J. T. STAFFORD.

PROPELLING MECHANISM FOR BOATS.

APPLICATION FILED JUNE 30, 1908.

912,198. Patented Feb. 9, 1909.

Fig. 1.

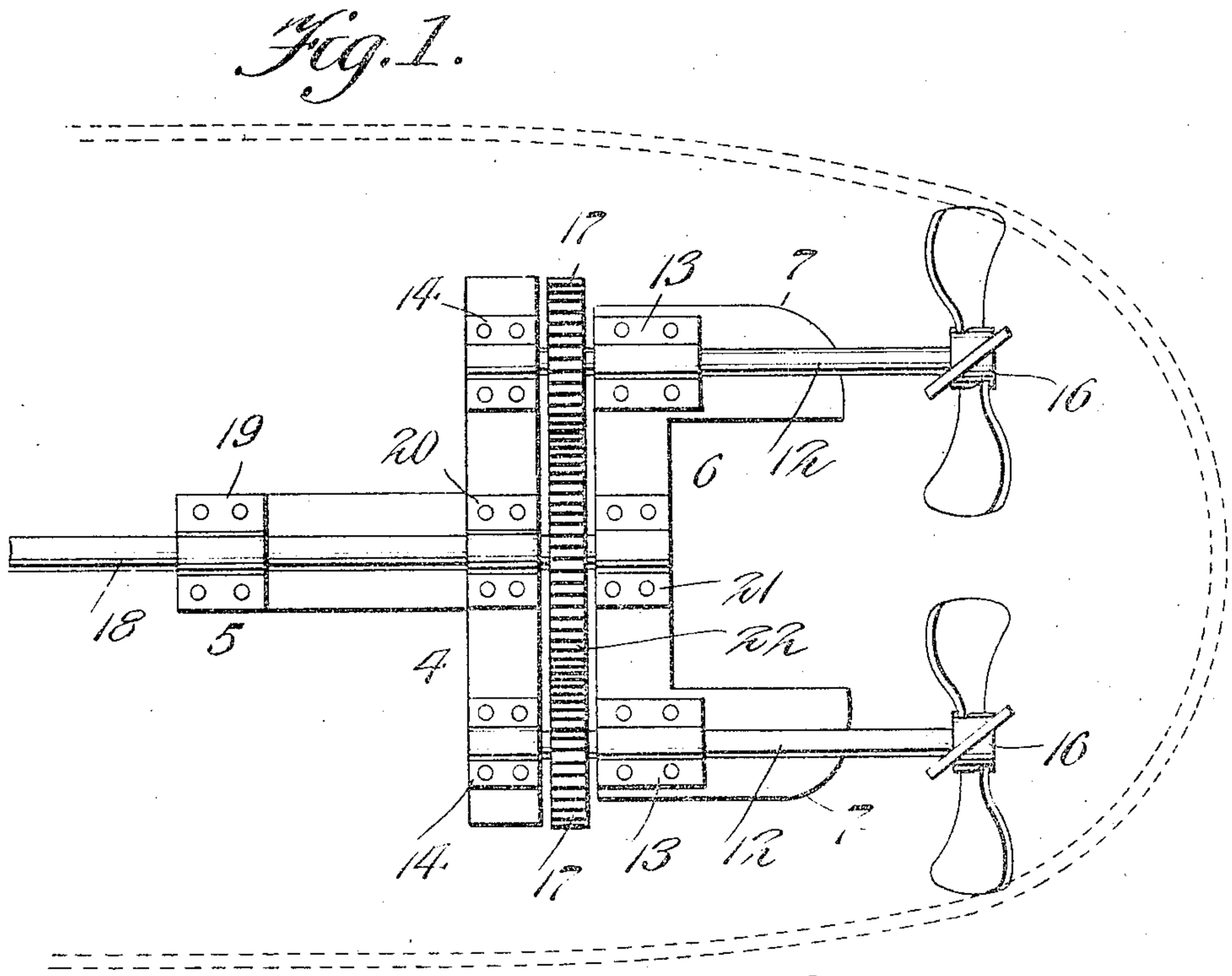


Fig. 2.

Fig. 3.

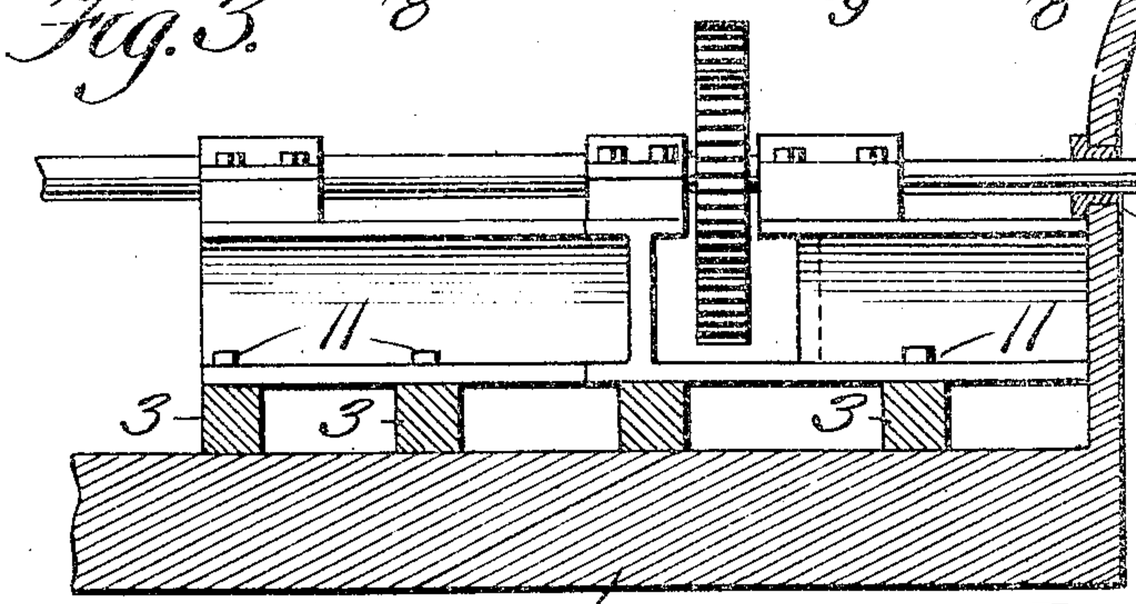
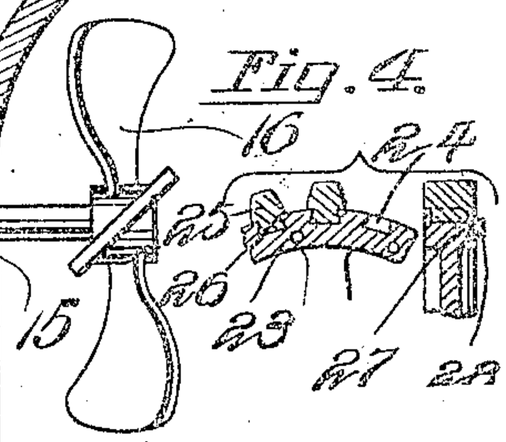


Fig. 4.



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UNITED STATES PATENT OFFICE.

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PROPELLING MECHANISM FOR BOATS.

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Application filed June 30, 1908. Serial No. 441,079.

To all whom it may concern:

Be it known that I, JAMES T. STAFFORD, a citizen of the United States of America, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Propelling Mechanisms for Boats, of which the following is a specification.

My invention relates to improvements in propelling mechanisms for boats, and its primary object is the provision of a mechanism of this character which is designed to permit twin propellers to be driven from a single engine shaft, whereby to simplify the construction and cost of such mechanism and to reduce to the minimum the number of engines necessary to propel a boat.

A further object of the invention is the provision of a simple, durable and efficient foundation for the propelling mechanism.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts hereinafter fully described, claimed and illustrated.

In the accompanying drawing,—Figure 1 is a top plan view of a propelling mechanism constructed in accordance with my invention. Fig. 2 is a view in end elevation thereof. Fig. 3 is a view in side elevation thereof. Fig. 4 is a sectional view of a modified construction of the pinion or gear wheel.

Referring to the drawing by reference numerals, 1 designates a fragmentary portion of the bottom and 2 a fragmentary portion of the stern of a boat of the usual form and construction. A plurality of relatively spaced beams or girders 3 are secured to the bottom 1 of the boat and extend trnasversely thereof. The foundation for the propelling mechanism is mounted upon the beams or girders 3 and consists of integral T and U-shaped structures. The T-shaped structure comprises a transversely disposed member 4 and a forwardly extending longitudinally disposed member 5, while the U-shaped structure comprises a transversely disposed member 6 and longitudinally disposed rearwardly extending members 7. The longitudinally disposed member 5 of the T-shaped structure is arranged in a plane extending centrally and longitudinally through the boat, and the longitudinally disposed members 7 of the U-shaped structure are disposed in parallel planes equally spaced from the plane of the member 5. Each of the members of the foundation consists of a base 8, a web 9 and a head 10. The bases 8 of the members 4 and 6 are united, while the heads 10 thereof are relatively spaced. The foundation is secured to the beams or girders 3 by means of bolts 11 which pass through the flanges 8 of the members thereof into said beams or girders.

A pair of propeller shafts 12 are journaled in bearings 13 and 14, said bearings being respectively secured to the members 7 of the U-shaped structure and to the member 4 of the T-shaped structure. The propeller shafts pass through water-tight bearings 15 arranged in the stern 2 of the boat and have propeller wheels 16 secured thereto. Pinions 17 are fixed on the propeller shafts 12 and enter the space between the heads 10 of the members 4 and 6. A single engine shaft 18 is journaled in bearings 19, 20 and 21. The bearing 19 is secured to the head of the member 4 of the T-shaped structure, the bearing 21 being secured to the head of the member 6 of the T-shaped structure. A gear wheel 22 is fixed on the engine shaft 18 and meshes with the pinion 17.

In Fig. 4 of the drawing, I have disclosed a modified form of the pinion or gear wheel and, by reference to this figure, it will be seen that the pinion or gear wheel comprises a periphery 23 which is provided with a plurality of dove-tailed recesses 24, the recesses opening out through one side of the pinion or gear wheel. Teeth 25 are provided with dove-tailed extensions 26 which are adapted to be received by the recesses 24. The teeth 25 are secured within the recesses through the medium of an annular member 27 which is secured in applied position by means of bolts 28. As the teeth of the pinion or gear wheel are removably secured in applied position, one or more of the teeth may be removed when unfit for further use, a new tooth or teeth being substituted for the removed tooth or teeth.

The connection between the engine shaft and the propeller shaft is such that the rotation of the former will simultaneously rotate the propeller wheels 16. As the gear 22 is larger than the gear 17, the propellers are driven at high speed by a comparatively slow rotation of the engine shaft 18.

The use of a single engine shaft to drive a plurality of propellers, permits the reduction of the number of engines necessary to propel a boat at high speed and affects a correspond-

ing saving in fuel and water. The construction in the propeller mechanism is such as to prevent the engine shaft 18 from being spirally twisted.

It should be apparent from the above description taken in connection with the accompanying drawings that I provide a propeller mechanism which is simple of construction which may be manufactured and sold at a comparatievly low cost, and which may be applied to a boat of any construction.

Changes in the form, proportion and minor details of construction may be made within the scope of the claim without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described the invention, what is claimed as new, is:—

A boat comprising a T-shaped structure consisting of a transversely disposed member and a forwardly extending longitudinally disposed member, a U-shaped structure consisting of a transversely disposed member and rearwardly extending longitudinally disposed members, bearings secured to the transversely disposed member of the T-shaped structure and to the longitudinally disposed members of the U-shaped structure, shafts journaled in the bearings, propeller wheels secured to the shafts, pinions secured to the shafts and disposed between the transversely disposed members of the structures, bearings secured to the transversely disposed members of the structures and to the longitudinally disposed members of the T-shaped structure, a shaft journaled in the bearings, and a pinion mounted on the shaft and meshing with the first-named pinions, said last named pinion being also arranged between the transversely disposed members of the structures.

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

JAMES T. STAFFORD.

Witnesses:
FRANKIE MATTE,
JOSEPH UNKELBACH.