

1,054,531.

A. L. GREEN.
BOAT PROPELLER.
APPLICATION FILED AUG. 21, 1912.

Patented Feb. 25, 1913.
2 SHEETS-SHEET 1.

Fig. 1.

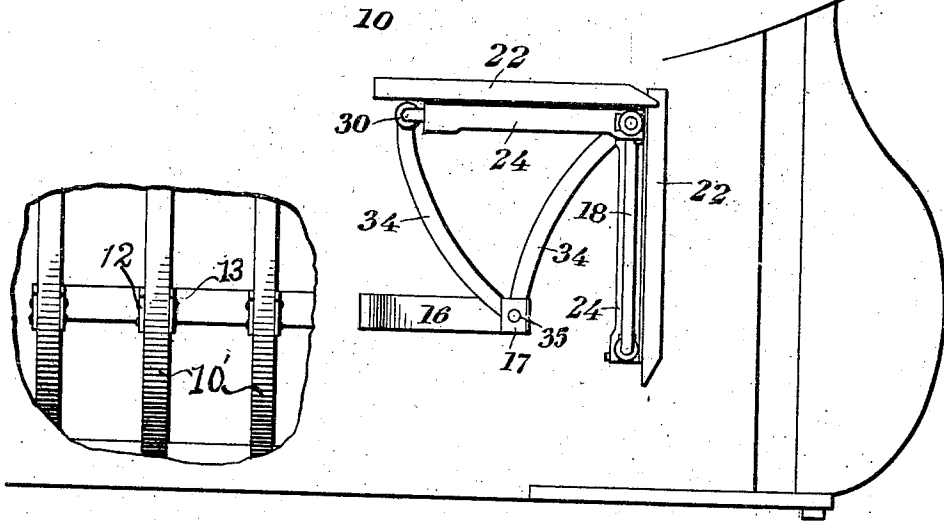
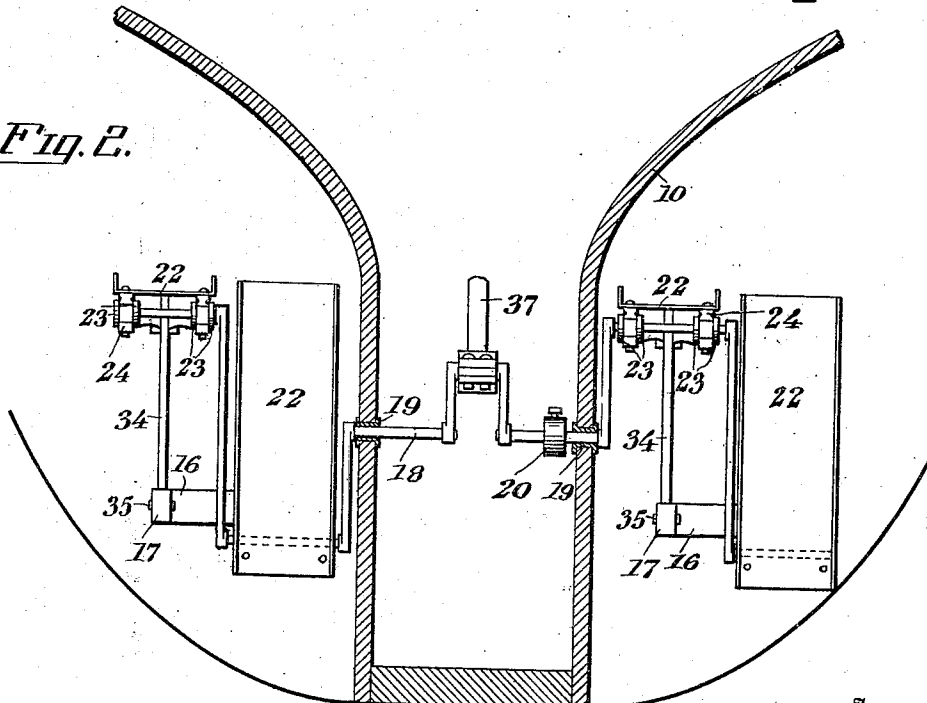


Fig. 2.



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2 SHEETS-SHEET 2.

Fig. 3.

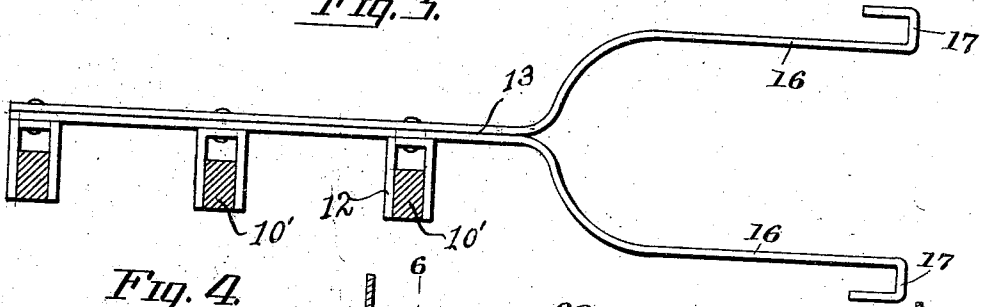


Fig. 4.

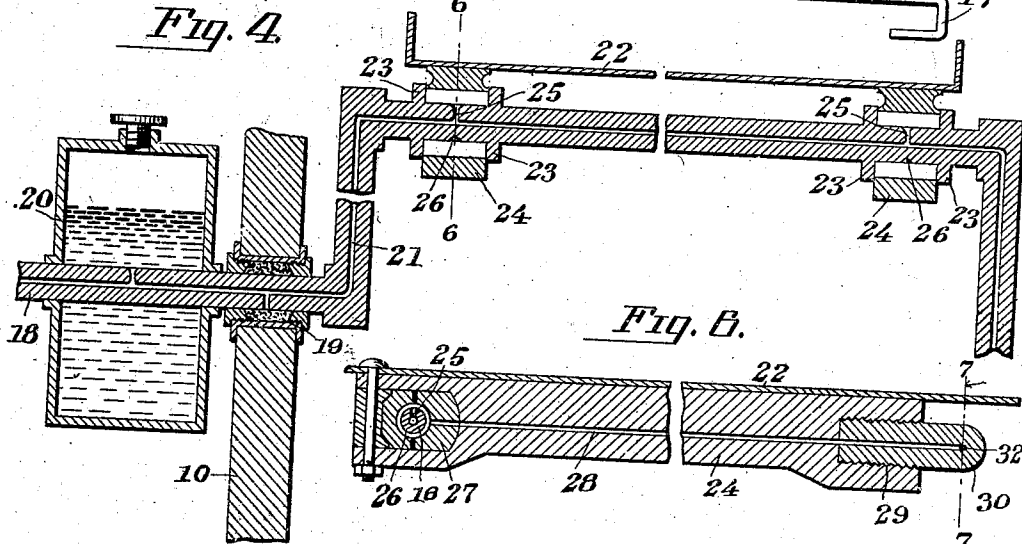


Fig. 6.

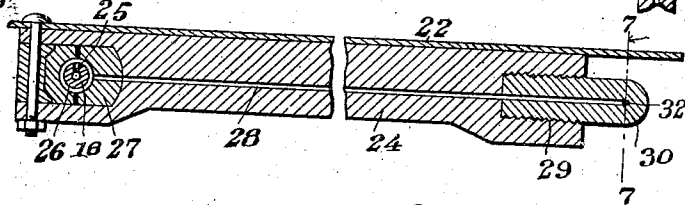


Fig. 5.

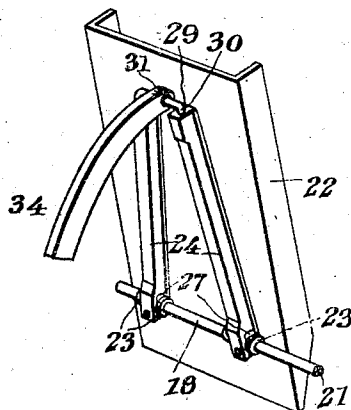
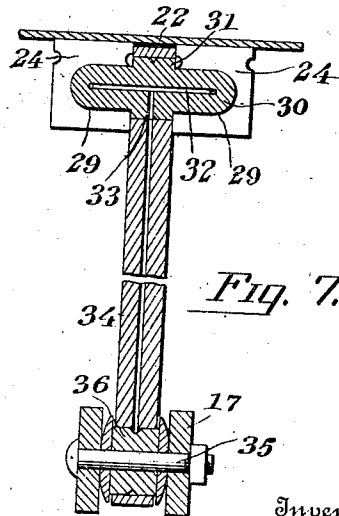


Fig. 7.



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ANDREW L. GREEN, OF AMERICUS, GEORGIA.

BOAT-PROPELLER.

1,054,531.

Specification of Letters Patent. Patented Feb. 25, 1913.

Application filed August 21, 1912. Serial No. 716,328.

To all whom it may concern:

Be it known that I, ANDREW L. GREEN, a citizen of the United States, residing at Americus, in the county of Sumter and State of Georgia, have invented new and useful Improvements in Boat-Propellers, of which the following is a specification.

The general object of this invention is the provision of a propelling mechanism for floating crafts, said mechanism comprising means adapted to be connected to a reciprocating drive shaft and comprising a plurality of propelling blades which are mounted in such a manner as to obtain the greatest amount of force when propelling in one direction and the least amount of resistance when traveling in the other direction.

In carrying out the object of the invention generally stated above, it will be understood, of course, that the essential features thereof are susceptible to changes in details and structural arrangements, one preferred and practical embodiment being shown in the accompanying drawing, wherein:—

Figure 1 is a fragmentary side elevation of a portion of the hull of a ship, showing the mechanism applied thereto and constructed in accordance with the invention. Fig. 2 is a transverse section of the hull of a ship showing the propelling mechanism in front elevation. Fig. 3 is a detail top plan view of a supporting element used in connection with the invention. Fig. 4 is a fragmentary longitudinal sectional view through a portion of the crank shaft with one of the propelling blades connected thereto and showing the manner of lubricating the parts. Fig. 5 is a detail perspective view of one of the propelling blades with the parts connected thereto. Fig. 6 is a section on the line 6—6 of Fig. 4. Fig. 7 is a section on the line 7—7 of Fig. 6.

In the drawings, 10 indicates the hull of a ship and 10' the ribs thereof. Certain of the ribs adjacent the stern of the ship are adapted to engage substantially U-shaped brackets 12 which are formed upon the supporting element 13, thereby securing said element in position. One end of each of the supporting elements 13 extends exteriorly of the hull 10 and is provided with a pair of diverging arms 16 which are bent into substantially U-shaped portions 17 at their outer ends for a purpose which will presently appear.

Mounted in the stern of the hull 10 transversely thereof is a crank shaft 18 which is supported in suitable bearings 19, said bearings being mounted in oppositely disposed openings formed in the sides of the hull. Interiorly of the hull 10, the crank shaft 18 has secured thereto a suitable lubricant containing reservoir 20 from which a lubricant is adapted to be fed to the crank shaft through a feed channel 21 formed therein. The feed channel 21 extends longitudinally throughout the entire length of the crank shaft 18 and is adapted to communicate with certain parts which will be presently described.

The crank shaft is adapted to have connected thereto a plurality of propelling U-shaped blades 22 and as all of these blades are mounted in a similar manner, a description of one will suffice. At certain intervals the crank shaft 18 is provided with spaced collars 23 which are adapted to receive therebetween the bifurcated ends of the supporting arms 24, said arms being arranged in pairs and having the blades 22 secured thereto in any preferred manner. Between the collars 23 the crank shaft 18 is provided with a lateral passage 25 which communicates with a peripheral groove 26 so that lubricant from the crank shaft may be fed to the bearing blocks 27 which engage each side of the crank shaft in the bifurcated end of the arm 24, said blocks forming bearings for said shaft. The inner block 27 is provided with a passage which is in alignment with a passage 28 extending longitudinally through the arm 24, the inner end of which is provided with a transverse opening 29 adapted to receive one end of a stationary stub shaft 30. The two supporting arms 24 which form the support for each of the blades 22 converge so that their inner ends will abut the collar 31 formed upon the stub shaft 30. Said shaft is provided with a longitudinal opening 32 therethrough which communicates with the passage 28 formed in each of the arms 24 and the opening in said shaft communicates with a peripheral groove 33 formed upon the collar 31 whereby the end of the arcuate oscillating hanger arm 34 which loosely engages said collar between the arms 24 is lubricated.

The U-shaped portions 17 of the supporting element 13 are provided with transverse openings, each portion being adapted to re-

ceive a stub shaft 35 in the openings therein, said shaft being provided with a collar 36 which engages an opening formed adjacent the other end of the hanger arm 34. The collar 36 is provided with a peripheral groove which communicates with the passage in the hanger arm whereby the lubricant flowing therethrough will be fed to said collar for lubricating the pivotal connection between said hanger arm and the shaft 35. A reciprocating drive shaft 37 is suitably mounted interiorly of the hull 10 and has one end thereof connected to the crank shaft 18 and the other end connected to a suitable engine (not shown.) It will thus be seen that upon the reciprocation of the drive shaft 37, the crank shaft 18 will be caused to rotate and through the connections between said crank shaft and the supporting elements 13 the propelling blades 22 will have a motion imparted thereto whereby the ship will be propelled forwardly. It will be seen that by reason of the connections above mentioned when the plates 22 are moving rearwardly the faces thereof will be in a substantially vertical position thus obtaining the maximum amount of propelling force. When the blades are in their lowermost position on the return movement the same are substantially parallel with the surface of the water so that there will be no force to neutralize

that which propels the boat in a forward direction.

What is claimed as new is:—

1. In a device of the class described, the combination with the hull of a boat, of supporting elements secured to said hull on each side of the keel thereof, a propelling mechanism mounted in said hull and pivotally connected to said supporting elements, said propelling mechanism comprising a plurality of blades, and an oscillating connection between said blades and said supporting elements.

2. In a device of the class described, the combination with the hull of a boat, of supporting elements secured to said hull on each side of the keel thereof, a propelling mechanism mounted in said hull and pivotally connected to said supporting elements, said propelling mechanism comprising a plurality of blades, an oscillating connection between said blades and said supporting elements, and means carried by said propelling mechanism for lubricating the connections between the blades and said supporting elements.

In testimony whereof I affix my signature in presence of two witnesses.

ANDREW L. GREEN.

Witnesses:

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G. W. F. PHILLIPS.