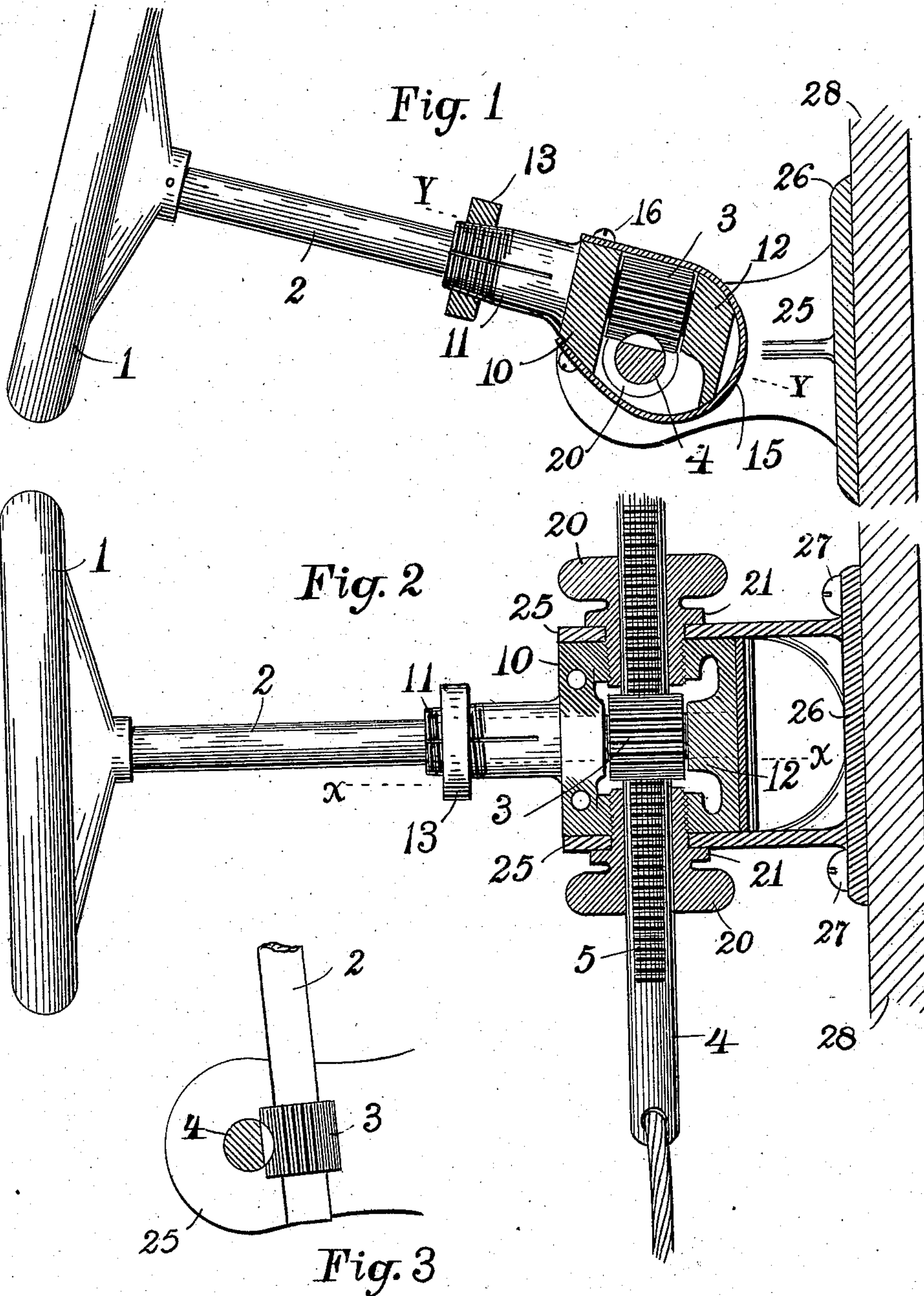


No. 854,883.

PATENTED MAY 28, 1907.

W. E. GEYER.
STEERING DEVICE.
APPLICATION FILED MAY 19, 1906.



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UNITED STATES PATENT OFFICE.

WILLIAM E. GEYER, OF CAMBRIDGE, MASSACHUSETTS.

STEERING DEVICE.

No. 854,883.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed May 19, 1906. Serial No. 317,752.

To all whom it may concern:

Be it known that I, WILLIAM E. GEYER, a citizen of the United States, and a resident of Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Steering Devices, of which the following is a specification.

In vapor launches and other small power boats, it is customary, as in larger water craft, to locate the steering apparatus near the stem of the boat, and having the same consist of a transverse rack-bar terminally joined to the tiller ropes and reciprocated by a pinion turned by a hand wheel.

The object of this invention is the construction of improved means for enabling such hand wheel to be readily adjusted to different angles for the better convenience of the skipper.

Referring to the drawings forming part of this specification, Figure 1 is a side sectional elevation on the line X—X in Fig. 2. Fig. 2 is a sectional plan view on the line Y—Y in Fig. 1. Fig. 3 is a diagrammatic view showing the hand wheel shaft adjusted to an approximately vertical position.

The hand wheel 1 is fixed upon the outer end of the shaft 2 at whose opposite end is a pinion 3. This shaft is mounted in bearings 11 and 12 forming integral parts of a single casting 10, and separated for a suitable space to receive said pinion. Said casting fits snugly between the two leaves 25 of the base 26, and is held in place therein by the two hand-screws 20 penetrating said leaves and tapped into said casting 10. These hand-screws are axially apertured to receive the cylindrical rack-bar 4 with which said pinion meshes; said rack-bar and pinion being tangential one relative to the other, as shown in Figs. 1 and 3, to permit such engagement. Inasmuch as said hand-screws fit the leaves 25 loosely, the casting 10, and hence the shaft 2, can be turned up and down to any angle, and then by tightening up on said hand-screws, said shaft and hand-wheel 1 will be fixed in the position desired; said hand-screws being formed with shoulders 21 between which and the casting 10 said leaves are firmly held.

To prevent any dirt, rope or garment-end from getting between the pinion 3 and rack-teeth 5, a sheet metal guard plate 15 is bent

about the casting 10 and fixed thereto by suitable screws 16, as shown in Figs. 1 and 2.

The base 26 being fixed to any suitable support, as the board 28 forming a part of the craft, by means of screws 27, the hand-screws 20 are unloosened and then tightened up again after the shaft 2 has been swung up or down to present the hand-wheel 1 at the proper position. As shown in Fig. 3, which shows the said shaft turned up nearly to a vertical position, the cylindrical rack-bar will turn with the pinion 3 and always suitably present itself in mesh with the latter, since the said rack-bar and the hand-screws 20 are concentric and the straight edges of the teeth of the pinion 3 force the rack-bar to turn with them.

As is evident, it is the work of only a moment to change this steering wheel from one position to another, so that in a second or two the skipper can adjust the same to accommodate his hand from a sitting posture to one in which he is standing up, or even to one where he may wish to lie down, as might be the case at times.

To enable the steering wheel to be locked at any point, I form the bearing 11 with a tapered, threaded outer end, split two or three times to give it compression, and mount thereon a nut 13. By forcibly turning said nut, said split bearing is made to clamp the shaft 2 at any desired point of revolution.

What I claim as my invention and for which I desire Letters Patent is as follows, to wit;—

1. In a steering device, the combination with a fixed base having two projections therefrom, of a member fitted between said projections, a cylindrical rack-bar loosely supported in said member, a steering device and shaft having bearings in said member, a pinion fixed on said shaft and meshing with said rack-bar, bearings for said member in said projections substantially concentric with said rack-bar, and means for clamping one or both of said projections against the adjacent side of said member and thereby retaining the steering device and shaft at a desired angle.

2. In a steering device, the combination with a fixed base, of a cylindrical rack-bar loosely supported thereby, a steering wheel and shaft, bearings for said shaft pivoted to said base concentric with said rack-bar, and a

pinion fixed on said shaft and meshing with said rack-bar; one of the pivots for said bearings consisting of a hand-screw penetrated by said rack-bar and tapped into the member composing said bearings.

3. In a steering device, the combination with a fixed base having two leaves projecting therefrom, of a casting located between said leaves, hand-screws loosely penetrating said leaves and tapped into said casting, a cylindrical-rack bar loosely located in openings axially extended through said hand-

screws, a shaft having bearings composing parts of said casting, a pinion fixed on said shaft between said bearings and meshing with said rack-bar, and a hand-wheel at the outer end of said shaft.

In testimony that I claim the foregoing invention, I have hereunto set my hand this 18th day of May, 1906.

WILLIAM E. GEYER.

Witnesses:

H. H. HILTON,
A. B. UPHAM.