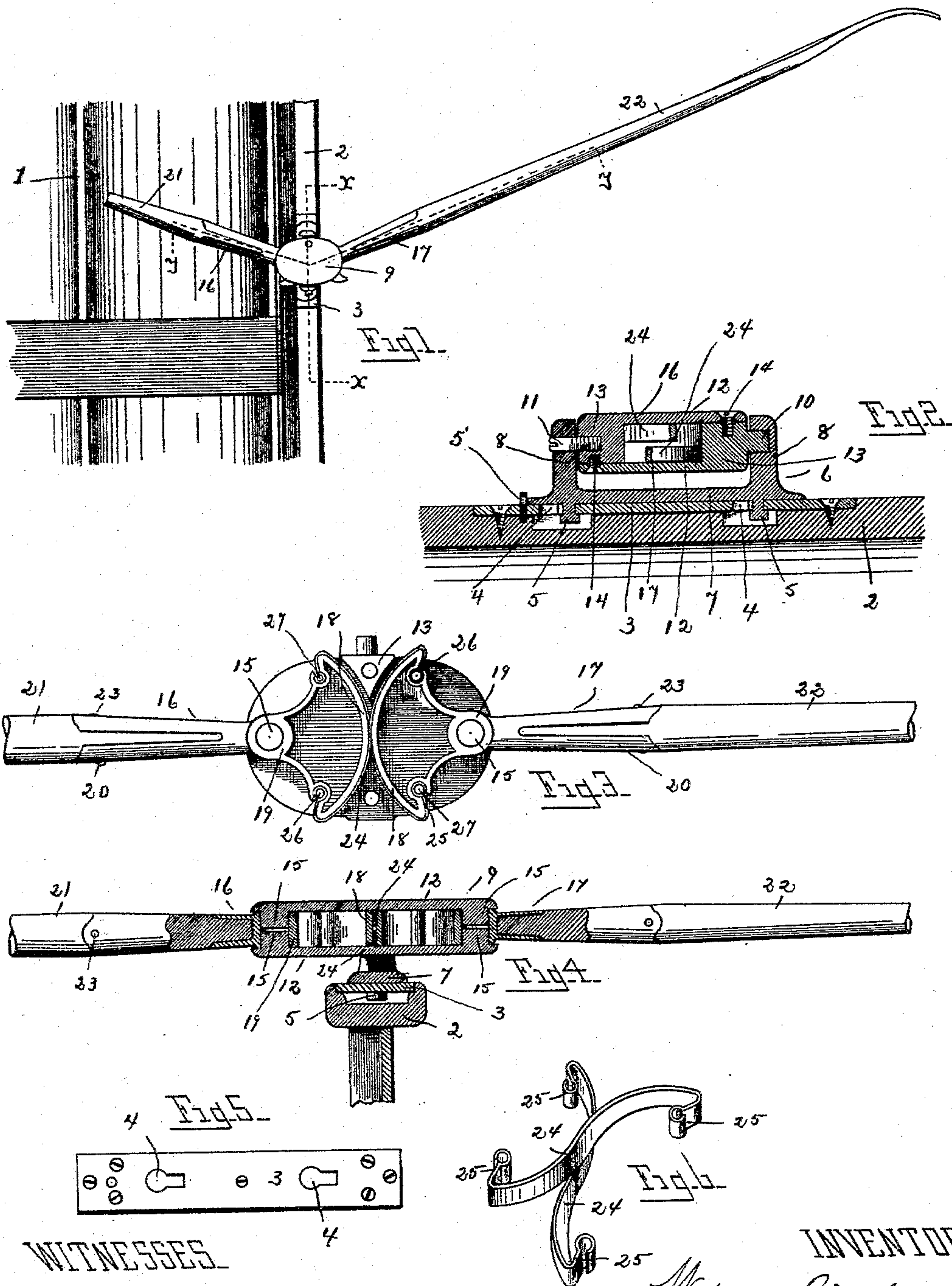


(No Model.)

W. BOARDMAN.  
ROWING GEAR.

No. 494,948.

Patented Apr. 4, 1893.



WITNESSES

Carroll J. Webster.  
Grace E. Lohamy.

INVENTOR

Wymen Boardman  
By William Webster  
Atty



# UNITED STATES PATENT OFFICE.

WYMAN BOARDMAN, OF TOLEDO, OHIO.

## ROWING-GEAR.

SPECIFICATION forming part of Letters Patent No. 494,948, dated April 4, 1893.

Application filed April 15, 1892. Serial No. 429,254. (No model.)

*To all whom it may concern:*

Be it known that I, WYMAN BOARDMAN, of Toledo, county of Lucas, and State of Ohio, have invented certain new and useful Improvements in a Rowing-Gear; and I do hereby declare that the following is a full, clear, and exact description of the invention, which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form part of this specification.

My invention relates to a rowing gear of that character in which the oarsman faces the direction in which the boat is being propelled.

The object of the invention is to provide an inexpensive gear in which there shall be an absence of noise or lost motion.

The invention consists in the parts and combination of parts, hereinafter described and pointed out in the claims.

In the drawings:—Figure 1 is a plan view of a portion of a boat, showing the rowing gear attached to the rail. Fig. 2 is a sectional elevation through the rowing gear, on lines  $x-x$  Fig. 1. Fig. 3 is a top plan view of the gear with the top plate removed. Fig. 4 is a sectional elevation on lines  $y-y$  Fig. 1. Fig. 5 is a plan view of the gunwale plate, and Fig. 6 is a plan view of the power transmitting plates.

1 designates the keel, and 2 the gunwale of the boat and 3 a plate secured upon the gunwale, said plate being formed with key hole slots 4, into which the depending pins 5 of the rowing gear support 6 enters, the pins 5 being formed with an enlarged head, which enters the enlarged portion of the key hole slot, and when moved toward the contracted portion bears upon the plate upon each side of the slot and holds the rowing gear support in place, there being a thumb screw 5' tapped into the plate to hold the same from movement. Support 6 is formed with a base plate 7 and standards 8 into which is swiveled the rowing gear casing 9 by means of a trunnion 10 formed upon one plate of the frame and a screw threaded pivot 11 screwed into the opposite plate and journaled in the opposite standard. Frame 9 is composed of two similar sections 12 each comprising a flanged por-

tion 13 and a plate, the flange and plate of each respectively having co-incident threaded holes into which is run screws 14 to hold the sections together. Upon the lower section of frame 9 is formed two journals 15 upon each of which is journaled a section of the gear. The gear comprises two metal sections 16 and 17 respectively, each of which is formed with a head 18 in the form of a segment of a circle, and a body portion 19 having a circular opening of a diameter to closely fit journal 15 and a socketed end 20, to receive the rowing lever 21, and oar 22 respectively, the sockets being preferably bifurcated for a portion of their lengths in order to allow of a sufficient yield to compensate for any shrinkage of the wood, the wood portions being secured therein by means of screws or pins 23, which allow of compensation for shrinkage by simply turning the screws to tighten the socket upon the wood.

24 designates metal straps of substantially S shape. Each end of straps 24 is turned at an acute angle to the body portion to closely embrace the pointed end of the segmental head, and is formed with a loop 25, which fits in a circular recess 26, formed in the rear side of the head, the loops being expanded to frictionally contact with the metal surrounding the recess by means of pins 27 driven into the loops, which firmly secures the straps to the head. Each strap is secured to two heads, one end being secured at the point of the segment of 16, and crosses over and is secured at the point of the segment of 17 at the lower side of the face of the segments, and the other secured upon the upper portion of the face of the segment in like manner but in reverse order, the straps being in sufficient tension to avoid lost motion when strain is put thereon in either direction. It will be seen that, by this arrangement, the oar is ready to respond instantly to any movement given to the lever, and that the operation is noiseless. It will also be seen that the co-incident bearing points of the curved faces act as a movable fulcrum in direct alignment with the weight and power.

What I claim is—

1. In a rowing gear, the combination, with the gunwale plate having key hole slots therein, of the gear support having headed pins



adapted to enter the slots and the set screw tapped into the plate to secure the support in a rigid position.

2. In a rowing gear the combination with a support comprising a base plate and standards, of the gear casings swiveled between said standards the trunnion integral with the casing and journaled in one standard, and the removable pivot passing through the opposite standard into the opposite side of the case so that it can be easily removed from the support when desired.

3. In a rowing gear, the combination with a support to be attached to the side of a boat, of a gear casing arranged within the support, composed of two sections each section consisting of a flat plate and side flange, said flanges being arranged upon opposite sides of the opposing plate producing a chamber between the plates, the gearing arranged within the chamber and journaled to one of the plates, and the screws passed through the

plates into the flange of the opposing plate whereby the sections are secured together.

4. In a rowing gear, the combination with a support, of a plate swiveled in the support, the segment shaped sections journaled upon the plate, and having recesses in their outer portions, their inner faces contacting, the metallic straps connected with the opposing segments and crossing each other, said straps having loops upon their ends which enter the recesses in the segment sections, and the pins for expanding said loops, whereby a positive connection is effected between the straps and segments.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

WYMAN BOARDMAN.

Witnesses:

WILLIAM WEBSTER,  
CARROLL J. WEBSTER.