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(54) AN ANCHOR FOR THE VESSELS

SCHIFFSANKER

ANCRE POUR NAVIRES

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(73) Proprietor: **Gögüs, Arif Alpay**
Istanbul (TR)

(72) Inventor: **Gögüs, Arif Alpay**
Istanbul (TR)

(74) Representative: **Kaya, Erdem**
Erdem Kaya Patent Inc.
Konak Mah. Kudret Sok.
Senyurt Is Merkezi
No. 6 Daire: 8
16110 Nilüfer/Bursa (TR)

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Description

Technical Area

[0001] The invention is about the anchors which provides the anchorage on the sea surface of the vessels like ship, ferryboat, boat etc., or means or elements like rafts, pontoon that are used together seasonally with the vessels. The invention, especially different from the anchors in the metal hook form of the previous technique, is about the new anchor, which takes up a small amount of space on the vessel and is light, however if thrown into the sea where it will be desired to anchor, it quickly comes in volumetric expansion through interacting with the sea water and becomes heavier as it keeps expanding and thus providing the vessel anchoring where it is.

The Known Status of the Technique

[0002] The anchors are simple elements that enable the vessels stabilized on a desired point on the sea surface or area by anchoring on the sea bottom. Depending on the vessel or on the depth they are used, they are produced of various metal types in different weights and forms. The anchors generally consist of shank, flukes, crown and arms as they are called in the maritime terminology. On the ship, boat - anchor (iron) connection which entirely or partially consist of metal chain, ropes are also used on demand.

[0003] The need of anchoring at the desired point in the open sea has been the most important impulse to effect the development of the existing anchors. Simply starting from big and heavy stone shapes, in the course of time they became the form of improved elements which include various hook stabilizing tools.

[0004] To drop the iron anchors into the sea when it will be desired to remain anchored and weigh anchor when it will be desired to move requires a specific design on the vessel. For example on big vessels the generally cylindrical designed section where the iron rope or chain gets through and the anchor will be kept, is called the iron hawse. While the anchor is kept at its place on the bow of the ship instead of the aforementioned hawse on the medium seized vessels, on the small seized vessels, the anchor without any mechanism, will be dropped and weighed manually. As two important factors in stabilizing the vessel at the bottom of the sea, the weight of the iron equipment and the strength of the iron to stay stabilized at the bottom of the sea play role. While it was given particular importance to heaviness by the improvement of the anchors before, by today's anchors it is being tried to reduce the total weight by increasing the resistance with some modifications on their designs. The iron anchors today are available in the markets in many forms and variety as hook, drag type, Danforth and Bruce type and are used according to the conditions. It has been applied for the designs in question and they have taken their places in the literature.

[0005] The USA patent, dated 1983 with No. US4397257 mentions about an anchor designed for large ships. The anchor which consists of the shank with two branches that forms the arms of the anchor and the foot of the anchor are mounted with a joint to enable their vertical movement against each other. By means of this design, it has been tried to provide the possibility of stabilizing to both hard and soft surfaces at the bottom of the sea through one anchor.

[0006] In the international patent application with Nr. WO2007101311 an anchor with three arms bottom is being explained. Each arm has grooves in order to fix the anchor to the bottom of the sea. Even though the anchor, a completely metal structure, provides a good possibility of stabilizing after it is dropped into the sea, it has to possess structures in order to be weighed and kept on the vessel.

[0007] GB2448909 is another example for the metal anchors that can be given. Because the anchor with a kind of metal plough has a blade-form structure, it is capable to get stabilized more easily to the sea bottom.

[0008] Apart from the metal anchor structures mentioned before, non-metal, lighter structures which take less space on the vessel are also tried to be developed.

[0009] The invention explained in the patent application with Nr. GB2165198 is one of the oldest examples of these types. It has been positioned to the wide opening of the anchor by means of the leech, which is inflatable by a valve. A certain amount of weight has been attached under the anchor, in order both to prevent the rotation of the anchor and stabilize the vessel by making it available to swim just below the water surface.

[0010] In the Japanese patent application with Nr. JPH09254870 a triangle anchor which can be opened in two directions will be explained. The anchor in triangle form which spreads inside the sea and covers a broad surface and thus stabilizes the ship by providing resistance within the sea is fixed to a rope from its three corners through strings that can be opened in a certain distance.

[0011] In the design application with Nr. USD492576 a balancing ring to be used on such kinds of anchors in parachute form can be observed.

[0012] In the application with Nr. JP2004161080 an anchor in parachute form developed for the fishing vessels are determined. The anchor which consists of an upper parachute part and a lower bottom part contains a net part that enables water to be filled in through these two sides at the middle part of the anchor. Through a pontoon from the lower bottom part, the location of the anchor can be easily determined by the people in the vessel.

[0013] Both the space of the anchors in parachute form and the metal ones that take in the ship, when they get dropped to the sea and by weighing anchor, all cause problems. The metal ones require a different design, equipment and physical space for weighing anchor and getting located on an appropriate place in respect of their structures. In addition to this, the iron anchors cause dan-

ger for the benthos, because they cause destruction at the sea bottom.

[0014] Consequently, all of the above explained previous technical solutions failed to satisfy the solutions of the problems of the vessel for taking less place, lightness, easy anchoring and not to cause destruction at the sea bottom. Therefore, a technical solution that overcomes all the problems in question became obligatory.

The Purpose and Short Explanation of the Invention

[0015] The purpose of the invention is to produce an anchor to stabilize the vessels safely and quickly especially in the open sea, to drop anchor in maritime terminology and to weigh anchor.

[0016] Another purpose of this invention is; to produce such an anchor; if thrown to the sea, by quickly coming in volumetric expansion through interacting with the sea water and becoming heavier as keeping expanding and thus providing the vessel stabilizing where desired, and I when desired, getting ready to sail by removing the weight that was generated inside and collecting it quickly.

[0017] One other purpose of the invention is to structure an easy to use anchor by using the feature of the polymer material which gets heavier through collecting the water in itself, after it interacts with water, placed in a flexible bag which increases in volume as the material in it expands.

SHORT EXPLANATION OF THE FIGURES

[0018] In Figure 1, a simulation is being given, regarding the working principal as an approach for the processes of the anchor as the invention, before getting dropped into the sea and after it has been dropped to the sea.

REFERENCE NUMBERS

[0019]

10. Anchor
11. Expandable reservoir
12. Water absorbing material
12.1. Mass
13. Evacuation mechanism
14. Anchoring rope
15. Anchoring lock - ring
20. Vessel
30. Water lever (sea)

DETAILED EXPLANATION OF THE INVENTION

[0020] In this detailed description, the subject matter improvement is explained with references to examples without forming any restrictive effect in order to make the subject more understandable.

[0021] The invention is an anchor (10) especially to solve the problems being faced in the current technique defined as anchoring or stabilizing in the open sea and could not completely be solved by the various metal anchors or anchors in parachute form that were improved until today. A new alternative to the iron anchors or anchors in parachute form in various forms and structures which reaches the sea bottom or goes down for a certain depth and are used in order to stop or keep the vessels, especially ships and boats, vehicles and means like rafts, pontoons and by ground tackle applications stabilized in the open sea, has been developed through the present invention. According to Figure 1 the invention can be explained as below.

[0022] With reference to Figure 1, beside the differences from the previous technique, also the working principle of the anchor (10) is being tried to be presented. It will be sufficient to drop the anchor (10) into the sea together by means of the rope (14) or chain it is connected to where there is a need to be stabilized in any area or point on the surface of the sea (30). With reference to Figure 1, if the first condition over the water surface before it was dropped into the sea (30) is x units in volume and weight, at the end of the anchoring process it is expected to be 150 - 300 x, in other words; to reach the 150 - 300 times of its first condition weight and expand in volume constitutes its working principle.

[0023] The anchor (10) contains a structurally expandable reservoir (11), a material which absorbs water inside the mentioned reservoir (11), a rope and/or chain (14), an anchoring ring (15) where the mentioned rope is connected to the anchor (10), an evacuation mechanism (13) formed on the reservoir (11), in order to remove said mass (12.1) out of said reservoir (11).

[0024] The expandable reservoir (11) has a structure which can expand in volume up to 100 - 300 times of its present condition and at the same time keeps the material inside while it allows the water passage from outside. Nowadays, there are special textile products which fulfils all functions.

[0025] Inside the reservoir (11) a water absorbing material (12) is located which turns into a heavier mass while expanding by absorbing the water. The aforementioned material is a super absorbent polymer on the anchor (10). The super absorbent material is sodium polyacrylate super absorbent material that is preferably used in different areas today. It is known as not being harmful to the environment and has an expanding volume feature when contacting water and becoming jelly and heavy when it absorbs the water.

[0026] When the water absorbing material (12) and the anchor (10) mechanism are considered together, the working principle can be explained in this way; A certain amount of the water absorbing material (12) which was before on the ship or boat as powder - for example 1 kg - is put into the expandable reservoir (11) and the reservoir (11) is being closed. When it is dropped into the sea (20) together with the rope (14) it is connected to, the interaction with the aforementioned water absorbing material (12) starts as the result of the contact of the water

flowing through the reservoir (11) which gets filled with water. The water absorbing material (12) becomes a thick jelly and starts to expand and also make the reservoir wherein it is located, expands and becomes heavier at the same time. The reservoir (1) which expands up to 150 - 300 times in mass and volume of its first condition has now the weight and volume of the vessel (20) it is connected.

[0027] When it is desired to weigh anchor (10) and start to move again, the evacuation mechanism (13) is used. The purpose of the evacuation mechanism (13) is to take the mass (12.1) inside the reservoir (11) to out of the reservoir (11). Therefore the mechanism (13) mentioned is preferably a zip fastener or a fastening element in type of Velcro fastener which is located under the reservoir (11) and can be controlled by a cord which is released to the sea together with the rope (14). The zip fastener will be opened by pulling the mentioned cord and the mass (12.1) leaves the reservoir (1) through the earth gravity effect. Thus the reservoir (1), becoming empty, will totally get light and will easily be pulled up by means of the rope (14) rapidly and will be placed to the section formed for it on the vessel (20). In order to get it ready to anchoring again, it has to be located into the reservoir sufficient for anchoring, for example each 1 kg - polymer material (12) in packages can be prepared. In this way it will be possible to bring the anchor (10) ready to be used by locating it practically in the reservoir (11) during anchoring.

Claims

1. The invention is an anchor (10) which constitutes a specific weight in water, when dropped into the water, by means of a connection means (14) connectable to a vessel (20), in order to stabilize the vessel (20) at the desired area or point over the sea surface and it comprises an expandable reservoir (11) which permits water passage from outside into the inner section thereof and which preserves the materials positioned therein and which is connectable to the vessel (20) by means of said connection means (14) **characterized by** comprising a super absorbent polymer positioned into said reservoir (11) and which expands and gets heavy when interacting with water inside the reservoir (11).

2. An anchor (10) according to the Claim 1 wherein the super absorbent polymer is a sodium polyacrylate super absorbent.

3. An anchor (10) according to the Claim 1, **characterized in that** when the super absorbent polymer interacts with water, it turns into a mass (12.1), that becomes a solid thick gel and expands and gets heavier, inside the reservoir (11) and said super absorbent polymer provides the reservoir (11) weight to reach a weight which is sufficient to stabilize the vessel (20) at its place.

4. An anchor (10) according to the Claim 3, **characterized by** comprising an evacuation mechanism (13) formed on the reservoir (11), in order to remove said mass (12.1) out of said reservoir (11) when the vessel (20) is desired to be moved from the place thereof.

5. An anchor (10) according to the Claim 4, **characterized in that** the evacuation mechanism comprises fastening elements, which provide formation of an opening which is wide enough to allow said mass (12.1) leave the reservoir (11) and which can be controlled from the vessel (20).

Patentansprüche

1. Die Erfindung ist ein Anker (10), der beim Auftropfen ins Wasser ein spezifisches Gewicht in Wasser bildet und mittels eines Verbindungsmittels (14) mit einem Schiff (20) verbindbar ist, um das Schiff (20) an der gewünschten Stelle oder dem gewünschten Punkt über der Meeresoberfläche zu stabilisieren, und er umfasst ein expandierbares Reservoir (11), das von außen in den inneren Abschnitt davon Wasserdurchlass ermöglicht und die darin positionierte Materialien bewahrt und mittels des Verbindungsmittels (14) mit einem Schiff (20) verbindbar ist, **dadurch gekennzeichnet, dass** er ein superabsorbierendes Polymer, das in das Reservoir (11) positioniert ist und bei Wechselwirkung mit Wasser innerhalb des Reservoirs (11) expandiert und schwer wird, umfasst.

2. Anker (10) nach Anspruch 1, wobei das superabsorbierende Polymer ein superabsorbierendes Natriumpolyacrylat ist.

3. Anker (10) nach Anspruch 1, **dadurch gekennzeichnet, dass** wenn das superabsorbierende Polymer mit Wasser wechselwirkt, es sich in eine Masse (12.1) verwandelt, die ein festes und dickes Gel wird und innerhalb des Reservoirs (11) expandiert und schwer wird, und das superabsorbierende Polymer sieht vor, dass das Gewicht des Reservoirs (11) ein Gewicht erreicht, das ausreichend ist, um das Schiff (20) an seinem Platz zu stabilisieren.

4. Anker (10) nach Anspruch 3, **dadurch gekennzeichnet, dass** er ein Entleerungsmechanismus (13) umfasst, der an dem Reservoirs (11) ausgebildet ist, um die Masse (12.1) aus dem Reservoir (11) zu entfernen, wenn die Bewegung des Schiffs (20) von seinem Platz gewünscht ist.

5. Anker (10) nach Anspruch 4, **dadurch gekennzeichnet, dass** der Entleerungsmechanismus die Befestigungselemente umfasst, die die Bildung einer derartigen Öffnung bereitstellt, dass sie breit genug ist, um die Masse (12.1) von dem Reservoir (11) zu gehen, und von dem Schiff (20) gesteuert werden kann.

Revendications

1. Une ancre (10) qui constitue un poids spécifique dans l'eau quand elle est dedans, qui peut être connecté à un bateau (20) a l'intermédiaire d'un moyen de connexion (14) en vue de stabiliser le bateau (20) sur une région ou à un point en dessus de mer et elle contient un réservoir (11) élargissant qui permet au passage d'eau de la partie extérieure en partie intérieure et protectant les matériaux installés dedans et qui peut être connecté au bateau (20) a l'intermédiaire dudit moyen de connexion (14), **caractérisé en ce qu'**elle contient un polymère extra absorbant installé dans ledit réservoir (11) et qui s'élargit et devient plus lourde en cas de contact par l'eau dans le réservoir (11).

2. L'ancre (10) selon la revendication 1 **caractérisé en ce que** le polymère extra absorbant est un polyacrylate sodium extra absorbant.

3. L'ancre (10) selon la revendication 1 **caractérisé en ce que** le polymère extra absorbant, en cas de contact par l'eau dans le réservoir (11) se transforme à une masse (12.1) constitué d'un gel solide et devient plus lourde et ledit polymère extra absorbant assure que le poids du réservoir (11) achève à un poids suffisant pour stabiliser le bateau (20).

4. L'ancre (10) selon la revendication 3 **caractérisé en ce qu'elle** contient un mécanisme d'évacuation (13) formé en dessus du réservoir (11), pour faire extraire ladite masse (12.1) dudit réservoir (11) quand il est désiré de faire mouvoir le bateau (20) de sa place.

5. L'ancre (10) selon la revendication 4 **caractérisé en ce que** le mécanisme d'évacuation comprend les éléments de stabilisation assurant la formation d'une ouverture suffisamment large pour séparer ladite masse (12.1) du réservoir (11) et qui peut être contrôlés du bateau (20).

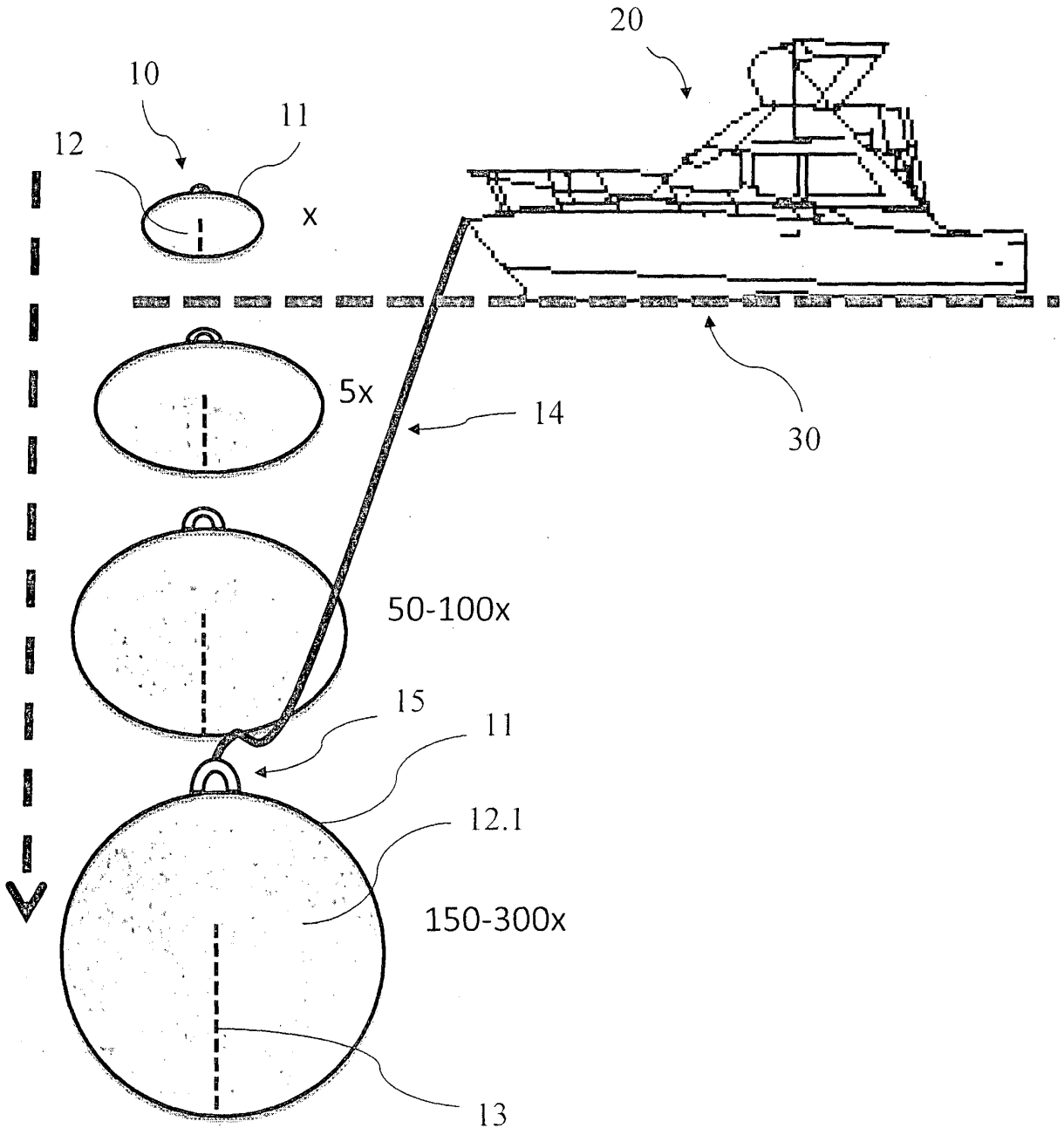


Figure 1

REFERENCES CITED IN THE DESCRIPTION

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