

No. 730,090.

PATENTED JUNE 2, 1903.

G. F. BRYAN.
BOAT PROPELLING MECHANISM.

APPLICATION FILED DEC. 2, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

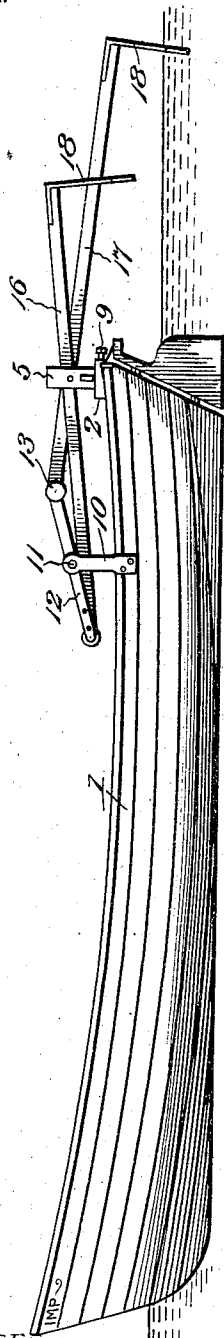
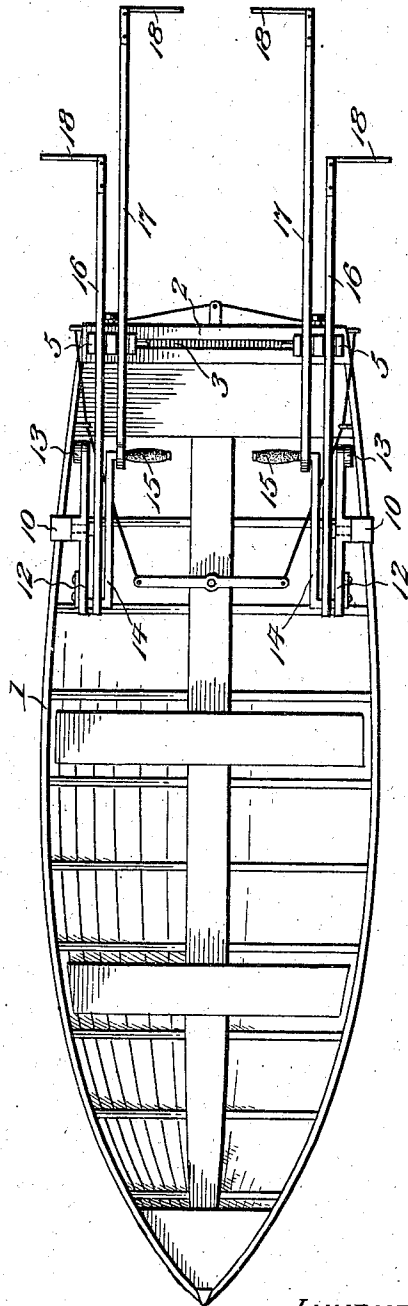


Fig. 2.



WITNESSES:

Edwin S. McKee
Hubert Lawson

INVENTOR

George F. Bryan

BY

Victor J. Evans
Attorney

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2 SHEETS—SHEET 2.

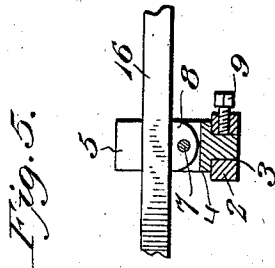


Fig. 5.

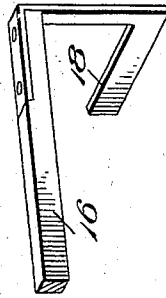


Fig. 6.

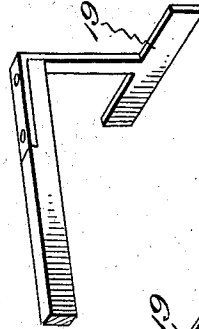


Fig. 7.

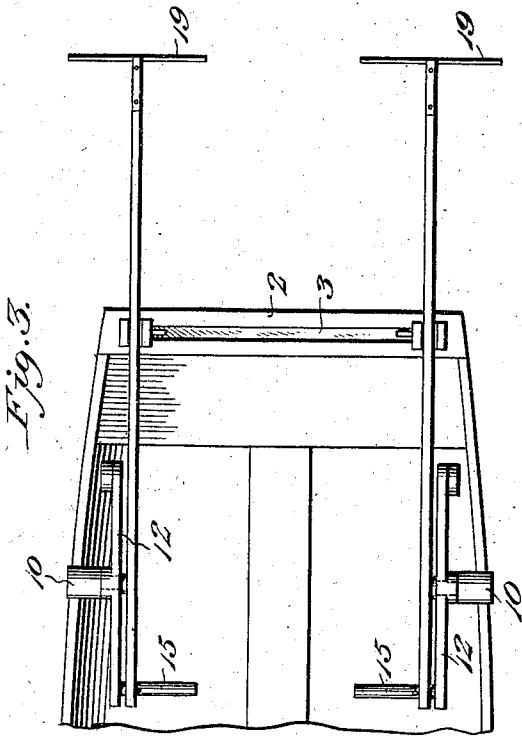


Fig. 3.

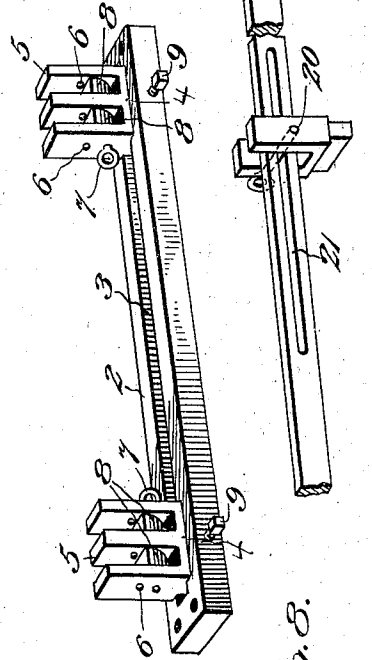


Fig. 4.

WITNESSES:

Edwin S. Mott
Herbert D. Lawson

INVENTOR

George F. Bryan
BY *Victor J. Evans*
Attorney

UNITED STATES PATENT OFFICE.

GEORGE F. BRYAN, OF YOUNG ISLAND, SOUTH CAROLINA.

BOAT PROPELLING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 730,090, dated June 2, 1903.

Application filed December 2, 1902. Serial No. 133,602. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. BRYAN, a citizen of the United States, residing at Young Island, in the county of Colleton and State of South Carolina, have invented new and useful Improvements in Boat Propelling Mechanism, of which the following is a specification.

This invention relates to new and useful improvements in propelling mechanism for small boats; and its object is to provide hand-operated paddles or "thrust-blades" adapted to automatically and alternately dip into the water, thrust back, and then rise above the surface and assume their original positions.

Another object is to employ apparatus adapted to be adjusted to boats of different widths and having means whereby the downward strokes of the thrust-blades may be regulated.

With the above and other objects in view the invention consists in the novel construction and combination of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawings, showing the preferred form of my invention, and in which—

Figure 1 is a side elevation of a boat having my improved propelling mechanism thereon. Fig. 2 is a plan view. Fig. 3 is a plan view of a modified form of apparatus. Fig. 4 is a perspective view of the adjustable guides of the rods of the thrust-blades. Fig. 5 is a section through one of said guides and showing a rocking bearing therein. Fig. 6 is a detail view of one form of thrust-blade employed by me. Fig. 7 is a similar view of another form of blade, and Fig. 8 is a detail view of a modified form of guide for the rod of a thrust-blade.

Referring to the figures by numerals of reference; 1 is a boat of suitable form having a slotted plate 2 bolted or otherwise secured across the stern thereof, said plate having a slot 3 arranged longitudinally therein. Within this slot are mounted sliding blocks 4, from each of which extend, preferably, three parallel ears 5, having series of apertures 6 therein. One aperture in each ear is adapted to receive a pivoted pin 7, which serves as a bearing for the semicylindrical bearing-block 8, loosely mounted on said pin and for the

purpose hereinafter more fully described. Blocks 4 may be locked in any suitable position within the slot 3 by means of set-screws 9. 55

A standard 10 is secured to each gunwale of the boat at points adjacent to the stern thereof, and within the upper end of each of these standards is journaled a stud-shaft 11, having extending arms 12 thereon. To one 60 of these arms is secured a counterweight 13, while to the opposite end is connected a crank 14, preferably arranged parallel with arms 12 and provided with a handle 15 to enable the same to be readily grasped by the operator. A rod 16 is pivotally connected to the 65 crank 14 adjacent to its point of connection with arm 12, and another rod 17 is also connected to said crank adjacent to the grip 15 thereon. These rods are arranged between 70 the ears 5 upon blocks 4 and rest upon the rocking bearings 8, before referred to. The outer or rear ends of the rods are connected to L-shaped thrust-blades 18.

It will be seen that as the pivots of the two 75 rods 16 and 17 are arranged at diametrically opposite sides of the shaft 11 said rods will be moved backward and forward alternately during the revolution of said shaft. The operator sits in the stern of the boat, facing the 80 bow thereof, and grasps the handle 15. He then revolves the shafts 11 by turning the crank 14, and the alternate movement of the rods 16 and 17 and their blades 18 is thus produced. It will be seen that by this arrange- 85 ment of parts the rods will enter upon their working strokes with their blades immersed when the pivots thereof reach their highest points, and as said pivots descend the blades will be thrust backward in the water, there- 90 by serving to drive the boat forward. When the pivots commence to swing downward, passing the rocking bearings of the rods 16 and 17, the blades upon said rods will be raised out of the water and drawn back to 95 their original positions, when the operation will be repeated, as above described. As two alternately-operating thrust-blades are arranged at each side of the boat, it is obvious that this construction permits the alternate 100 operation of the blades in pairs.

If desired, in lieu of employing two blades at each side of the boat a single T-shaped blade 19 may be used. In such case the cranks

14 are dispensed with and the rod of the blade pivoted to the handle 15, which is connected direct to the end of one of the arms 13. I have illustrated this construction in Figs. 3 and 7 of the accompanying drawings. In Fig. 8 I have shown a modified form of guide-bearing for the rods. With this construction the rocking bearing 8 may be dispensed with and a bearing-pin 20 substituted therefor. This pin is adapted to be placed in any one of the apertures 6 in ears 5 and extend through a slot 21, arranged longitudinally within the rods 16 and 17.

In the foregoing description I have shown the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing any of the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

Having thus described my invention, what is claimed as new is—

1. The combination with a shaft and a crank secured thereto; of a slotted plate, a block adjustably secured within said plate, guide-ears extending from the block, a rod mounted between said ears and secured to the crank, and a thrust-blade at the end of the rod.

2. The combination with a shaft having a counterbalanced crank connected thereto; of a slotted plate, a block slidably mounted therein and adapted to be secured in adjusted position, guide-ears extending from the block, rods connected to the crank and mounted between the guide-ears and adapted to

be alternately operated by said crank, and thrust-blades secured to the ends of the rods.

3. The combination with a shaft having oppositely-extending arms thereto, a counterbalance upon one of the arms, and a crank secured to the other arm; of an adjustable guide, rocking bearings therein, rods pivoted to the crank at opposite sides of the shaft and resting upon said rocking bearings, and L-shaped thrust-blades at the outer ends of the rods.

4. The combination with a boat having standards upon the gunwales thereof, shafts journaled within said standards, and cranks secured to the shafts; of a slotted plate on the stern of said boat, blocks adjustably secured within said plate, guide-ears extending from the blocks, rods mounted between said ears and connected to the cranks, and thrust-blades at the outer ends of the rods.

5. The combination with a boat having standards on the gunwales thereof, a counterbalanced crank revolvably mounted upon each standard, and a handle on each crank; of a slotted plate secured to the stern of the boat, blocks adjustably secured therein, guide-ears extending from the blocks, semi-cylindrical bearings pivotally mounted between said ears, rods pivoted to each of the cranks at opposite sides of its bearing, and thrust-blades at the outer ends of the rods.

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

GEORGE F. BRYAN.

Witnesses:

T. A. LEGARE,
G. H. BARNWELL.