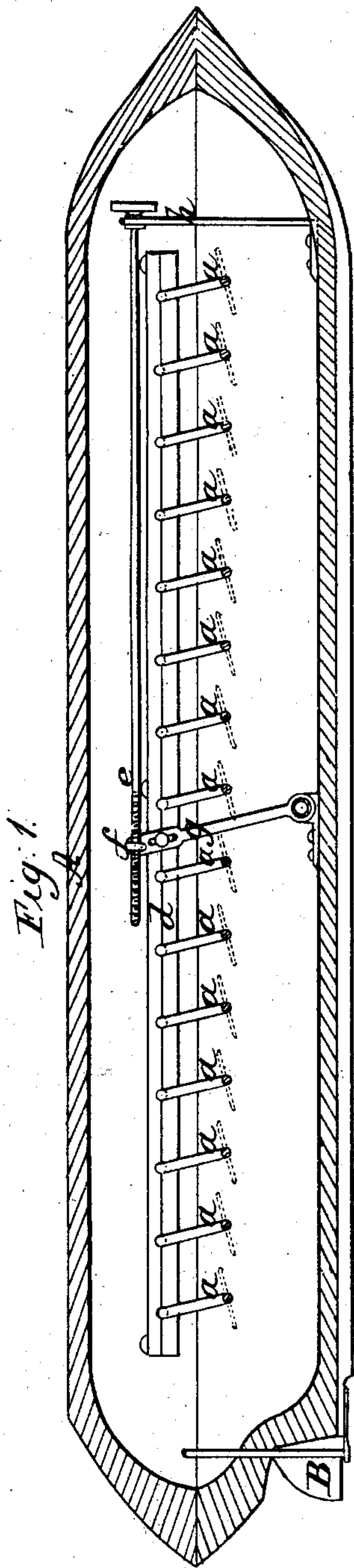


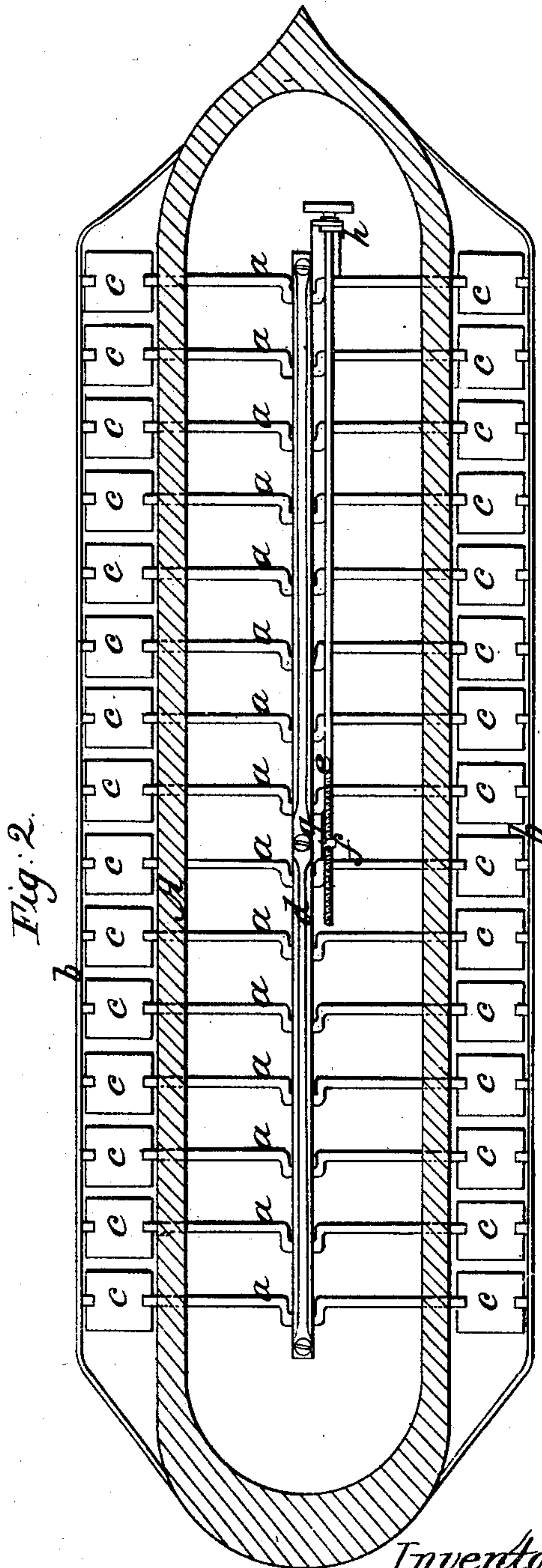
E. C. B. Rick.
Submarine Vessel.

Nº 69,940.

Patented Oct. 15, 1867.



Witnesses;
Gustav Berg
H. L. Dryburgh



Inventor;
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Attys

UNITED STATES PATENT OFFICE.

E. CHARLES B. RIEK, OF HERMANN, MISSOURI.

IMPROVED SUBMARINE VESSEL.

Specification forming part of Letters Patent No. 69,940, dated October 15, 1867.

To all whom it may concern:

Be it known that I, E. CHARLES B. RIEK, of Hermann, in the county of Gasconade, and in the State of Missouri, have invented a new and useful Improvement in Submarine Vessels; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which drawing—

Figure 1 represents a longitudinal vertical section of this invention. Fig. 2 is a horizontal section of the same.

Similar letters indicate corresponding parts.

This invention consists in the arrangement of a series of floats or fins on the ends of crank-shafts, passing transversely through the vessel, in combination with a rod connecting the various crank-shafts, and with an adjusting-screw, in such a manner that by the action of said screw the fins can be adjusted simultaneously from the interior of the vessel, and the vessel can be made to descend or to rise in the water, or to move in a horizontal direction, as may be desired.

A represents the hull of my submarine vessel, which may be constructed of wood or of metal, or of both combined, as circumstances may dictate. This hull is closed water-tight, and it is provided with man-holes or hatchways, closed by water-tight covers, through which access can be had to the interior of the vessel.

A suitable propeller and steam-engine or other power serve to produce the required motion of the vessel, and rudder B serves to steer it, in the usual manner. The propelling mechanism is not shown in the drawing, since I do not desire to lay claim to any part thereof.

Through the hull A extends, in a transverse direction, a series of crank-shafts, *a*, which have additional bearings in cages *b*, secured to the sides of the vessels, and extending from stem to stern, as clearly shown in Fig. 2 of the drawing.

On the crank-shafts, between the sides of the vessel and the cages *b*, are mounted the

floats or fins *c*, and the cranks of the several shafts are connected by a rod, *d*, as shown in the drawing. By pushing this rod in the direction of the arrow marked on it in Fig. 2, the fins are turned, so that when the vessel is under headway it will be caused to descend by the action of said fins, and by pushing the rod *d* in the opposite direction the fins adjust themselves in such a manner that the vessel will rise in the water, provided it is propelled by some suitable power.

The position of the connecting-rod *d* and of the fins is regulated by a screw, *e*, which is tapped into a swivel-nut, *f*, secured to the upper end of the oscillating lever *g*, which is provided with a slot catching over a stud that projects from the side of the rod *d*; or the connection between the rod *d* and screw *e* may be effected in any other suitable manner.

Close to the head of the screw is an annular groove that drops into a forked standard, *h*, and prevents said screw from moving in a longitudinal direction, so that by turning the screw in one direction the rod *d* is caused to move in the direction of the arrow marked on it in Fig. 2, and by turning the screw in the opposite direction the rod is moved in the direction opposite to said arrow, and the fins are adjusted accordingly.

In a full-sized vessel the screw *e* is turned by suitable gear, and the fins can thus be adjusted from the interior of the vessel with ease and facility.

By this arrangement the motion of a submarine vessel can be governed at pleasure, and said vessel can be made to descend or to rise in the water, or to move through the same in a horizontal direction, as may be desired.

What I claim as new, and desire to secure by Letters Patent, is—

The arrangement of a series of crank-shafts, *a*, carrying fins *c*, and connected by a rod, *d*, in combination with the adjusting-screw *e* and vessel A, constructed and operating substantially as and for the purpose set forth.

E. CHARLES B. RIEK.

Witnesses:

P. MILLER,
M. HENNEBERGER.