J. J. FERKO.

STABILIZER FOR BOATS.

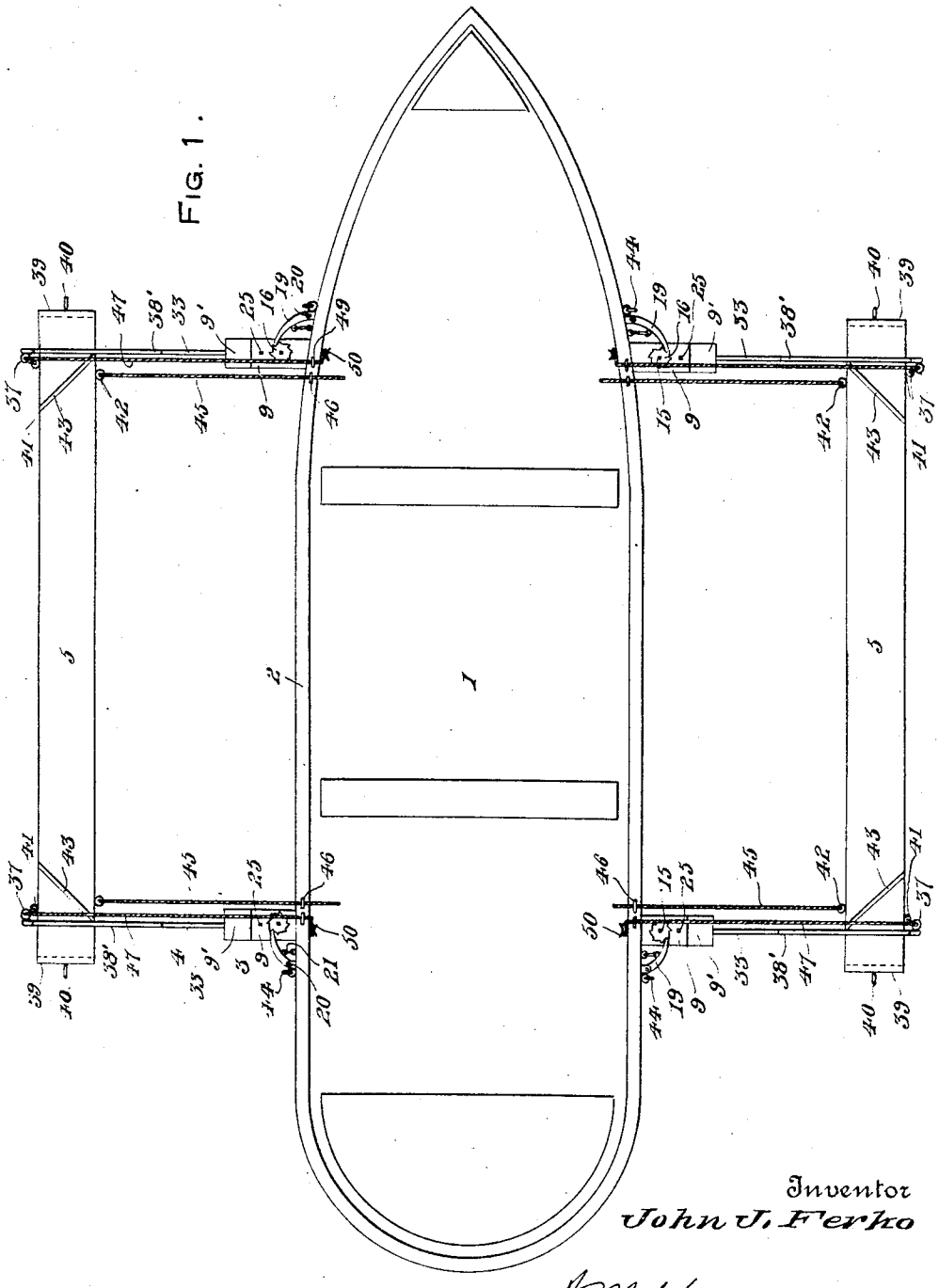
APPLICATION FILED NOV. 18, 1919.

1,336,688.

Patented Apr. 13, 1920.

7 SHEETS—SHEET 1.

FIG. 1.



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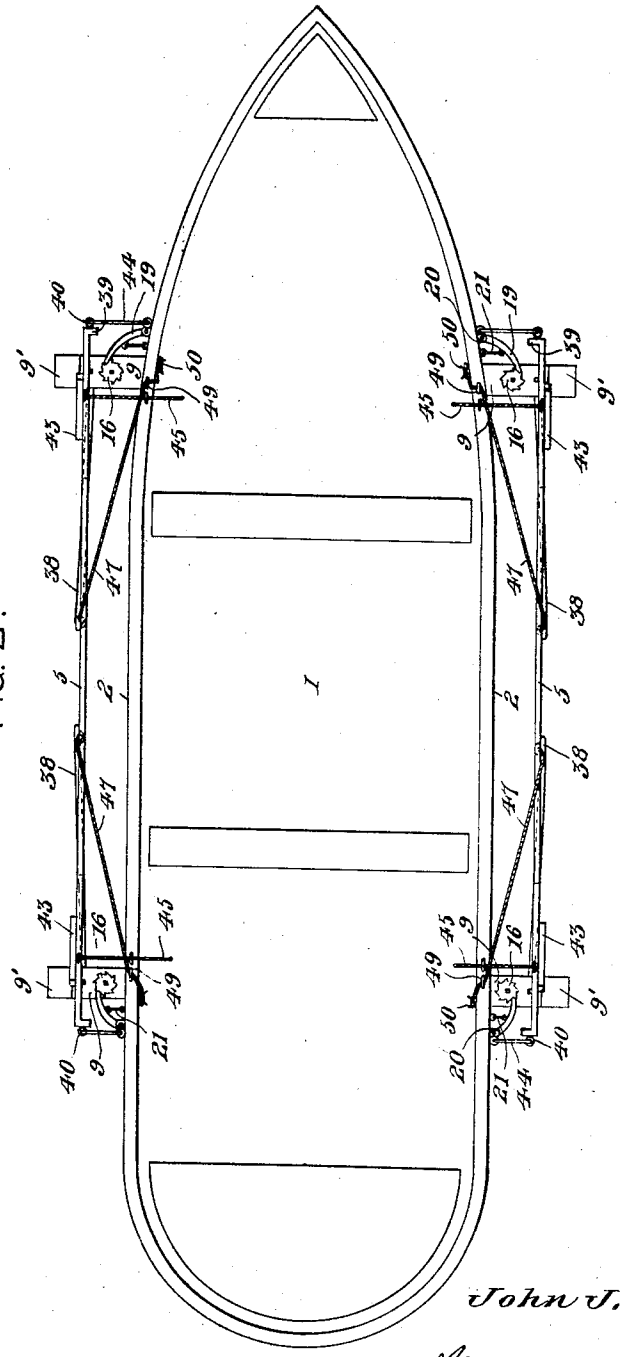
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7 SHEETS—SHEET 2.

FIG. 2.



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7 SHEETS—SHEET 3.

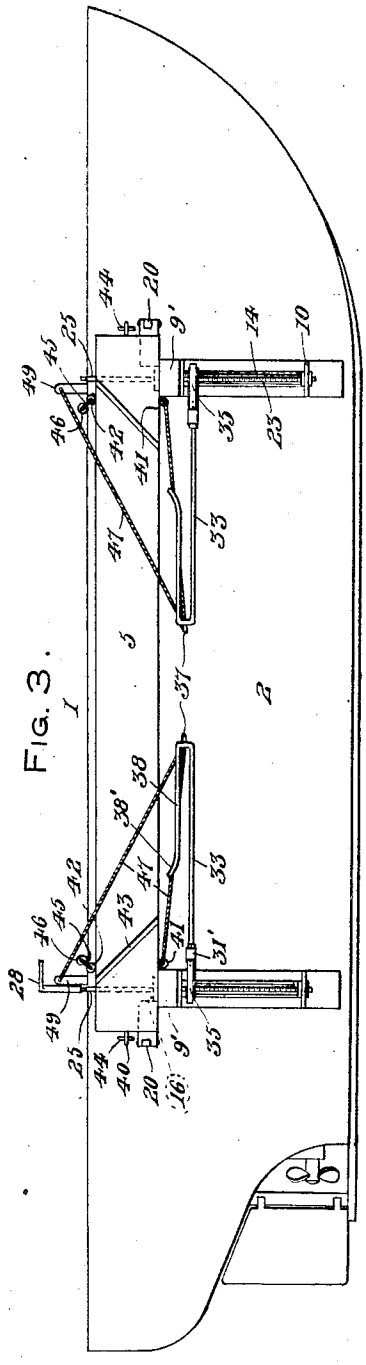


FIG. 3.

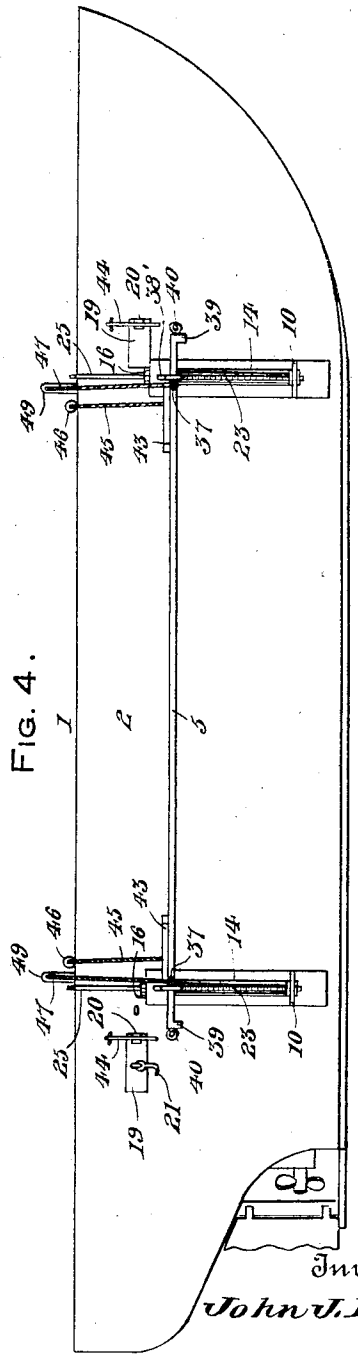


FIG. 4.

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7 SHEETS—SHEET 4.

FIG. 5.

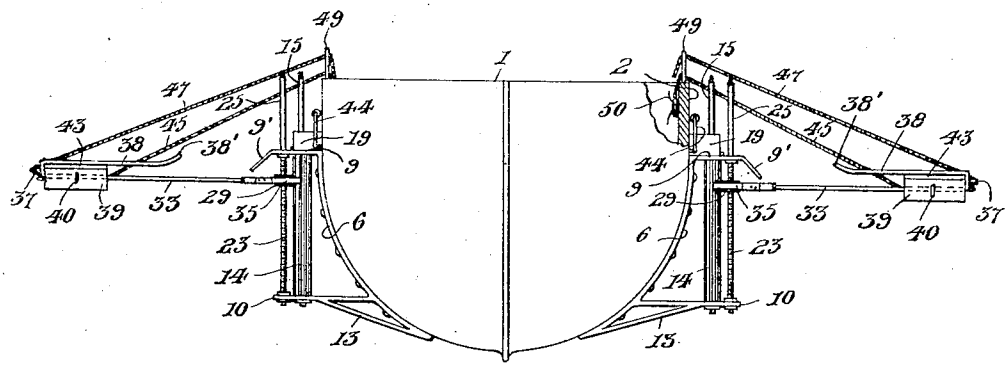


FIG. 6.

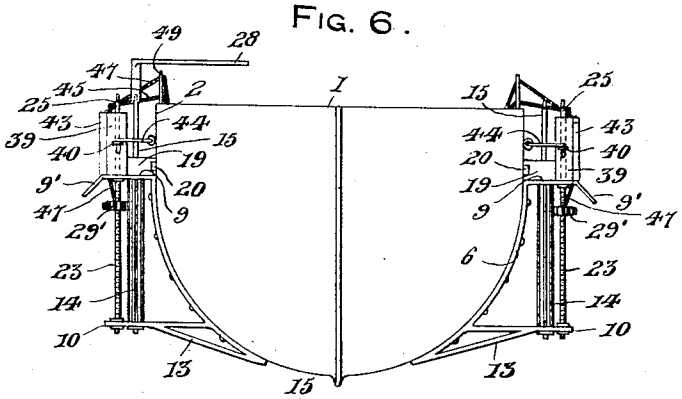
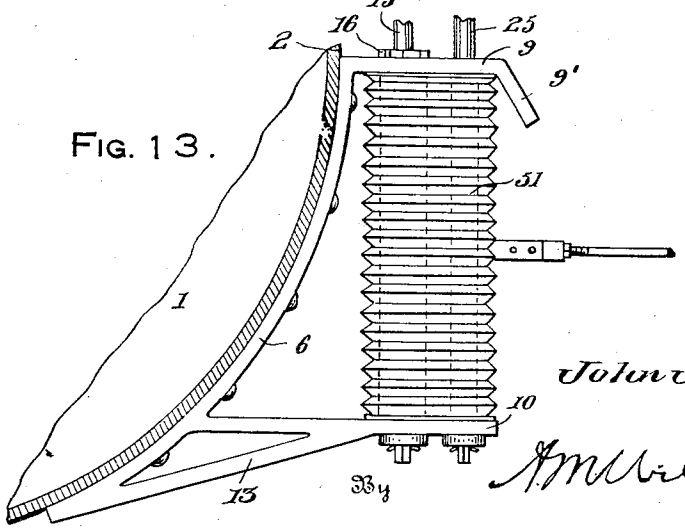


FIG. 13.



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7 SHEETS—SHEET 5.

FIG. 7.

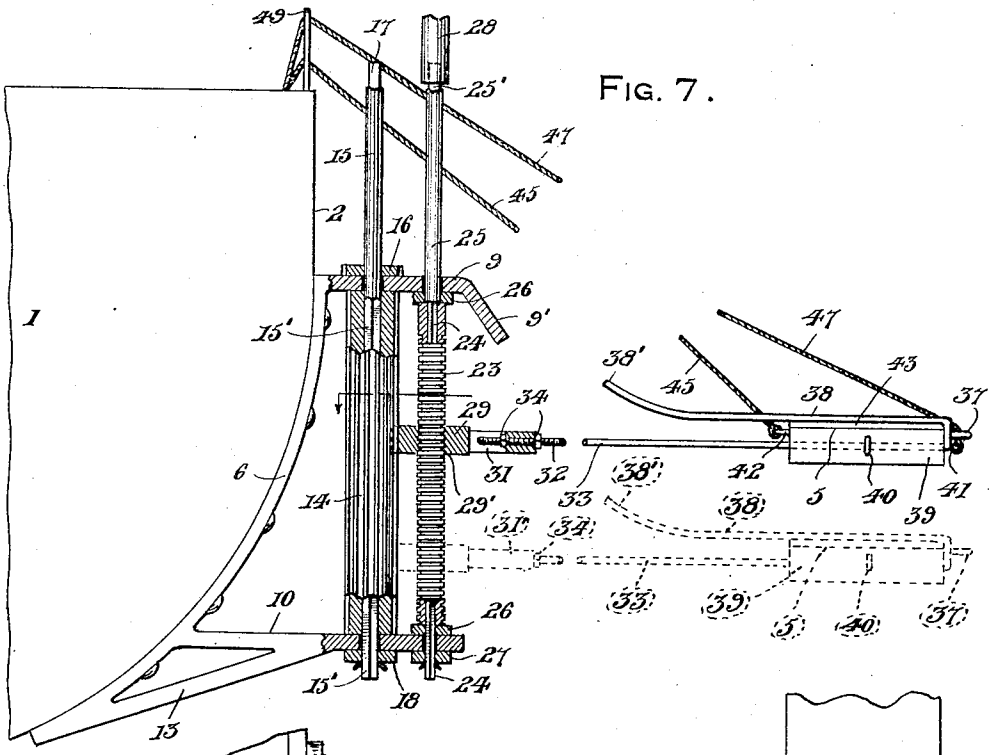


FIG. 8.

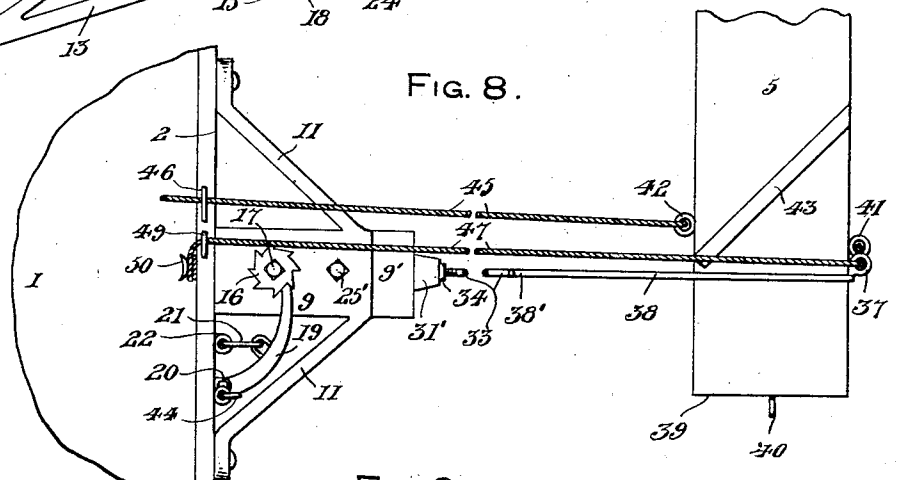
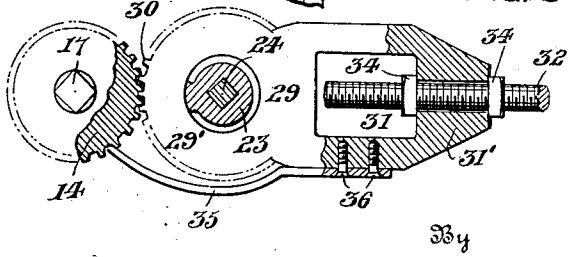


FIG. 9.



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7 SHEETS—SHEET 6.

FIG. 10.

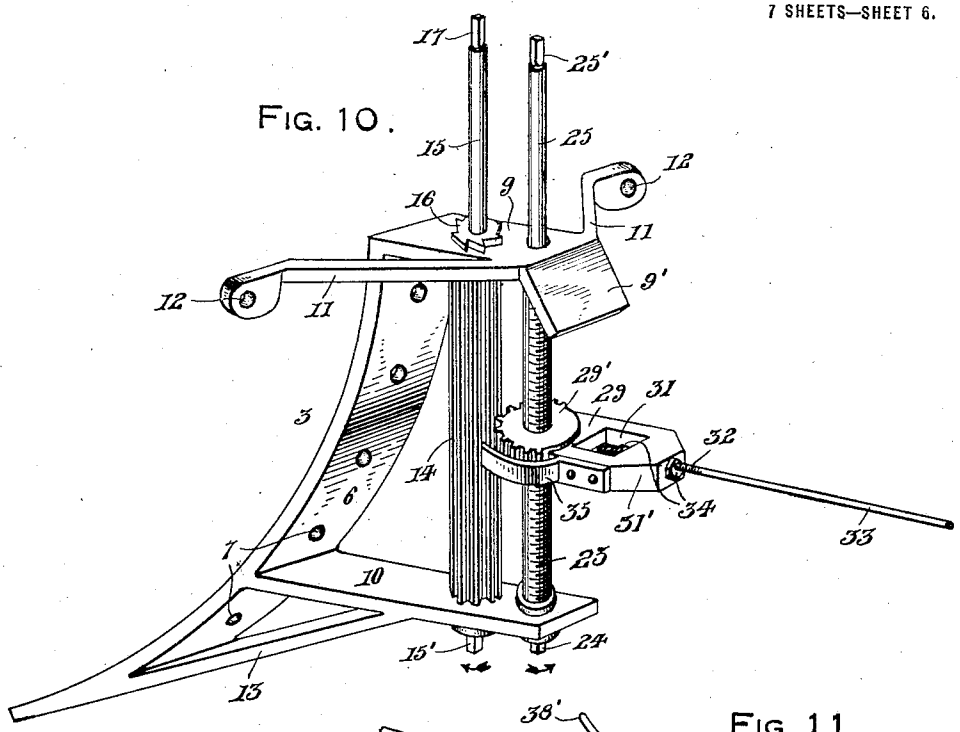


FIG. 11.

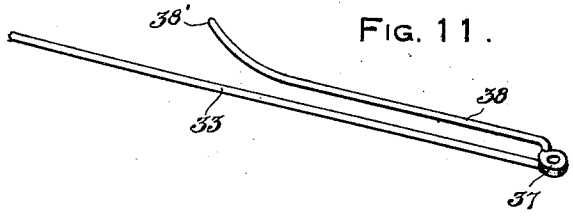
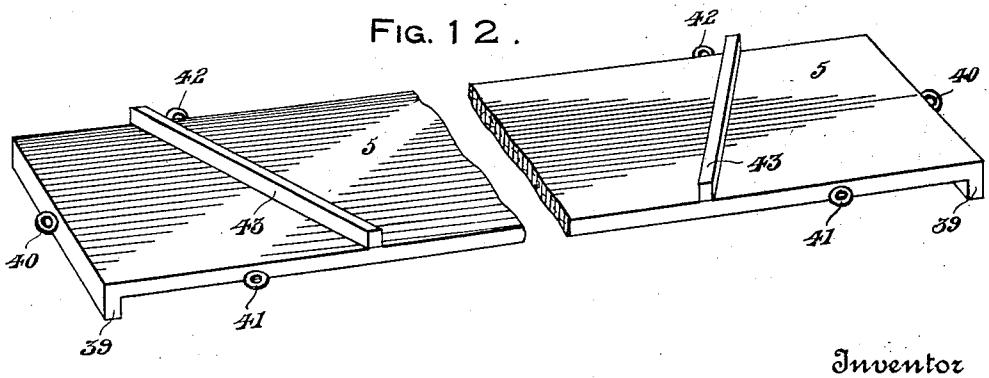


FIG. 12.



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7 SHEETS—SHEET 7.

FIG. 14.

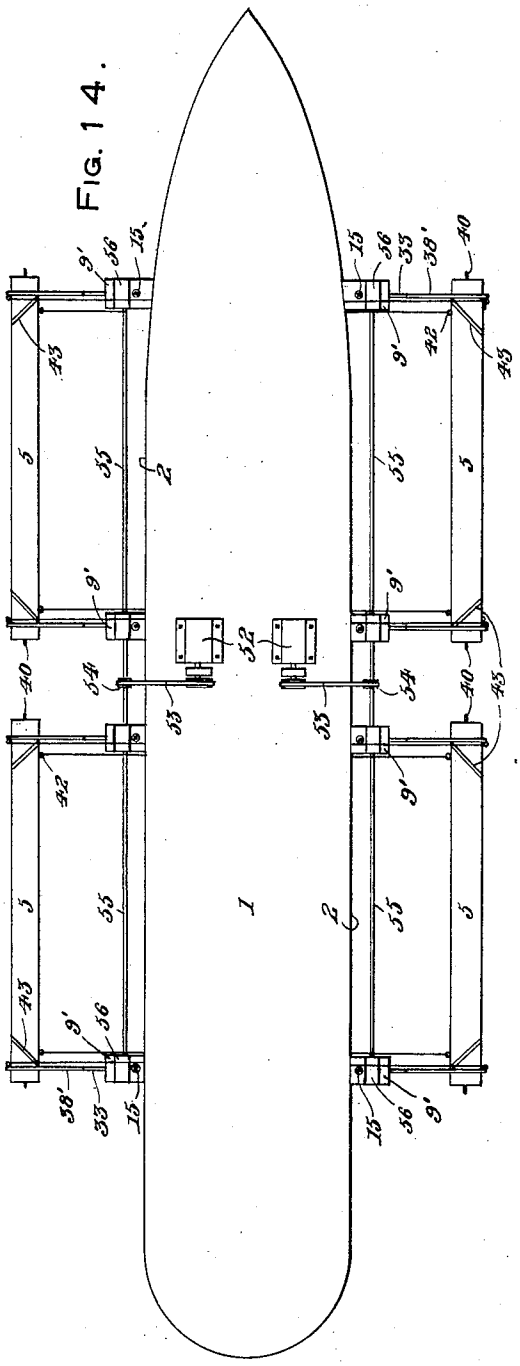
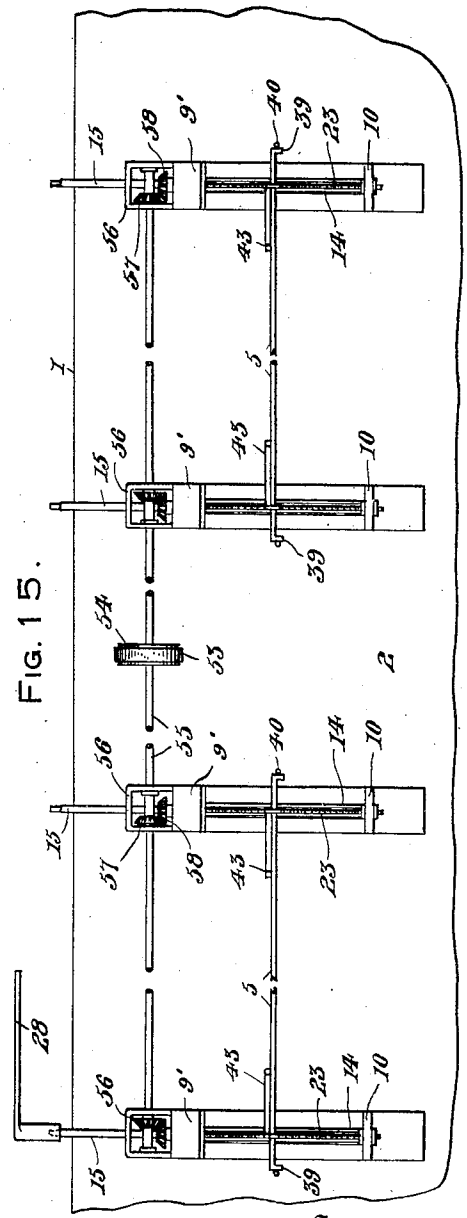


FIG. 15.



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UNITED STATES PATENT OFFICE.

JOHN J. FERKO, OF CLEVELAND, OHIO.

STABILIZER FOR BOATS.

1,336,688. Specification of Letters Patent. Patented Apr. 13, 1920.

Application filed November 18, 1919. Serial No. 338,817.

To all whom it may concern:

Be it known that I, JOHN J. FERKO, a citizen of the United States of America, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Stabilizers for Boats, of which the following is a specification.

The primary object of the present invention resides in the provision of a stabilizer for boats, and has particular reference to a collapsible stabilizing device that is adapted to be folded or moved to a position adjacent the gunwales of a boat when out of use, the stabilizer being operable from a point within the boat and capable of being easily and quickly moved to its operative position at points spaced from the opposite sides of the boat whereby the boat is maintained stabilized regardless of the rolling of the waves.

It is also intended that in addition to the present device performing the functions of a stabilizer, a raising means is provided whereby the hull of the boat may be slightly elevated in the water by the lowering of the stabilizing devices relative to the boat so that the hull of the boat may be elevated from a sand bar or other unseen obstruction in the water.

With the above and other objects in view, the invention consists in the novel form, combination and arrangement of parts herein fully described and shown in the accompanying drawings, wherein like reference characters indicate similar parts throughout the several views.

In the drawings,

Figure 1 is a top plan view of a boat provided with the present stabilizing device in extended operative position thereon,

Fig. 2 is a top plan view similar to Fig. 1 with the stabilizing device retracted into inoperative position.

Fig. 3 is a side elevational view of the boat showing the stabilizing device at one side thereof in retracted inoperative position,

Fig. 4 is a view similar to Fig. 3 with the stabilizing device extended to its operative position,

Fig. 5 is an end elevational view from the bow of the boat showing the stabilizing devices extended to operative position,

Fig. 6 is an end elevational view similar to Fig. 5 with the stabilizing devices retracted,

Fig. 7 is an enlarged fragmentary view, partially in section of a portion of the boat and one of the stabilizing devices showing the manner of raising and lowering the stabilizing device and for moving the same into operative and inoperative positions.

Fig. 8 is a top plan view of the construction disclosed in Fig. 7 showing the ratchet and dog for holding the stabilizer in its extended position and the operating ropes for shifting the stabilizers,

Fig. 9 is a cross sectional view taken on line IX—IX of Fig. 7, showing the arm carried by the shiftable frame for engaging the corrugated bar to limit the opening movement of the stabilizer supporting arms,

Fig. 10 is a perspective view of one of the stabilizer supports shown in Fig. 7,

Fig. 11 is a perspective view of the supporting arm for the stabilizer,

Fig. 12 is a perspective view, partially broken away of one of the stabilizers illustrating the guiding cleats carried thereby,

Fig. 13 is a fragmentary side elevational view of a portion of the boat hull and stabilizer supporting bracket with flexible carrying for the operating shafts,

Fig. 14 is a top plan view of a modified form of the invention showing motive means for raising and lowering the stabilizing devices, and

Fig. 15 is a side elevational view thereof.

The present invention has particular reference to a stabilizer for boats and it is intended that the form of stabilizer hereinafter described is to be considered in its broadest scope so that a stabilizer for boats may be constructed of any design desired for attachment to boats of different sizes and shapes, it being intended to attach these stabilizers to row boats, motor boats and sail boats of a smaller type for rivers and lakes and also to construct larger stabilizing devices for attachment to sea-going vessels. The stabilizers are operable from a position within the boat and when in their inoperative positions lie adjacent the gunwales exteriorly of the boat, while the change of position to render the stabilizing devices operative distends the same and moves them outwardly to a point spaced from the boat. Should a storm or the rolling of the water be encountered, the stabilizing devices may be easily and quickly distended from their inoperative to their operative positions whereby the boats will be maintained sub-

stantially level upon the surface of the water and free of any unusual rolling and pitching thereof. The stabilizing devices are also capable of vertical adjustment relative to their supports, and the boat so that in case a sand bar is struck by the boat, or the boat runs into shallow water, the stabilizing devices may be lowered and being buoyant, will raise the boat in the water to free the same from the obstruction therebeneath and permit an unobstructed forward travel of the boat. With a device of this character, which is extremely simple in construction and inexpensive to manufacture, small boats may be easily equipped with the same and the usual danger present in a storm will be greatly reduced as the boat will tend to ride more evenly upon the waves and be substantially non-capsizable.

Referring more in detail to the accompanying drawings, there is illustrated a boat 1 of any type of construction desired and as shown in Figs. 3 and 4, the same is in the form of a launch embodying the usual motor-operated propeller and steering rudder.

As shown in Figs. 1 to 4, the sides 2 of the boat carry brackets 3 in which arms 4 are pivotally supported while stabilizers 5 in their inoperative positions being supported on the brackets 3 are adapted when extended to their operative positions to be supported on the arms 4, the arms 4 when inoperative being arranged adjacent the sides of the boat as indicated in Figs. 2 and 3 and extending outwardly therefrom at right angles as illustrated in Figs. 1 and 4 when in their operative positions.

The form of bracket with the structure supported thereby is clearly shown in detail in Figs. 7 to 12, the bracket 3 including a curved plate 6 adapted to engage the side 2 of the boat throughout its length and being provided with a plurality of openings 7 for the reception of retaining bolts or screws. Upper and lower arms 9 and 10 arranged in parallelism project outwardly from the curved bracket plate 6, the upper arm 9 having angular brace extensions 11 having end securing members 12 for attachment to the side walls 2 of the boat as clearly indicated in Figs. 8 and 10, while the lower arm 10 is supported by an angle brace 13 extending between the curved plate 6 and said arm. A downwardly inclined extension 9′ is carried by the arm 9 at the free end thereof for purposes presently to appear.

A longitudinally grooved cylinder 14 is arranged between the arms 9 and 10 adjacent the inner ends thereof and is provided with a rectangular bore to receive a rectangular portion 15′ of the rod 15, the rod 15 projecting above the upper arm 9 and having a ratchet wheel 16 fixed thereto above said arm while the upper terminal end of the rod 15 is polygonally formed as at 17 for the reception of an operating key. The lower end of the squared portion 15′ of the shaft projects through and beneath the arm 10 for free rotation therein, the lower projecting end 15′ receiving a nut 18 coöperating with the ratchet 16 to prevent vertical movement of the rod.

As shown more clearly in Figs. 1 to 4 and 8, a dog 19 is pivotally mounted as at 20 to the side 2 of the boat and adapted to have the free end thereof moved over the upper arm 9 as shown in Fig. 8 for engagement with the ratchet wheel 16. To hold the dog 19 in locked engagement with the ratchet wheel 16, there is provided a hook 21 suspended from the inner face of the dog 19 and engageable with an eye-bolt 22 secured to the side 2 of the boat.

A vertical screw 23 is positioned between the upper and lower arms 9 and 10 and has a keyed bore for the keyed portion 24 of the rod 25, bearing washers 26 being arranged above and below the screw 23 and inwardly of the arms 9 and 10, while a fastening nut 27 is secured upon the lower projecting end 24 of the rod 25 for retaining the rod in position in the screw. The upper end of the rod 25 projects above the arm 9 and is provided with a key receiving portion 25′ adapted for the reception of an operating key 28.

A vertically adjustable frame 29 is adjustably associated with the screw 23 and corrugated member 14, and includes a substantially circular head portion 29′ provided with teeth 30 upon the periphery thereof while the rear end of the frame 29 is provided with a relatively large opening 31 having an outer cross arm 31′ through which the threaded end 32 of the stabilizer supporting arm 33 extends, the stabilizer arm 33 being shown in detail in Fig. 11, while lock nuts 34 are provided on the threaded end 32 of said arm at opposite sides of the cross bar 31′. A spring arm 35 is secured as at 36 to the frame 29 and is adapted to have the free end thereof engage the corrugated member 14 for purposes presently to appear.

The stabilizer supporting arm 33 has an offset ring 37 carried by the outer end thereof with a vertically alined stabilizer guide arm 38 extending thereover with the inner end of the guide arm curved upwardly as at 38′.

The stabilizers 5 may be of any character desired such as boards, or air tanks, and as illustrative of the present invention, stabilizer boards are disclosed, the ends thereof being provided with flanges 39 extending from the same face of the stabilizer and having an eye-bolt 40 secured midway the ends thereof. Slightly offset eye-bolts 41 and 42 are carried by the opposite side edges of the stabilizer 5 adjacent each end thereof

while the plain face of the stabilizer carries diagonal cleats 43 extending between adjacent eyelets 41 and 42 as shown in the several figures, and in detail in Fig. 12.

When the stabilizers are in their inoperative positions, the same are supported upon the forward edge of the upper arm 9 with hooks 44 engaging the end eye-bolts 40 on said stabilizers, while ropes 45 secured in eyelets 42 pass through guides 46 on the gunwale of the boat for fastening interiorly thereof. Operating ropes 47 are threaded through the eyelets 37 and are secured to the eye-bolts 41 with the inner end thereof passed through the guide 49 on the gunwale of the boat and secured to the clevis 50.

As above stated, when the stabilizers 5 are in their operative positions, the same are supported on the forward edges of the upper arms 9 with the hooks 44 engaging the eye-bolts 40. When the stabilizers are so arranged, the stabilizer supporting arms 33 lie substantially parallel to the sides 2 of the bolt, and assuming that it is desired to project the supporting arms to receive the stabilizers, the dogs 19 are released from the ratchets 16 and the implement 28 applied to the upper key end 17 of the shaft 15 to rotate the corrugated member 14, during which movement the frame 29 will be rotated on the screw 23 by its toothed engagement 30 with said corrugated member and the outwardly swinging movement of the supporting arms 33 will be limited by the spring arm 35 of the frame engaging the corrugated member as illustrated in Figs. 5, 9, and 10, after which movement, the dogs 19 are returned to engaging position with the ratchet wheel 16 and locked thereto by the hook and eye connection 21 and 22, thus to prevent movement of the stabilizer supporting arms 33 relative to the boat 1. During this movement, the rope 47 is fed outwardly by the eye connection 37 therewith, and by pulling upon the ropes 47, the stabilizers 5 connected thereto by the eye-bolts 41 are moved from the arm 9 and in riding upon the apron 9′ will be received upon the supporting arm 33 and beneath the guide arm 38. By a continued pull upon the ropes 47, the guide arms 38 with their curved ends 38′ engage the diagonal cleats 43 upon the stabilizers for correctly centering and positioning the same. When the stabilizers are at their outermost extended positions, the ropes 47 are secured to the clevises 50 and the stabilizers are maintained in a fixed position relative to the boat while laterally swinging movements of the supporting arms 33 are prevented by the locked dog connections with the ratchet wheel 16 of the corrugated members 14.

In withdrawing the stabilizers into inoperative positions, the rope 47 is released from the clevis 50 and the ropes 45 connected to the eye-bolts 42 are drawn inwardly to remove the stabilizers 5 from the supporting arms 33 and position the same as illustrated in Figs. 1, 3, and 6 to a position to be supported upon the upper arms 9 at which time the hooks 44 engage the eye-bolts 40 in the ends of the stabilizers. The dogs 19 are then released from the ratchets 16 and by partially rotating the corrugated elements 44, the frame members 29 are shifted by the gear connection 30 to a position adjacent the sides 2 of the body while a reëngagement of the dogs and ratchet wheels locks the arms in their inner retracted positions. It will therefore be seen that the stabilizers 5 may be easily and quickly moved into their operative positions at points spaced outwardly of the offset sides of the boat should it be necessary to provide a stabilizer for the boat.

The present invention is also adapted for elevating or raising the boat in the water should the boat strike a sand bar or run into shallow water and this raising movement of the boat is accomplished by lowering the stabilizers. The stabilizers may be raised or lowered regardless of position by simply rotating the shaft 25 and the screw 23 working through the head 29′ of the frame will raise and lower said frame and with it the stabilizer supporting arms so that with the lowering movement of the arms, the stabilizers 5 are supported upon the water at points closer to the bottom of the boat for purposes of elevating the boat in the water and removing the same from contact with an obstruction therebeneath.

A modified form of the invention is shown in Fig. 13 and in this figure, all of the essential details above set forth are included, but in this instance, the corrugated member 14 and the operating screw 23 are inclosed by a threaded flexible connection 51 to protect the parts from seaweed or other refuse in the water.

Another modified form of the invention is disclosed in Figs. 14 and 15, and in lieu of a key being employed for rotating the screw 23, motors 52 are carried by the boat and have belt connections 53 with pulleys 54 upon shafts 55, the shafts extending through housings 56 inclosing the upper end of the screws 23 and carrying beveled pinions 57 meshing with pinions 58 upon the upper ends of screws 23 for the purpose of rotating the screws in either direction to raise and lower the frames 29 and supporting arms 33. It is preferable to employ motors 52 when the stabilizers are designed for attachment to sea-going vessels.

From the above detailed description of the invention, it will be readily seen that

a stabilizer that is simple in point of construction and inexpensive to manufacture, may be attached to any form of boat of suitable construction and be readily moved from its inoperative to its operative position for purposes of stabilizing the boat and also for elevating the boat to permit the passage of the same over an obstruction, and while there are herein shown and described the preferred forms of the invention, it is nevertheless to be understood that minor changes may be made therein without departing from the spirit and scope of the invention as claimed.

What is claimed as new is:

1. The combination with a boat provided with brackets upon the sides thereof, of supporting arms movably supported thereby, and stabilizers adapted to be supported by and rest upon the outer ends of said arms.

2. The combination with a boat provided with brackets upon the sides thereof, of supporting arms movably supported thereby, and stabilizers adapted to be supported by and rest upon the outer ends of said arms, when operatively positioned, said stabilizers when in inoperative positions being mounted on said brackets.

3. A stabilizer for boats comprising mounting brackets, supporting arms movably supported thereby and stabilizers adapted to be supported by the outer ends of said arms, said stabilizers when in inoperative positions being mounted on said brackets, and independent ropes connected to said stabilizers for moving the same inwardly and outwardly on said supporting arms.

4. A stabilizer for boats comprising mounting brackets, supporting arms movably supported thereby and stabilizers adapted to be supported by the outer ends of said arms, said stabilizers when in inoperative positions being mounted on said brackets, and independent ropes connected to said stabilizers for moving the same inwardly and outwardly on said supporting arms, one of said ropes of each stabilizer freely extending through the outer end of the adjacent arm.

5. A stabilizer for boats comprising mounting brackets, horizontal supporting arms movably supported thereby and stabilizers adapted to be supported by the outer ends of said arms, and means for raising and lowering said horizontal arms.

6. A stabilizer for boats comprising mounting brackets, supporting arms movably supported thereby and stabilizers adapted to be supported by the outer ends of said arms, and means for raising and lowering said arms, said means including a screw, and a frame for supporting the arms threaded on said screw.

7. A stabilizer for boats comprising mounting brackets, supporting arms movably supported thereby and stabilizers adapted to be supported by the outer ends of said arms, and means for raising and lowering said arms, said means including a screw having a keyed bore, a shaft extending through said bore for operating said screw and a frame adjustable on said screw and supporting said arms.

8. A stabilizer for boats comprising mounting brackets, horizontally swinging supporting arms carried thereby and being vertically adjustable, stabilizers adapted to be supported by the outer ends of said arms, and means for moving the arms from a position adjacent the boat to an extended operative position.

9. A stabilizer for boats comprising mounting brackets, horizontally swinging supporting arms carried thereby and being vertically adjustable, stabilizers adapted to be supported by the outer ends of said arms, means for moving the arms from a position adjacent the boat to an extended operative position, and means for limiting the movement of the arms in outward direction.

10. A stabilizer for boats comprising mounting brackets, supporting arms movably supported thereby and stabilizers adapted to be supported by the outer ends of said arms, a corrugated member for moving the arms from a position adjacent the boat to an extended operative position, and means carried by said frame adapted to engage said corrugated member to limit the movement of the frame in one direction and means for operating said corrugated member.

11. A stabilizer for boats comprising mounting brackets, supporting arms movably supported thereby and stabilizers adapted to be supported by the outer ends of said arms, a corrugated member for moving the arms from a position adjacent the boat to an extended operative position, a spring arm carried by said frame adapted to engage the corrugated member to limit the movement of the frame in one direction and means for rotating the corrugated member.

12. A stabilizer for boats comprising mounting brackets, supporting arms movably supported thereby and stabilizers adapted to be supported by the outer ends of said arms, a corrugated member for moving the arms from a position adjacent the boat to an extended operative position, a spring arm carried by said frame adapted to engage the corrugated member to limit the movement of the frame in one direction, means for rotating the corrugated member, and means for holding the corrugated member in adjusted positions.

13. A stabilizer for boats comprising mounting brackets, supporting arms mova-

bly supported thereby and stabilizers adapted to be supported by the outer ends of said arms, a corrugated member for moving the arms from a position adjacent the boat to an extended operative position, a spring arm carried by said frame adapted to engage the corrugated member to limit the movement of the frame in one direction, means for rotating the corrugated member, and pawl and ratchet devices carried by the boat and corrugated member for holding the corrugated member in adjusted positions.

14. A stabilizer for boats comprising mounting brackets, supporting arms movably supported thereby, stabilizers adapted to be supported by the outer ends of said arms, and coöperative guide devices for the stabilizers carried by the stabilizers and supporting arms.

15. A stabilizer for boats comprising mounting brackets, supporting arms movably supported thereby, stabilizers adapted to be supported by the outer ends of said arms, guides carried by the supporting arms and diagonal cleats carried by the stabilizers adapted to be engaged by the supporting arm guides for positioning the stabilizers on said supporting arms.

In testimony whereof I affix my signature.

JOHN J. FERKO.