C. P. MACOWITZKY.

Vibrating Propellers.

No. 135,994. Patented Feb. 18, 1873.

Fig. 1.

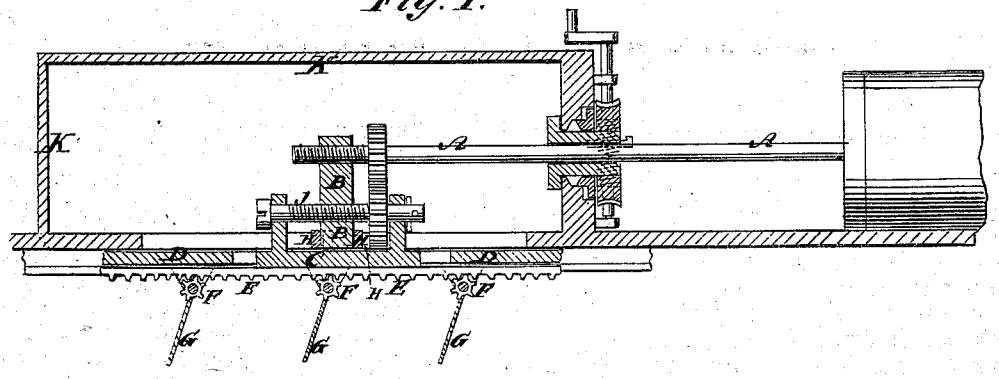
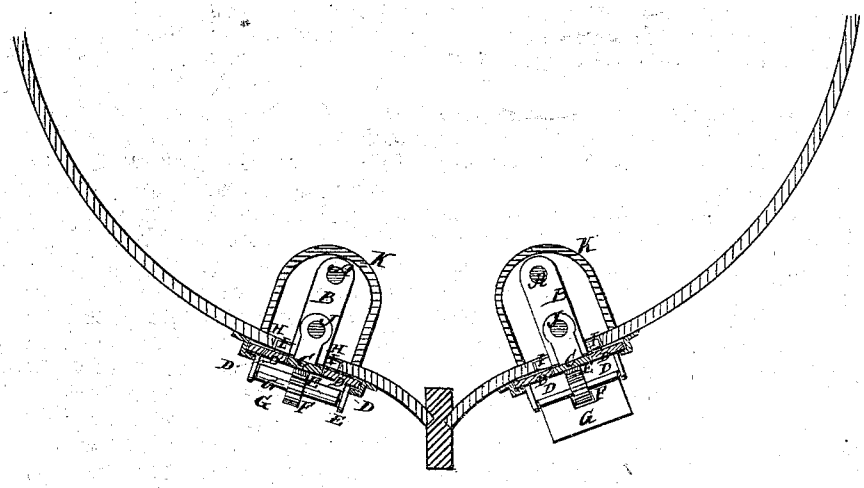


Fig. 2.



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UNITED STATES PATENT OFFICE.

CHARLES P. MACOWITZKY, OF CORPUS CHRISTI, TEXAS.

IMPROVEMENT IN VIBRATING PROPELLERS.

Specification forming part of Letters Patent No. **135,994**, dated February 18, 1873.

To all whom it may concern:

Be it known that I, CHARLES P. MACOWITZKY, of Corpus Christi, in the county of Nueces and State of Texas, have invented a new and useful Improvement in Propellers, of which the following is a specification:

Figure 1 is a detail longitudinal section of my improved device. Fig. 2 is a detail cross-section of the same.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved device for propelling steamers which shall be simple in construction and effective in operation, enabling the movements of the vessel to be controlled readily and so effectually that she may be turned almost upon her axis. The invention consists in the combination of an arm, sliding block or plate, sliding plate or frame, rack-bar, pinion-wheels, pivoted paddles, stops, and swiveled screw with each other and with the screw piston-rod of a steam-cylinder, as hereinafter more fully described.

The device is designed to be placed upon the bottom or the sides of the vessel, below the surface of the water, and one or more upon each side of the keel.

A represents the piston-rod of a steam-cylinder. The inner end of the piston-rod A is screwed into an arm, B, which passes through a slot in the bottom or side of the vessel, and its outer end is connected, in the manner hereinafter described, with a block or plate, C, which slides in a short slot in the plate or frame D. To the outer side of the block or plate C is securely attached a rack-bar, E, which slides upon the outer surface of the plate or frame D, and into its teeth mesh the teeth of small pinion-wheels F rigidly attached to the paddles G. The paddles G are securely pivoted to the plate or frame D. H are two stops attached securely to the arm B, and which strike alternately against stops I placed between them and secured to the plate or frame D to limit the movement of the plate or block C upon the plate or frame D. J is a screw, which is swiveled to two lugs attached to the block or plate C, and which passes through a screw-hole in the lower part of the arm B, so that by turning the screw J the arm B, and with it the stops H, may be adjusted with reference to the stops I, as may be desired, to reverse the paddles G. As the screw J is turned in the arm B the piston-rod A must also be turned in the said arm to keep the arm in proper position, so as not to interfere with the stroke of the piston. This may be done by connecting the screw J and piston-rod A with each other by equal-sized and equal-toothed gear-wheels, as shown in Fig. 1, so that either of said parts A J may be turned by turning the other. The piston-rod A or screw J may be turned from the pilot-house by a screw and screw-wheel or other suitable gearing. The parts of the device within the slotted bottom or sides of the vessel should be covered with a water-tight box, K, as shown in Figs. 1 and 2.

In operation, as the piston-rod A moves in the proper direction to drive the vessel forward the first effect is to slide the arm B and block or plate C upon the frame or plate D until one of the stops H strikes the stops I. This moves the rack-bar E and projects the paddles G to bear against the water. As the stops H strike the stops I the arm B, plate or block C, plate or frame D, and paddles G are all carried along together, the paddles acting upon the water to propel the vessel. As the piston-rod begins its return movement the first effect is to move the arm B and block or plate C upon the plate or frame D until the other stop, H, strikes the stop I. This moves the rack E and turns the paddles G in a horizontal position, so as to pass through the water with the least resistance. The arm B, block or plate C, plate or frame D, and paddles G then move on together.

The paddles are reversed by turning the screw J and piston-rod A to change the relative position of the arm B and stops H with respect to the block or plate C and stops I, as hereinbefore described.

By reversing the paddles upon one side while the paddles upon the other side work

in the ordinary manner the vessel may be turned in a very small space—almost upon her axis.

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

The combination of the arm B, block or plate C, plate or frame D, rack-bar E, pinion-wheels F, pivoted paddles G, stops H and I, and swiveled screw J with each other and with the screw piston-rod A of a steam-cylinder, substantially as herein shown and described, and for the purposes set forth.

CHARLES P. MACOWITZKY.

Witnesses:
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