupon can be mounted in place on the branch ends of the bracelike member 18 with inclusion of the accompanying locking provided in part through the providable gripping connection with the locking protrusion 20 and in part through the mounting-in-place of the locking split-pin 22.

[0013] Hereafter, the part 14 of the coupling will function as being automatically releasable just as formerly provided, but the strap 6 itself is now manually directly releasable away from the part 14 of the coupling, i.e.

performed by a simple pulling-out of the locking split-pin 22 through the employing of a pull-eyelet 26 provided on it.

[0014] It is not excluded that other usable manners providing releasable fastening of the end of the strap directly onto the part 14 of the coupling may be found, but, it will however after all be attained, that the release hook 10 which it is difficult to handle can be omitted and which release hook, it in practice is required, has to be mounted in place on the strap only by the producer who delivers the liferaft container 2 itself.

[0015] It should be noticed, that the illustrated embodied device according to the invention furthermore presents the advantage that due to the achieved simplified embodiment the risk for an erroneous mounting of the unit might take place is minimized, because the embodiment in itself guides how the single relevant items belonging to the coupling system have to be connected together. This feature forms an important aspect with regard to safety.

Claims

1. Release mechanism to the releasing of maritime rescue equipment, preferably openable containers for inflatable lifeboats, being of the type which comprises a manually openable gripping connection between a support stand connected part and an anchoring part being mounted onto an eyelet at the end of a holding strap which serves to the fastening of the equipment, **characterized in that** the support stand connected part terminates in an open retaining fork with an internal width which substantially corresponds to the width of the strap, which strap comprises branch ends being shaped with retaining means for a releasable anchoring member extending between these branch ends thereby forming the said anchoring means, and which retaining means are comprised of respectively a fixed pulling-away-abutment (20) and a with a pull-handle (26) provided transverse locking-split-pin (22) inserted in a hole in the respective branch end.
2. Release mechanism according to claim 1 whereby the to the support stand connected part is comprised within a hydrostatic automatic release device **characterized in that** the said retaining fork is shaped as an integral member arranged directly at the end of the releasable part of the automatic release device.

