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 J. B. JAKOBSEN, ADMINISTRATOR.
 SEA ANCHOR.
 APPLICATION FILED OCT. 29, 1909.

990,596.

Patented Apr. 25, 1911.

Fig. 1.

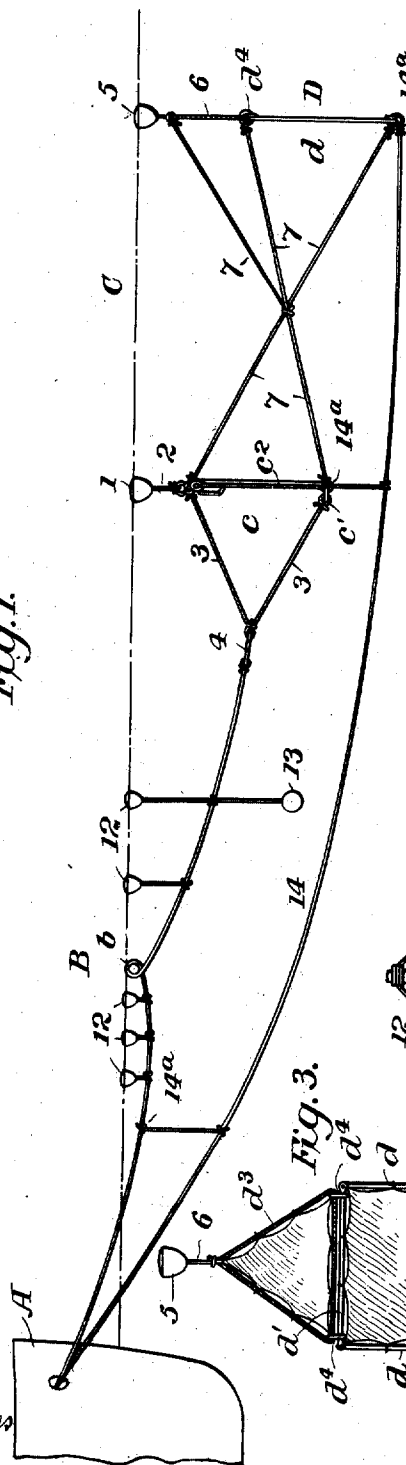


Fig. 2.

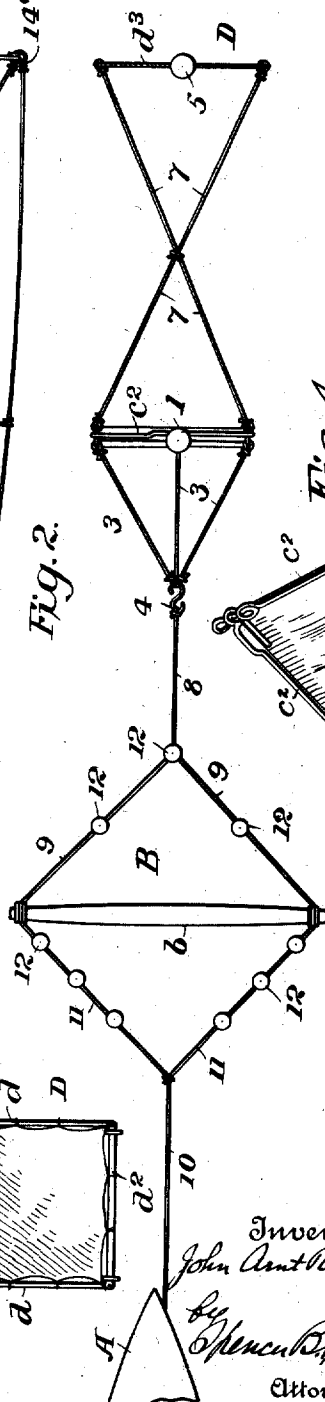


Fig. 3.

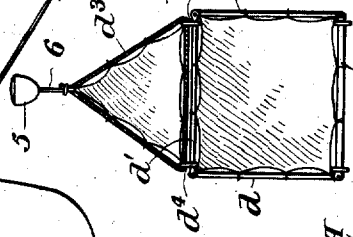
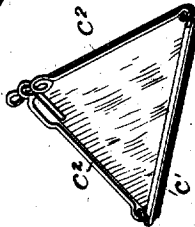


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN ARNT ROSVOLD, OF NOME, DISTRICT OF ALASKA; JORGEN B. JAKOBSEN ADMINISTRATOR OF SAID JOHN A. ROSVOLD, DECEASED.

SEA-ANCHOR.

990,596.

Specification of Letters Patent.

Patented Apr. 25, 1911.

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To all whom it may concern:

Be it known that I, JOHN ARNT ROSVOLD, a citizen of the United States, residing at Nome, in the District of Alaska, and now temporarily residing at Bryn Mawr, King county, Washington, have invented certain new and useful Improvements in Sea-Anchors, of which the following is a specification.

My invention relates to the mooring of vessels at sea, and has for its object the provision and construction of a combination of apparatus which, while it is suitable for vessels of any size, it particularly is designed for, and adapted for use with, large vessels for the purpose of holding their bows to the seas and preventing drifting. Also, for protecting the vessels in storms at sea.

My invention consists in the novel details of construction and combination of parts hereinafter set forth, and shown in the accompanying drawings in which—

Figure 1 is a view in side elevation showing my new form and combination series of sea anchors connected for use to a wave breaker and vessel; Fig. 2 is a plan view of the same; Fig. 3 is a front view of the last or "tail" anchor of the series; and Fig. 4 is a front view of the front anchor of the series.

Referring to the drawings, A represents the vessel, B a wave breaker, and C a series of sea anchors or drags.

The front or first sea anchor *c* of the series is shown as a foldable, triangular frame and may be constructed as described in Patent No. 898,266, granted to me September 8, 1908, the lower bar *c'* being made heavier or weighted and having the side bars *c''* pivotally attached thereto. This frame is covered with canvas or other suitable material as indicated in said patent, to which reference may be had for further details. This sea anchor is supported the proper depth under water by float 1, from which it is suspended by rope 2, and is connected by ropes 3 and connection 4 to vessel A, either directly or through wave breaker B.

In drawing on the series of sea anchors, the vessel causes them to move through the water, and when all the anchors are the same size and shape of the first anchor, as in the previous arrangements, they will all follow in the current set up by the first and will therefore add very little to its resisting capacity. I make the successive individual anchors of

the series progressively larger in size and effective area, and the last, or "tail" anchor of the series is preferably of different shape, having a greater number of sides for added efficiency. In the drawings I have shown the series as composed of two anchors only, but it will be understood that any number may be inserted between the first and the last, shown.

The last, or "tail" sea anchor D is constructed preferably of a rectangular metal frame composed of side bars *d*, a top bar *d'*, and a bottom bar *d''*, all pivotally connected so as to be foldable, the bar *d''* being heavier than the others for greater stability. This frame is covered with canvas or other suitable material, as usual. Surmounting the rectangular frame is a triangular extension preferably composed of rope *d'''* secured to upper bar *d'*, at *d''*, *d''*. The whole frame is supported by float 5 connected by rope 6 to the apex of the triangular portion. Tail anchor D is connected by ropes 7, or in any other suitable manner, to the anchor next in advance.

The wave breaker, when used, may be as described in my aforesaid patent, comprising a spar or post *b* connected from its ends to rope 8 by means of ropes 9 on one side, and to rope 10 on the other side by means of ropes 11, the rope 10 being attached to the bow of the vessel. The ropes 9 and 11 are so proportioned that the spar *b* is held parallel to the working surfaces of the sea anchors, and these ropes are supported at the proper depth below the surface of the water by means of small buoys or floats 12. A weight 13 holds down the lead rope 8.

For convenience in setting out and taking in the device, a trip rope 14 is employed connected at 14^a with each sea anchor of the series and the wave breaker.

The number of individual anchors of the series will depend upon the size of the vessel—the larger the vessel, the more anchors required—the anchor next to the vessel or wave breaker being the smallest and they should gradually increase in size.

Instead of a single series of anchors, I may use two series—one on each side of the vessel to keep the vessel from drifting in heavy storms.

Many modifications may be made without departing from my invention, and these I aim to cover by the appended claims.

Having described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In combination, a wave breaker adapted to float upon the surface of the water, a plurality of sea anchors connected in series, the first of the series being attached to said wave breaker, and the last of the series having a greater effective area composed of a rectangle with triangle attached to one side, substantially as described.

2. In combination, a plurality of sea anchors connected in series, the first of the series being triangular and attachable to a vessel, and the last of the series having a greater effective area composed of a rectangle with triangle attached to one side, substantially as described.

3. A sea anchor or drag comprising a rectangular metal frame, a triangular frame of lighter flexible material having one of its sides connected to the upper side of said rec-

tangular frame, a float connected to the apex of said triangular frame, and a suitable covering or web for each frame, substantially as described. 25

4. A sea anchor or drag comprising a rectangular metal frame the sides of which are pivotally connected, the lower side being heavier than the others, a triangular frame of lighter flexible material having one of its sides connected to the upper side of said rectangular frame, a float connected to the apex of said rectangular frame, a suitable covering or web for each frame, and connecting means from said rectangular frame and the apex of said triangular frame to a common point, substantially as described. 30 35

In testimony whereof I have affixed my signature, in presence of two witnesses.

JOHN ARNT ROSVOLD.

Witnesses:

J. B. JAKOBSEN,
C. O. QUALHEIM.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."