C. H. REAMES.

BOAT PROPELLER.

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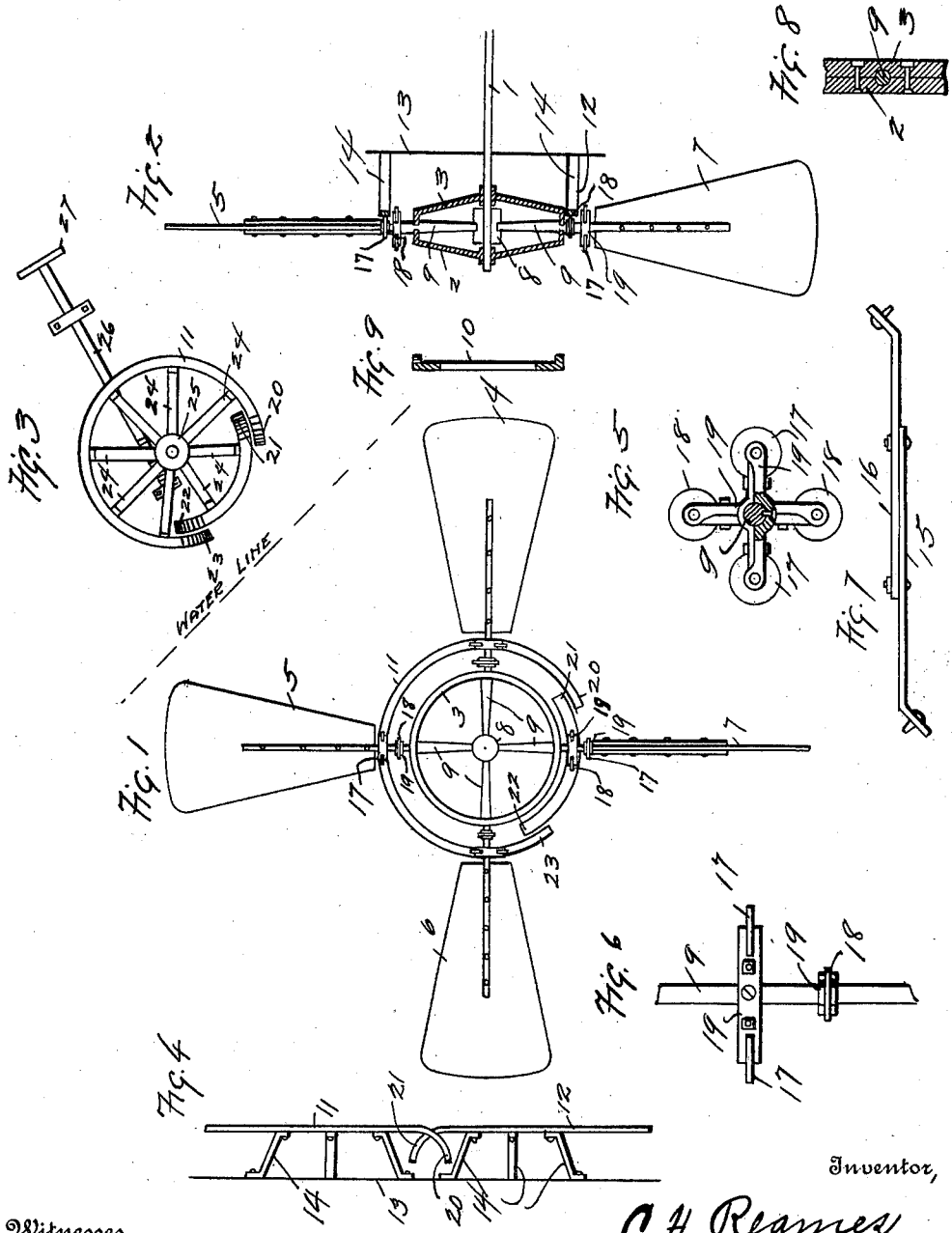
1,032,426. Patented July 16, 1912.



Witnesses

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BOAT-PROPELLER.

1,032,426. Specification of Letters Patent. Patented July 16, 1912.

Application filed February 20, 1911. Serial No. 609,690.

To all whom it may concern:

Be it known that I, CHARLES H. REAMES, a citizen of the United States, residing at Fort Worth, in the county of Tarrant and State of Texas, have invented certain new and useful Improvements in Boat-Propellers, of which the following is a specification.

My invention relates to propellers for boats and more particularly to means for turning the vanes or paddles one quarter of a turn as soon as each vane or paddle has finished its driving stroke, and the object is to provide simple devices for turning the vanes edgewise automatically as soon as the driving stroke is completed, so that the vanes or paddles will not have to carry a load on the upstroke. The advantage is that the loss of power, which would take place if the faces of the vanes carried the water as they moved upwardly, is avoided and a great saving in labor, fuel, and wear and tear of the machinery is effected.

Other objects and advantages will be fully explained in the following description and the invention will be more particularly pointed out in the claims.

Reference is had to the accompanying drawings which form a part of this application.

Figure 1 is a side elevation of a propeller constructed in accordance with my invention, the securing disk or wheel being removed. Fig. 2 is a diametrical section of the dished wheels which carry the vanes or paddles, showing the manner of mounting the vanes therein. Fig. 3 is a detached view of the tracks which aid in turning the vanes a one quarter turn. Fig. 4 is an edge view of the same, showing the manner of attaching the same to the wall of the boat. Fig. 5 is an enlarged view, showing a cross-section of a vane shaft and the two pairs of rollers mounted thereon. Fig. 6 is a portion of vane shaft, showing the rollers mounted thereon. Fig. 7 is a detail view, showing a variation in the track braces. Fig. 8 is a broken sectional view, showing the bearings in the meeting faces of the wheels for the vane shafts. Fig. 9 is a variation in the bearing wheel for the vane shafts.

Similar characters of reference are used to indicate the same parts throughout the several views.

This propeller wheel is to be mounted at any convenient place about the boat for driving purposes. The main driving shaft 1 is to be driven by any suitable power, and this shaft projects from within the boat far enough outwardly for mounting the propeller. The propeller is composed of two dished wheels 2 and 3, vanes 4, 5, 6, and 7, and a hub 8 which is rigid on shaft 1. The vanes are provided with shafts 9 which are journaled in the hub 8 and between the meeting faces of the wheels 2 and 3, the wheels 2 and 3 being rigid with the shaft 1. In some cases the wheel 2 may be omitted and a rim 10, as shown in Fig. 9, used in place of the wheel 2. The vanes or paddles 4, 5, 6, and 7 are rigid with the shafts 9.

Means are provided for turning the vanes or paddles a one quarter turn at predetermined points. Tracks 11 and 12 are mounted on the boat adjacent to the side of the propeller.

In the drawings 13 indicates the boat line and the tracks 11 and 12 are mounted on boat by braces or supports 14 and it is necessary to make the braces extensible, as shown at 15 and 16 in Fig. 7, in some cases owing to the shape of the boat at the point or place where the propeller is mounted. Two pairs of rollers 17 and 18 are mounted on the shafts 9 by bearings 19 which are fixedly attached to the shafts 9. The object of the two tracks 11 and 12 and the two pairs of rollers 17 and 18 is to turn the vanes a one quarter turn. The rollers 17 will run against or on the track 11 and hold the vanes edgewise when they are to perform no service or function and the track 12 and rollers 18 are to hold the vanes facing the water during the driving stroke. The track 11 has the end 20 curved so that the rollers 17 will be turned thereon and the track 12 has the end 21 curved so that as soon as the rollers 17 commence turning the rollers 18 will engage the track 12 and run on track 12 and thus hold the vanes in driving position while the vane is passing the track 12. As the rollers 18 are leaving the tracks 12 they run on a curved portion 22 and thus turn the shaft 9 and immediately the wheels 17 will engage the curved portion 23 of track 11 and thus aid in turning the vanes edgewise during the upstroke or non-operating stroke of the vanes.

Fig. 3 of the drawings shows a variation in the manner of mounting the tracks 11 and 12. It is some times desirable to shift the tracks 11 and 12 to make the working

stroke of the vanes commence sooner or later for the purpose of raising or lowering the boat. The braces 24, instead of being attached to the boat, are attached to a hub 25 which is mounted on the shaft 1. The tracks are then shifted by worm gearing formed on the shaft 26 and on the hub 25, the shaft 26 being provided with a hand-wheel 27. It is apparent that various other changes may be made without departing from my invention.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is,—

1. A boat propeller comprising a shaft, a wheel and a hub rigid therewith, a plurality of vanes having shafts journaled in said wheel and hub, an outer track and an inner track concentric with said wheel and having their bearing surfaces in a plane parallel to the plane of said wheel, and having inturned portions constituting switching points, braces supporting the parallel portions of said track rigidly, the inturned portions of said tracks lapping past each other inwardly, and bearing rollers carried by said vane shafts, said rollers being fixedly spaced from said shaft, one in front and one in the rear of each shaft and each roller in the rear of the shaft coöperating with the free end of its inturned track to aid in the turning of the shaft.

2. A boat propeller comprising a shaft, a wheel and hub rigid therewith, a plurality of vanes having shafts journaled in said wheel and hub, an outer track and an inner track having their bearing surfaces in a plane parallel to the plane of said wheel, and having inturned portions constituting switching points, braces supporting the parallel portions of said tracks rigidly, the inturned portions of said tracks lapping past each other inwardly, bearing rollers carried by said vane shafts, said rollers being fixedly spaced from said vane shafts, one in front and one in the rear of said shafts, and each roller in the rear of the shaft coöperating with the free end of its inturned track to aid in turning the shaft, and means for shifting said tracks.

In testimony whereof, I set my hand in the presence of two witnesses, this 9th day of February, 1911.

CHARLES H. REAMES.

Witnesses:
A. L. JACKSON,
J. W. STITT.