

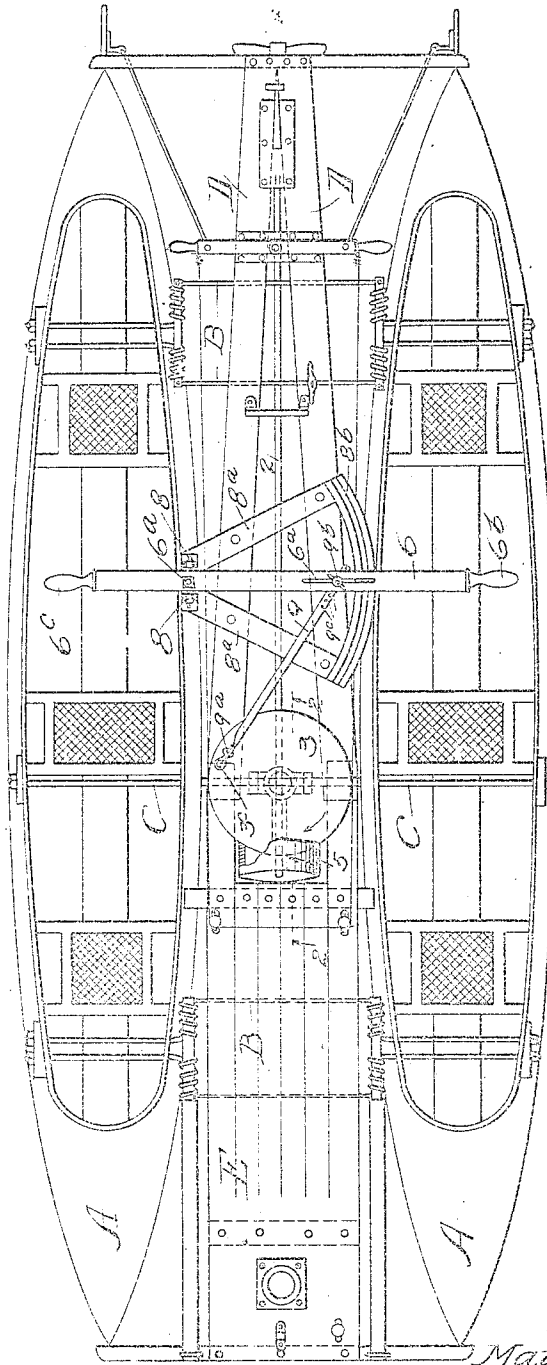
M. PHILLIPS.
CATAMARAN PROPELLING MECHANISM.
APPLICATION FILED JUNE 3, 1912.

1,056,296.

Patented Mar. 18, 1913.

2 SHEETS—SHEET 1.

Fig. 1.



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Inventor:

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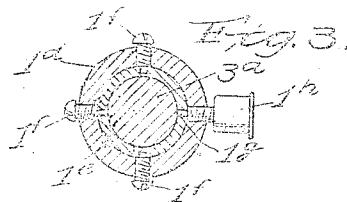
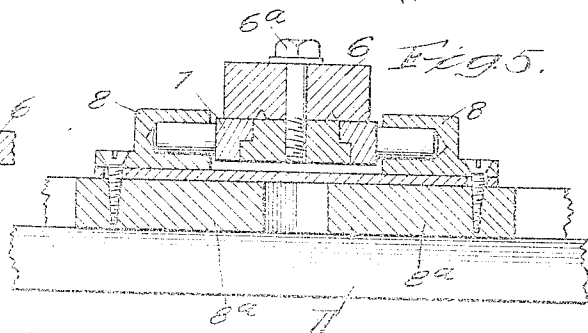
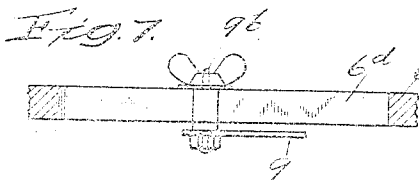
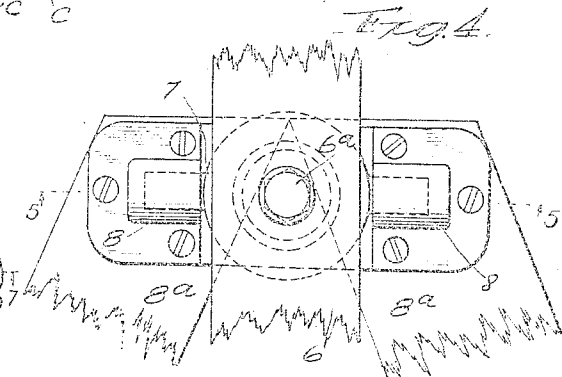
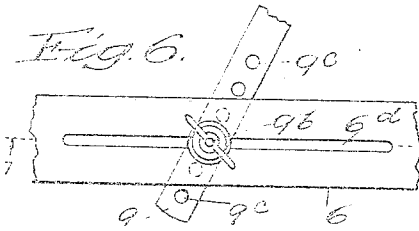
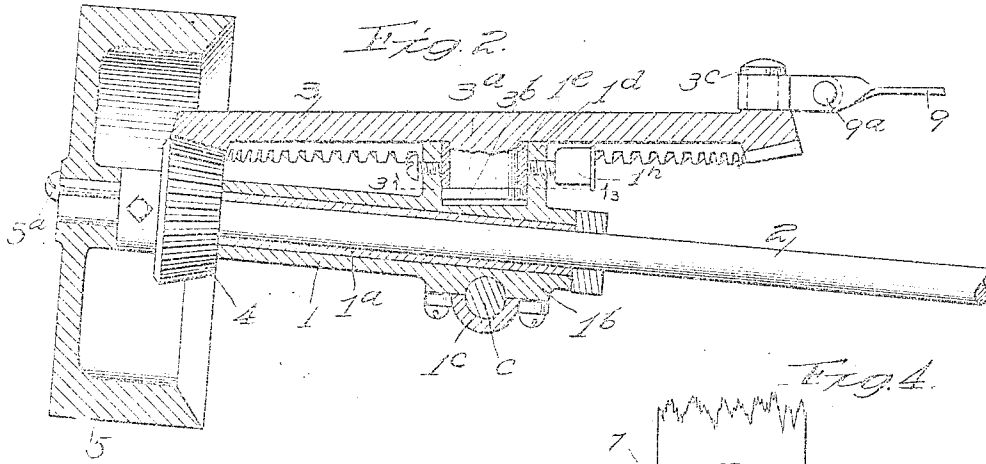
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2 SHEETS-SHEET 2.



Witness:
Robert H. Burton.

Inventor:
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UNITED STATES PATENT OFFICE.

MARCUS PHILLIPS, OF CHICAGO, ILLINOIS.

CATAMARAN-PROPELLING MECHANISM.

1,056,296.

Specification of Letters Patent.

Patented Mar. 18, 1913.

Original application filed May 22, 1911, Serial No. 628,658. Divided and this application filed June 3, 1912. Serial No. 701,153.

To all whom it may concern:

Be it known that I, MARCUS PHILLIPS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Catamaran-Propelling Mechanism, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

This application is a division of my application on catamaran, Ser. No. 628,658, filed May 22, 1911.

The purpose of this invention is to provide an improved hand power motor for use in pleasure craft and particularly adapted to be mounted upon a catamaran as illustrated.

It consists of the features and elements described and shown in the drawings as indicated in the claims.

In the drawings:—Figure 1 is a top plan view of the motor, showing it mounted on the catamaran which it is employed to propel. Fig. 2 is a vertical section taken as indicated at line 2—2 on Fig. 1, being an enlarged detail of certain parts of the motor. Fig. 3 is a section taken as indicated at line 3—3 on Fig. 2. Fig. 4 is a detail of the swiveled fulcrum block for the motor lever. Fig. 5 is a section taken as indicated at line 5—5 on Fig. 4. Fig. 6 is a detail plan view of the adjustable connection between the motor lever and the connecting rod. Fig. 7 is a section taken as indicated at line 7—7 on Fig. 6.

The catamaran shown in Fig. 1 is more fully illustrated in my co-pending application, Serial Number 628,658. Briefly it consists of a pair of boat hulls, A, A, connected together by laterally extending flexible couplings, B. In addition to the flexible couplings, B, there is provided near the middle of the length of the craft a connector or tie rod, C, of somewhat heavier material than the couplings, B, but nevertheless sufficiently flexible to bend readily to accommodate itself to any relative movement of the hulls. Upon this cross tie, C, is mounted the propeller shaft bearing and the motor, the latter being adapted for operation by hand power. The casting, 1, which contains a bushing, 1^a, suitable to serve as a journal

bearing for the propeller shaft, 2, is also formed with a lug, 1^b, and a cap, 1^c, therefor, by which the casting is secured to the cross tie, C, in such a manner as to permit its being rocked about the tie rod in a vertical plane. The upper side of the casting, 1, is formed with a journal cup, 1^d, carrying a journal bushing, 1^e, secured therein by one or more set screws, 1^f. Into this cup extends the short stud axle, 3^a, of the driving gear, 3, of the motor; a flange, 3^b, at the lower end of the axle is engaged by the bushing, 1^e, and the driving gear is thus prevented from coming out of its bearing. In order to obtain this arrangement, the bushing must be inserted into the cup, 1^d, with the axle, having been previously applied thereto; such application would be accomplished by splitting the bushing, as indicated at, 1^g, in Fig. 3, and spreading it sufficiently to embrace the axle, 3^a, after which, since it would be of comparatively soft material, it could be pressed snugly about the axle and inserted into the cup, 1^d, into which it would then be secured by the set screws, 1^f. The journal cup, 1^d, is also provided with a grease cup, 1^h, for supplying lubricant to this principal bearing of the motor.

Rigidly secured to the shaft, 2, is the driven gear, 4, meshing with the driving gear, 3; and upon the extreme end of the shaft there is mounted a fly wheel, 5, keyed thereto by a screw, 5^a, set into the end of the shaft so as to engage both the shaft and the hub of the fly wheel. The fly wheel is so cupped or hollowed out as to completely contain the driven gear, 4, within the limits of its extent along the axis of the shaft. This design not only affords compactness of arrangement, but as may be noted by a consideration of the plan view of Fig. 1, it constitutes the rim of the fly wheel a guard for the intermeshing gears, 3 and 4, since with the directional relations as indicated by the arrows on said figure, it is evident that if the hand or clothing of a passenger should be engaged by the driving wheel, 3, and carried toward the point where it enters the hollow of the fly wheel, 5, it would tend to be carried away from this point and out of danger, by the direction of rotation of the fly wheel. The fly wheel also serves as a hood to protect the gear, 4, from rain, and

in this connection it may be noted that the entire design of the motor is such as to forestall any trouble from this source, the driving gear, 3, being smooth and flat on top and effectually hooding its own journal bearing.

As shown, the operating lever, 6, is pivoted at 6^a, nearer one end than the other, so that in the case of two operators, the one using the handle, 6^b, has a considerably greater leverage and longer swing than the one at 6^a; it has been found, however, that for ordinary purposes the motor is sufficiently powerful when operated by one person only, so the handle, 6^a, would not often be brought into service. In order to make the action somewhat easier, by not confining it to an absolute plane, the lever is pivoted in a swiveled block, 7, shown in detail in Figs. 4 and 5, whose horizontally extending journal studs, carried in bearings, 5, permit vertical movement of the operating handle, resulting in an action somewhat similar to that experienced in rowing. The bearings, 5, are shown mounted upon the ends of the frame members 8^a, which support at their opposite ends a segment, 8^b, shod with a wearing plate for the lever, 6. The frame members, 8^a, are bolted rigidly to the rearwardly extending frame boards, D, whose forward ends lie lapping the rearwardly extending portion of the deck, E, just over the tie rod, C. Since the lever, 6, may be carried out of the plane of the driving gear, 3, either by the movement of the hulls, A, A, relative to each other, or by such operation as is permitted by its swiveled pivot, 6^a, the connecting link, 9, is provided with a joint at 9^a, near its connection with the crank pin, 3^a, of the driving gear.

To permit of varying the stroke and leverage of the operating lever, 6, there is provided therein a slot, 6^a, in which may be clamped at any position throughout its length the pivot pin, 9^b, through which the connecting link, 9, is driven by the lever. In order, however, that such readjustment may not disturb the relation of the range of movement of the lever to the seat occupied by the operator, and thus interfere with convenience of operation, the connecting link, 9, is provided with a series of holes, 9^c, to the proper one of which the pivot pin, 9^b, may be moved to correct any change of angle of the lever, 6, resulting from a change of position of the pin, 9^b, in the slot, 6^a. These details are shown on an enlarged scale in Figs. 6 and 7.

I claim:—

1. In a catamaran, in combination with the two hulls, a flexible connector extending transversely of the hulls, a hand power motor mounted on said connector in the interval between the hulls, and comprising a propeller shaft extending longitudinally of the

hulls, a fly wheel thereon, said fly wheel being cupped or recessed, a bevel pinion on the shaft within the recess of the fly wheel, and a driving gear projecting into the recess of the fly wheel for meshing with the pinion.

2. In a catamaran, in combination with the two hulls, a connector extending laterally from one to the other of the hulls, a hand power motor mounted upon said connector and comprising a propeller shaft, a fly wheel thereon, said fly wheel being cupped or recessed, a bevel pinion on the shaft within the recess of the fly wheel, a bevel gear meshing with said pinion, the rim of the fly wheel being interiorly beveled to conform to the rim of the gear.

3. In a catamaran, in combination with the two hulls, a connector extending transversely from one to the other of the hulls, a hand power motor carried upon said connector in the interval between the hulls and comprising a propeller shaft, a bevel pinion thereon, a driving gear comprising a disk mounted for rotation about a vertical axis, and having gear teeth cut on its under side adapted to mesh with the teeth of the bevel pinion, said disk having no central aperture but being provided with a downwardly extending axle, a journal bearing for said axle comprising an upwardly opening cup, the mouth of said cup being covered by the gear wheel and its axle, and means for retaining said axle in said journal cup.

4. In a catamaran, in combination with the two hulls, means connecting said hulls, a hand power motor mounted in the interval between them, comprising a propeller shaft, a bevel pinion thereon, a driving gear mounted to mesh with said pinion, an axle rigid with said driving gear and terminating in a flange, a journal cup having an interior diameter substantially equal to the diameter of the flange, a bushing for said journal cup having an interior diameter substantially equal to the diameter of the axle, and an exterior diameter substantially equal to that of the flange, and means for securing said bushing in said journal cup.

5. In a catamaran, in combination with the two hulls, flexible connections laterally joining said hulls, a framework mounted in the interval between the hulls, a hand power motor also mounted in said interval comprising a propeller shaft, drive gearing therefor, a hand lever operatively connected to the drive gearing and extending transversely of the hulls, and a fulcrum block for the hand lever journaled on the framework for rotation about a horizontal axis, and having a vertical pivot engaging the hand lever.

6. In a catamaran, in combination with the two hulls, means laterally connecting said hulls, a framework mounted in the interval between them, a hand power motor

also mounted in said interval and comprising a propeller shaft, drive gearing therefor, an operating lever, a pitman connecting said lever with the drive gearing, said hand lever having a longitudinal slot, said pitman having a series of holes near one end, disposed at different distances from the other end, and a pivot bolt adapted to be clamped in the slot of the lever and to en-

gage any one of the said series of holes in the pitman.

In testimony whereof, I have hereunto set my hand at Chicago, Illinois, this 31st day of May, 1912.

MARCUS PHILLIPS.

Witnesses:

ROBT. L. BURTON,

EDNA M. MACINTOSH.