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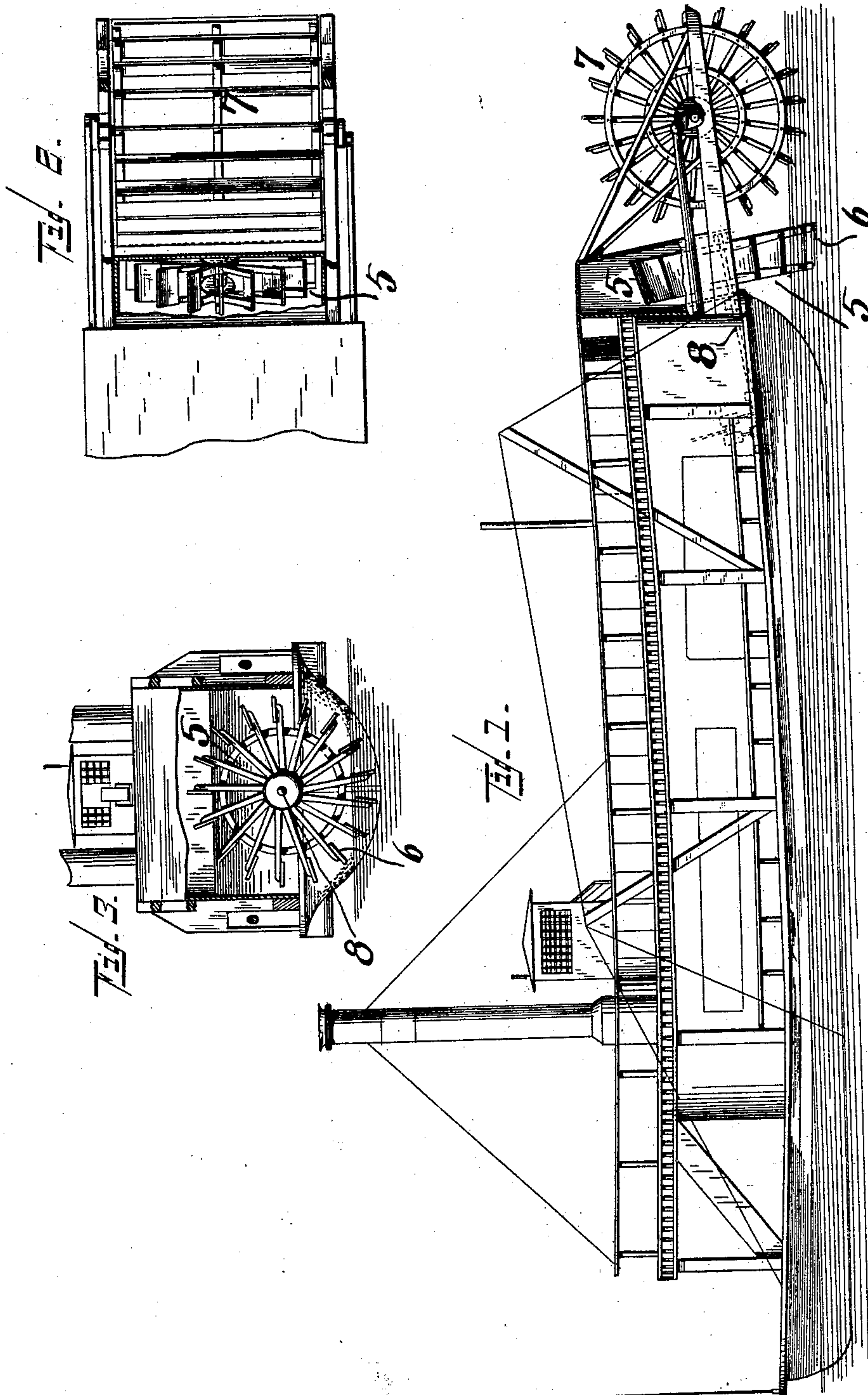
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STEERING AND MANEUVERING WHEEL FOR VESSELS.

(Application filed Aug. 2, 1901.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

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## STEERING AND MANEUVERING WHEEL FOR VESSELS.

SPECIFICATION forming part of Letters Patent No. 713,063, dated November 11, 1902.

Application filed August 2, 1901. Serial No. 70,581. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL W. COFLIN, a citizen of the United States, and a resident of Covington, Kenton county, State of Kentucky, have invented certain new and useful Improvements in Steering and Maneuvering Wheels for Vessels; and I do declare that the following is a clear, full, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, attention being called to the accompanying drawings, with the reference-numerals marked thereon, which form also a part of this specification.

This invention relates to certain new and useful improvements in the construction and application of steering-wheels to steer vessels and for changing their course and position while maneuvering, the arrangement being such as to dispense entirely with the customary rudder.

In the following specification, and particularly pointed out in the claims following, is found a full description of the invention, together with its operation, parts, and construction, which latter is also illustrated in the accompanying drawings, in which—

Figure 1 is a side view of a steamboat, being a so-called "stern-wheeler" and provided with my invention. Fig. 2 is a top view of the rear part of the preceding figure. Fig. 3 is a rear view of this boat with the propeller-wheel removed.

It is a well-known fact that with the ordinary means for steering vessels the position and course of such latter cannot be changed unless said vessel is also in motion, either forwardly or rearwardly, and the same must necessarily travel through a certain distance, requiring a certain time, before a change in course is effected. The change of direction to be so effected is also dependent on the speed of the vessel, and if such speed is slow it requires a longer time, which is a serious objection. The many disadvantages connected with this method of steering, especially in narrow water courses or channels and where quick changes are necessary to pass other vessels or obstructions, are too obvious and well recognized to require further mention.

The means for steering which my invention

contemplates are independent of the motion of the vessel, and the course of this latter may be changed gradually or with accelerated speed if contingencies—as, for instance, imminent collision—require it. For such purpose I provide in place of the usual rudder a steering-wheel 5 of suitable diameter, supported and constructed as hereinafter described and provided with blades, paddles, or so-called "buckets" 6 and supported so as to be capable of rotation at right angles to the longitudinal axis of the vessel and to the direction in which it is propelled. Any suitable means or power may be used for rotating it; but I propose to use auxiliary engines to be controlled by the pilot in the usual manner for steering a vessel and driven by any suitable power—steam, electricity, or whatever may be available on the boat. These controlling means may be the usual valves operated by levers, as is customary in the operation of steam-engines for the purpose of starting, stopping, and reversing them.

My invention is particularly intended for use on boats plying shallow waters, like is found in many western rivers, and requiring therefore low-draft vessels. The customary type of vessels on these rivers is the so-called "stern-wheeler," being propelled by a wheel at the stern, and my steering apparatus is accordingly constructed to suit such boats as to the mode of their propulsion, low draft, and shallow water in which they are to be used. The depth of water being limited, it is necessary that full advantage be taken of whatever there is available to obtain the largest steerage contact and action possible on varying loads, for which purpose I cause the paddles of the wheel to dip as deep as the low draft permits and which is with the lowest part of the periphery of the wheel about as deep as the deepest part or under side of the hull of the boat. It is furthermore desirable for quick action that the wheel be quite large, thus increasing its effective action and steerage-way due to increased contact with the water. This would in these low-hulled vessels cause the bearings and supports for the shaft of the vessel to be quite high above the hull and disturbing the proper relation between the meta-center and



center of gravity, a condition not conducive to the stability of the boat, for which reason shaft 8 of the wheel is accordingly supported in an inclined position, as shown.

5 This causes the bearings to be lower, particularly at the inner end of the shaft, where the power is applied. Incidentally it also causes the steering-wheel to assume an inclined position, which, however, is only an advantage

10 as increasing its contact and steering-way with the water. The outer edges of the paddles 6 are, however, disposed so that when dipping into the water they are about horizontal and also in line with the hull, which

15 effect is obtained by arranging these outer edges inclined with reference to the axis of the wheel. It is clear that under the conditions named—low hull for shallow water—the steering-wheel 5 requires about all the space—

20 that is, depth of water—at the end of the hull, and which space in other vessels is ordinarily occupied by one or more rudders. The inclined position of the wheel also reduces somewhat the space required for it between the end of the boat and propeller-wheel

25 7, the supports for which latter may accordingly be closer to the boat. It will at once be seen that a vessel so equipped may be turned even while in a stationary position, and this turning motion may be entirely controlled by the speed of the steering-wheel and

30 can be performed in quick time if exigencies require it.

Having described my invention, I claim as  
35 new—

1. A steering-wheel for a vessel, consisting of paddles carried on a shaft and supported so as to be capable of rotation at right angles to the direction in which the vessel travels when moved by the means provided for its propulsion, said shaft inclined with reference to the hull of the vessel and the outer edges of the paddles inclined with reference to the shaft and means for rotating this steering-wheel and for controlling its operation.

2. A steering-wheel for vessels propelled at the stern, the same being located between the end of the vessel and the propeller-wheel thereat and supported so as to be capable of rotation at right angles to the rotation of the propeller-wheel and inclined at an angle with its upper end toward the end of the boat and means for rotating it and for controlling its operation.

3. A steering-wheel for a low-depth vessel intended for use in shallow water, to take the place of the dispensed rudder, arranged so as to be capable of rotation at right angles to the longitudinal axis of the vessel, the same supported so that its lowest part is in line with the under side of the hull and always submerged under varying loads and means for so rotating it and for controlling its operation.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

SAMUEL W. COFLIN.

Witnesses:

C. SPENGEL,  
ARTHUR KLINE.