April 26, 1949. J. J. KELLUM 2,468,077

TUMBLE BALANCE ANCHOR SHANK

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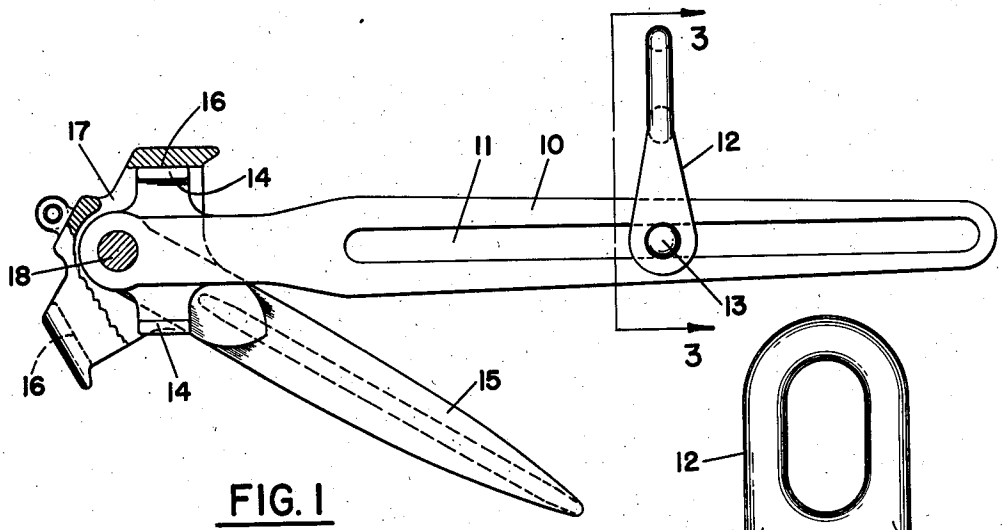


FIG. 1

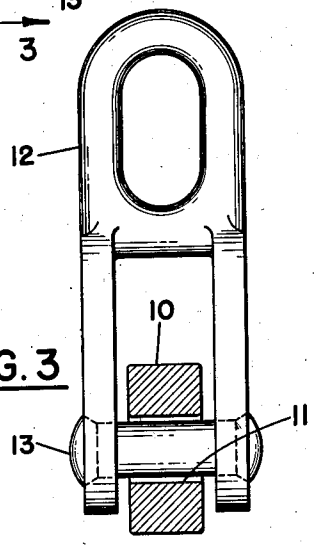


FIG. 3

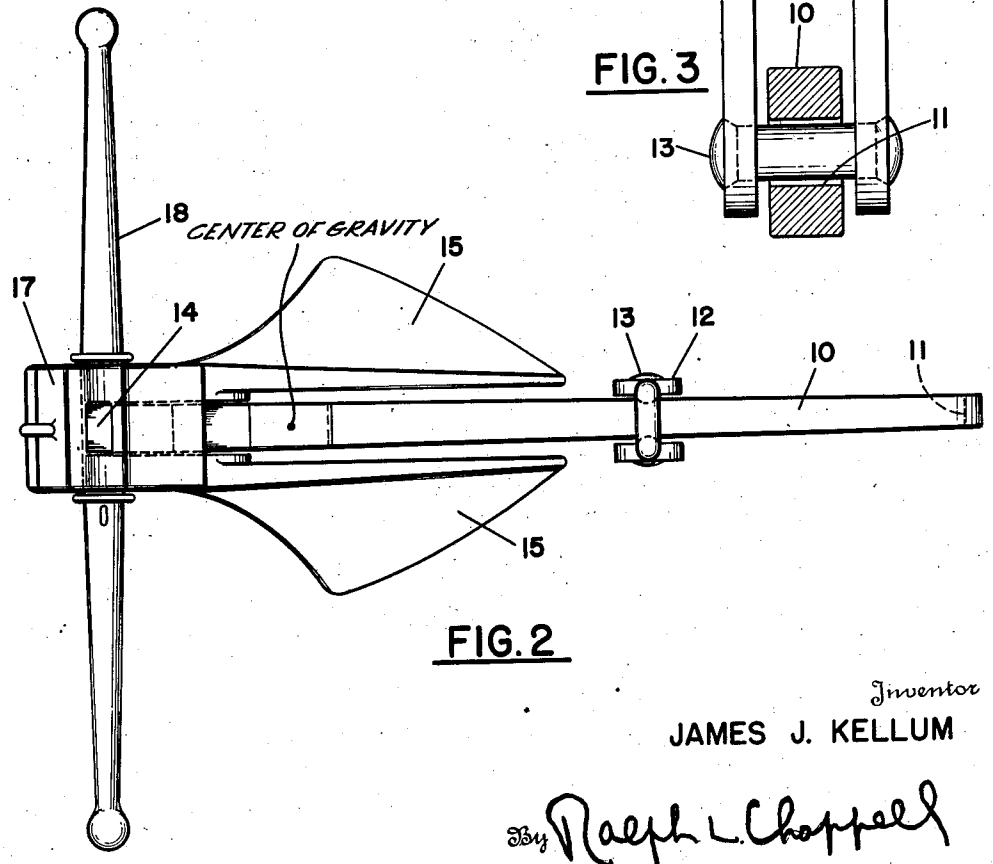


FIG. 2

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TUMBLE BALANCE ANCHOR SHANK

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1 Claim. (Cl. 114—208)

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This invention relates to ship anchors. Further, it relates to slotted shank anchors and specifically to a slotted shank, adapted to be applied to any type of ship anchor, in which (shank) the slot is positioned in a particular manner.

One object of the invention is to provide an anchor which may be readily released when "hung" on any obstruction on the sea bed.

It is with ease of recovery and ability to readily reset to which this invention is particularly drawn.

It is known in the art to provide slotted shank anchors of various and sundry types and characteristics, but in most cases, these anchors, because of their design, fail to accomplish the purpose for which they are intended. In the embodiment herein disclosed, the slot is so positioned in the shank that it is more effective in freeing the anchor when it has become hung on any obstruction.

In order to have a clearer understanding of one embodiment of the invention, reference is now made to the drawings in which:

Figure 1 is a side elevation of the anchor, partly broken away.

Figure 2 is a plan view in elevation.

Figure 3 is a transverse vertical section along line 3—3 of Figure 1. It is partly in section and partly in elevation.

In Figure 1, 10 represents the shank of the anchor provided with longitudinal slot 11. 12 represents the shackle or jew's harp which is provided with shackle pin 13. The latter extends freely through slot 11. Near the head end of the shank 10 are abutments 14 which limit the throw of flukes 15 by means of bosses 16 which are integral parts of crown 17 and flukes 15. Crown 17 and flukes 15 pivot around stock 18.

The throw of the flukes or the angle between the median plane through the flukes and the horizontal plane through the axis of the shank is preferred by some to be in the order of 30°. However, it is not desired to limit this invention to this 30° particular angle of swing as this invention is applicable to any anchor of any operable angle of swing.

In operation the anchor functions normally. But when it becomes "hung" on the bottom by overhanging ledges of rock or firmly embedded in the sea bed, this type of anchor, by reason of its

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slotted shank, is more easily freed from the holding material in the following manner. In the design of this anchor, and in particular of the anchor weighing approximately 3000 lbs., the slot extends in the shank from the shackle end to a point approximately three inches short of the center of gravity of the assembly. This distance also is the approximate width of the shackle pin slot 11. The effect of this design is that in freeing the anchor from hung position, the ship is made to pass over the anchor in the direction opposite to that in which it was first set, and shackle 12 and shackle-pin 13 move in the slot to the end thereof toward the crown and flukes. A pull now exerted on the anchor cable exerts a component of force in the plane of the fluke on reverse course. This component of force disengages the flukes from the holding material.

By reason of the fact that the pull is exerted short of the center of gravity of the assembly when the anchor is freed, it may readily be weighed and recovered or reset in a new direction of pull.

Due to the fact that the pull is exerted short of the center of gravity of the assembly when the anchor is freed from its holding medium, it either swings around in a horizontal plane or tumbles vertically. In either case the flukes, if the anchor is not weighed, assume a position of immediate resetting in a new direction of pull if so applied.

After retraction of the anchor from its holding ground with the pull essentially vertical, the shackle moves in the slot to the shackle end of the shank and the assembly assumes normal position.

While the particular embodiment herein shown has been drawn to slotted shank anchors of the stock and pivoted double fluke type, the principle herein involved is applicable to all types of ship anchors and such application is included within the scope of the present invention.

The invention described herein may be used by or for the Government of the United States for governmental purposes without the payment to me of any royalties thereon or therefor.

What is desired to be secured by Letters Patent of the United States is:

A ship anchor adapted to be freed when "hung" in operation, comprising an assembly of a slotted

shank provided with a head portion, a shackle and shackle-pin freely engaging said shank, a stock adapted to extend through the head portion of the shank, and integral crown and flukes rotatable on the stock near the shank and limited in rotation thereon, said shank being provided with a uniform, longitudinal slot extending from approximately the shackle end of the shank toward the head portion thereof to a point just short of the center of gravity of the assembly by a distance approximately equal to the shortest dimension of said slot, said slot extending along

the shank and through the shank parallel to the stock.

JAMES J. KELLUM.

REFERENCES CITED

The following references are of record in the file of this patent:

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