O. C. Phelps.

Steering

No. 43,522. Patented Jul. 12, 1864.

Fig. 1.

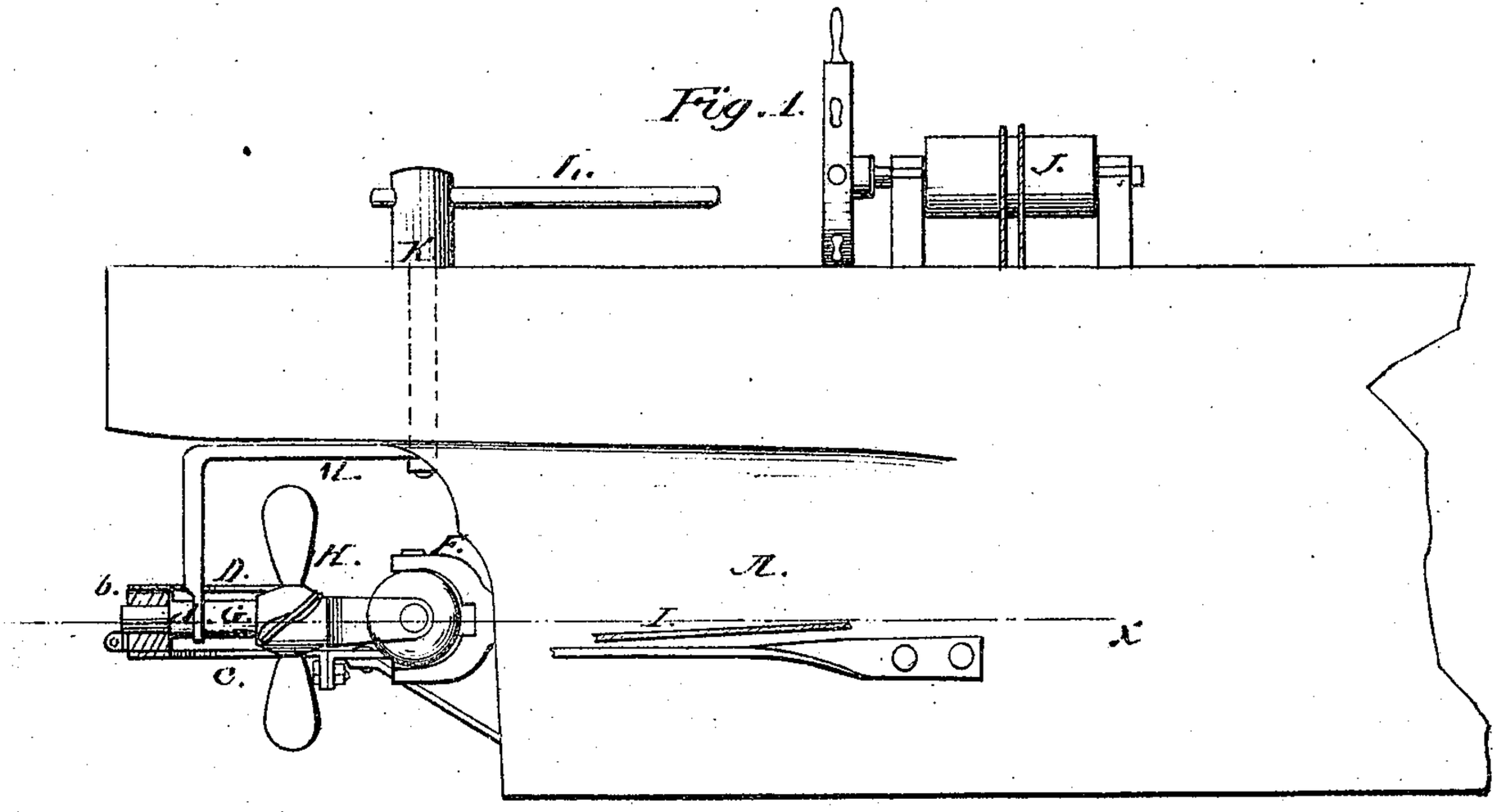
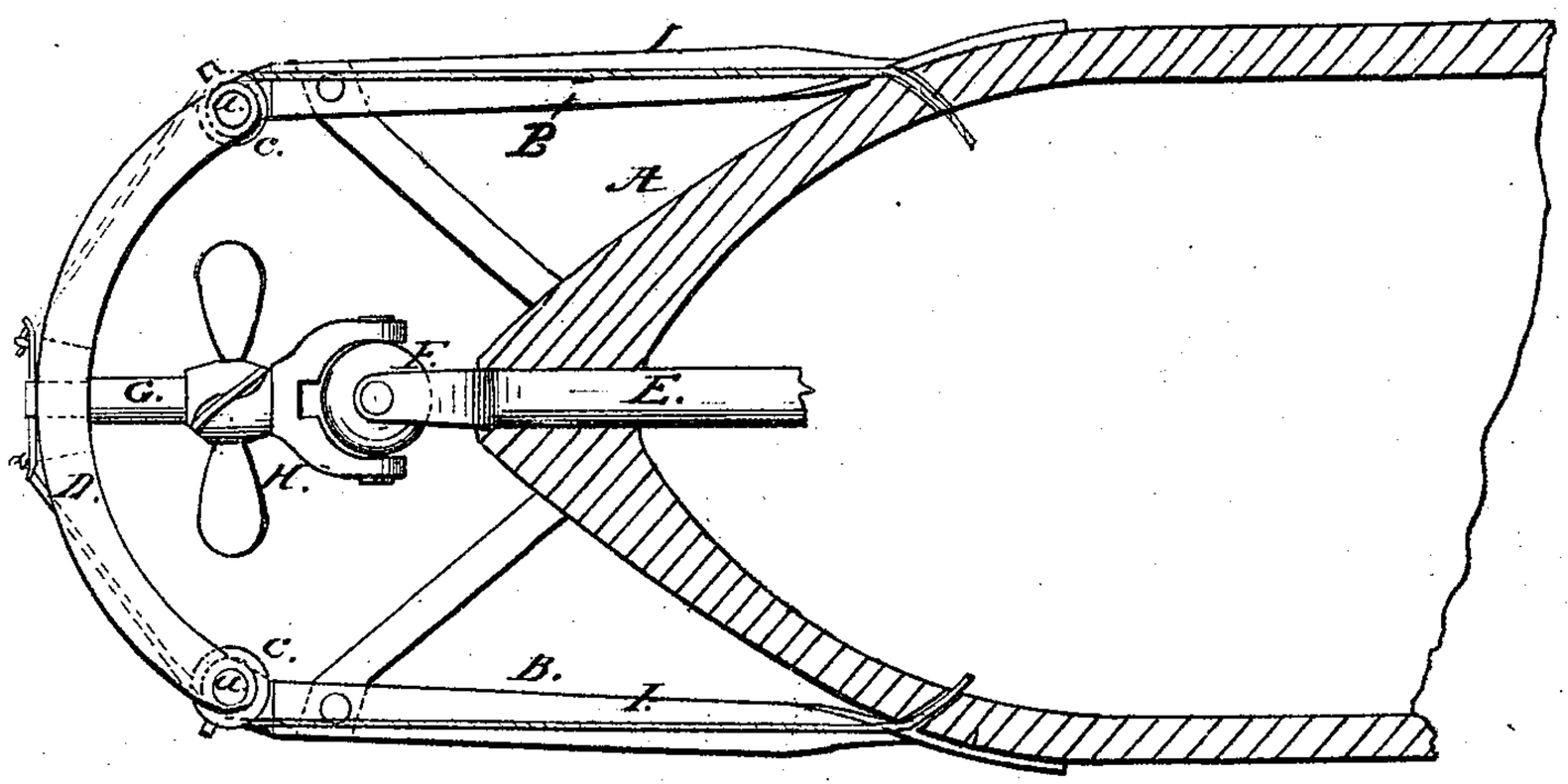


Fig. 2.



Witnesses;
J. P. Hall
Wm. F. McNamara

Inventor;
O. C. Phelps

UNITED STATES PATENT OFFICE.

O. C. PHELPS, OF NEW YORK, N. Y.

IMPROVED PROPELLER.

Specification forming part of Letters Patent No. **43,522**, dated July 12, 1864.

To all whom it may concern:

Be it known that I, O. C. PHELPS, of the city, county, and State of New York, have invented a new and Improved Propeller; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of my invention; Fig. 2, a horizontal section of the same, taken in the line *x x*, Fig. 1.

Similar letters of reference indicate like parts.

This invention consists in providing a vessel with an iron frame at its stern to form a support for the rear end of the propeller-shaft, and in connecting the steering-chains with the rear end of said shaft, and also in constructing the rudder-stem in such a manner that it may be connected with the propeller-shaft back of the propeller wheel.

The object of the invention is to obtain a propeller which, with its necessary connections, will be fully protected from shot, and also from drift-wood and ice, afford superior facilities in guiding, backing, and turning a vessel, convenience in repairing, and which may be operated with but little labor.

A represents the stern of a vessel, and B B two horizontal iron bars, one to each side of the vessel, extending backward, and connected to a curved iron bar, C, which forms part of a circle.

D is a bar precisely similar in form to C, and connected at its ends to pillars or uprights *a a* at the ends of C, D being directly over C.

E is a shaft, which is placed longitudinally in the vessel A, extends through its stern, and is connected by a universal joint, F, with the propeller-shaft G, the rear end of which has its bearings *b* fitted between the bars C D, which serve as a support and a guide for it, the curvatures of the bars C D being such as to form parts of circles of which the axis of the universal joint F is the center.

H is the propeller, which may be constructed in any of the known forms of the screw principle, and keyed on the shaft G.

I I are the steering-chains, which are attached one to each end of the bearing *a* of the propeller-shaft G, and pass around pulleys *c c* on the uprights *a a*, and thence extend forward and pass through the sides of the vessel and upward to a windlass, J. (See Fig. 1.)

K represents an upright shaft or stem, which is fitted in the upper part of the rear part of the vessel in line with the stern of the body of the vessel. This shaft or stem is allowed to turn freely, and is provided at its upper end with a tiller, L, and to its lower end there is attached an iron bar, M, bent in right-angular form, and having its lower and outer end provided with a fork, *d*, which is fitted over the propeller-shaft G. (See Fig. 1.)

From the above description it will be seen that the propeller is driven by the rotation of the shaft E, and that the propeller-shaft G may be moved in an oblique direction relatively with the driving-shaft E, either to the right or left of it, through the medium of the windlass J and steering-chains I I or by means of the tiller L. The propeller, therefore, besides performing its legitimate function, is made to serve the office of a rudder, and possesses superior advantages in backing and turning a vessel, as the latter may be readily turned while being backed. The propeller and its connections are also beyond the reach of shot, while the iron framing protects the propeller and its shaft from drift-wood and ice, the shaft being firmly retained in a proper working position, and all the parts are rendered accessible, so that repairs, when necessary, may be made with the greatest facility. The adjustment of the propeller for steering may also be accomplished with but little labor, and if the windlass mechanism should fail the tiller may used, and vice versa.

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

1. The employment or use, in stern-propellers for vessels, of an iron frame-work arranged so as to support the rear end of the propeller-shaft and admit of the lateral movement of the same, substantially as described.

2. Connecting the steering-chains with the rear end of the propeller-shaft, substantially as set forth.

3. The shaft or stem K, when used in combination and connected with the propeller-shaft G, substantially as and for the purpose specified.

O. C. PHELPS.

Witnesses:
J. P. HALL,
WM. F. MCNAMARA.