J. WILCOXEN.

Mechanisms for Operating Screw-Propellers.

No. 139,098. Patented May 20, 1873

Fig: 1.

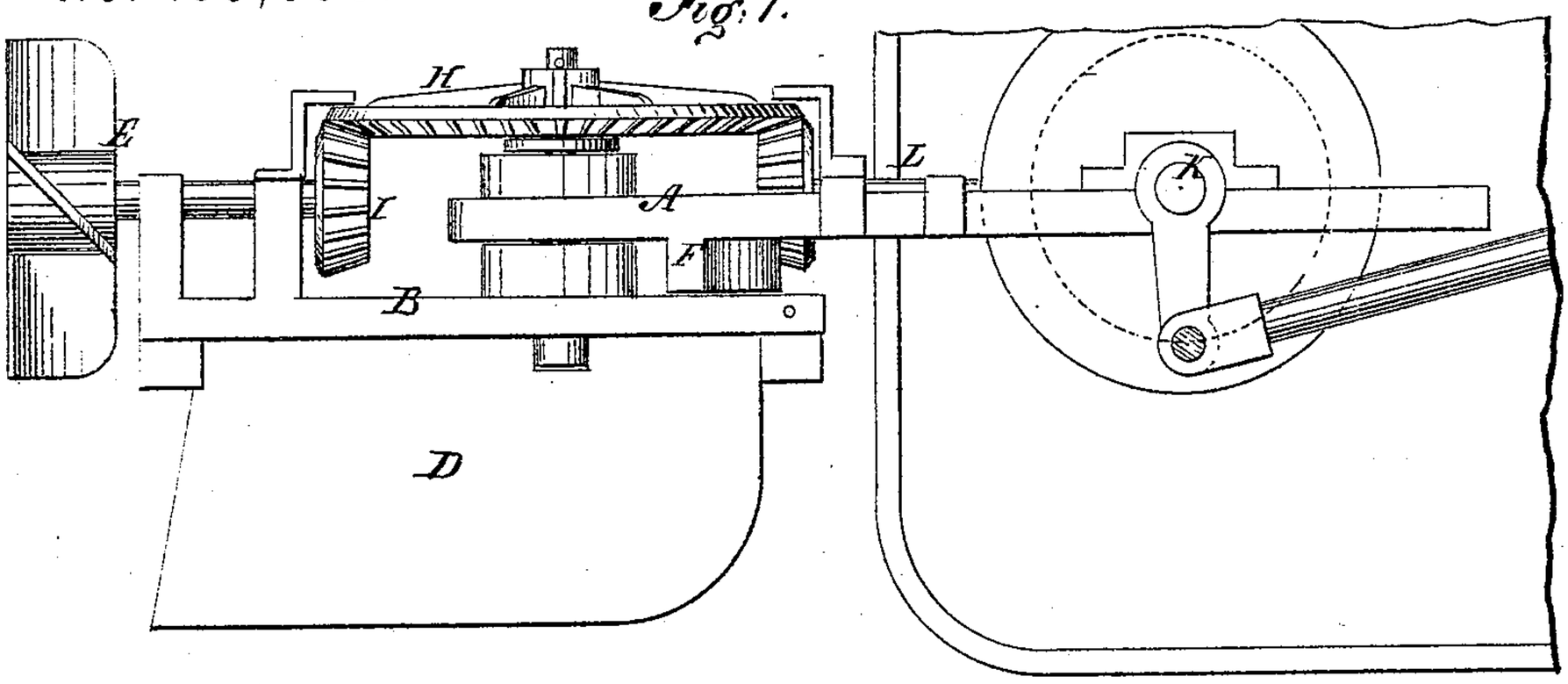
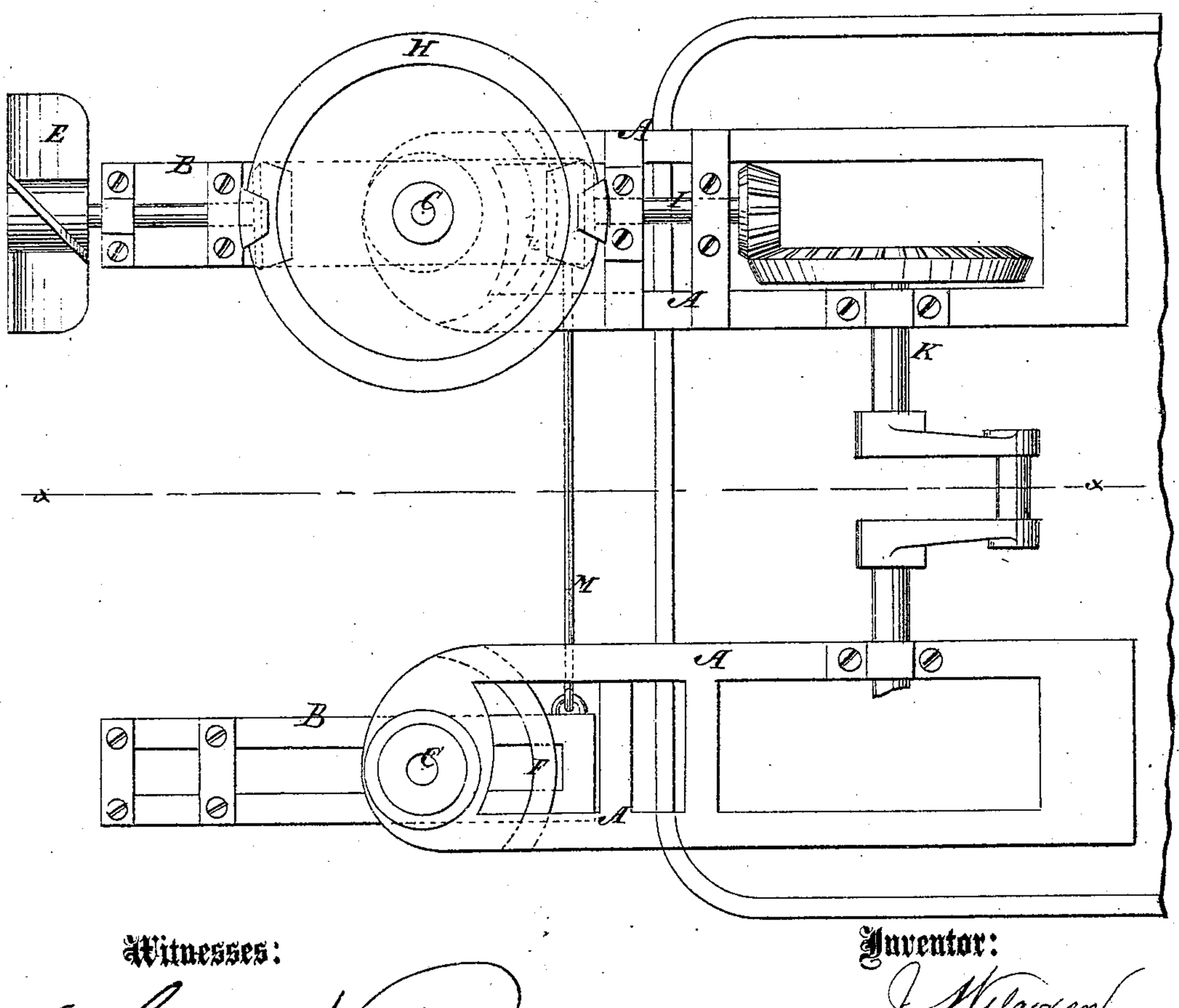


Fig: 2.



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UNITED STATES PATENT OFFICE.

JAMES WILCOXEN, OF RUSSELLVILLE, ILLINOIS.

IMPROVEMENT IN MECHANISMS FOR OPERATING SCREW-PROPELLERS.

Specification forming part of Letters Patent No. **139,098**, dated May 20, 1873; application filed January 25, 1873.

To all whom it may concern:

Be it known that I, JAMES WILCOXEN, of Russellville, in the county of Lawrence and State of Illinois, have invented a new and useful Improvement in Propelling and Steering Apparatus, of which the following is a specification:

My invention consists of twin screws and propellers, each mounted on a laterally-vibrating frame, wherewith is a horizontal drive-wheel on a vertical axis, coinciding with the axis whereon the frame swings, and gearing with the propeller-shaft, so that the propeller and the rudder can swing laterally to utilize both the propeller and the rudder for steering the boat, the said drive-wheel being also geared with the crank-shaft in the vessel for being operated. Twin screws and rudders are used to have one counteract the other in respect to the tendency of the drive-wheel to cause the propeller and rudder to swing around their axis in the application of the driving force. The two vibrating frames are connected together so as to act synchronously, and the chains of the steering-wheel are connected to them to work them to steer the boat

Figure 1 is a longitudinal sectional elevation of part of the helm of a vessel, and side elevation of one of the propellers and rudders and driving-gear, the section being taken on the line *x x* of Fig. 2, which is a plan view, showing both the vibrating frames, one of the propellers, and the driving-gear.

Similar letters of reference indicate corresponding parts.

A represents two strong stationary frames projecting from the stern of the vessel, one at each quarter, at the outer end of which is a short frame, B, pivoted at C, so as to swing horizontally to work the rudders, also the propellers for steering the vessel, they being mounted on the said frames, as shown at D and E. These frames B extend inward under the frames A, beyond the pivots considerably, and work under bearers F to counterbalance the overhang outside of the pivots and sustain them properly. H represents the drive-wheels for turning the propeller; they are mounted on vertical axes coinciding with the pivots C, around which the propeller-frames swing, so they may swing without interference with or obstruction to the gearing of the said wheel with them by the pinions I. The said drive-wheels gear with the crank-shaft K by the intermediate shafts L and suitable gear-wheels, and the engine connects with the crank-shaft. The arrangement of the gearing is such that the propellers turn in opposite directions, so that their tendency to swing, caused by the application of the power by the drive-wheels, is neutralized, the one by the other, the two frames B being connected by the rod M, so that each acts on the other. This connection also causes the synchronous action of the rudders and propellers for steering the vessel. The chains of the pilot-wheel will be connected to these frames in the same manner as they are attached to the rudders of the ordinary arrangement. The rudders need not necessarily be connected to these propeller-frames; they may be arranged separately, either one or two being used; but, for convenience in actuating them by the frames, I prefer to attach them as shown.

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

1. Twin propellers E, mounted on vibrating frames B, having attached thereto the rudders D, and geared with the crank-shaft by horizontal wheels pivoted in the axes of the frames, the said frames being connected together, and the propellers geared to revolve in opposite directions, combined and operating substantially as specified.

2. The combination with the vessel of the stationary frames A and vibrating frames B, arranged and adapted for the support and operation of the propellers, substantially as specified.

JAMES WILCOXEN.

Witnesses:

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