C. F. E. Blaich.

Steering.

No. 25,878. Patented Oct. 25, 1859.

Fig: 1:

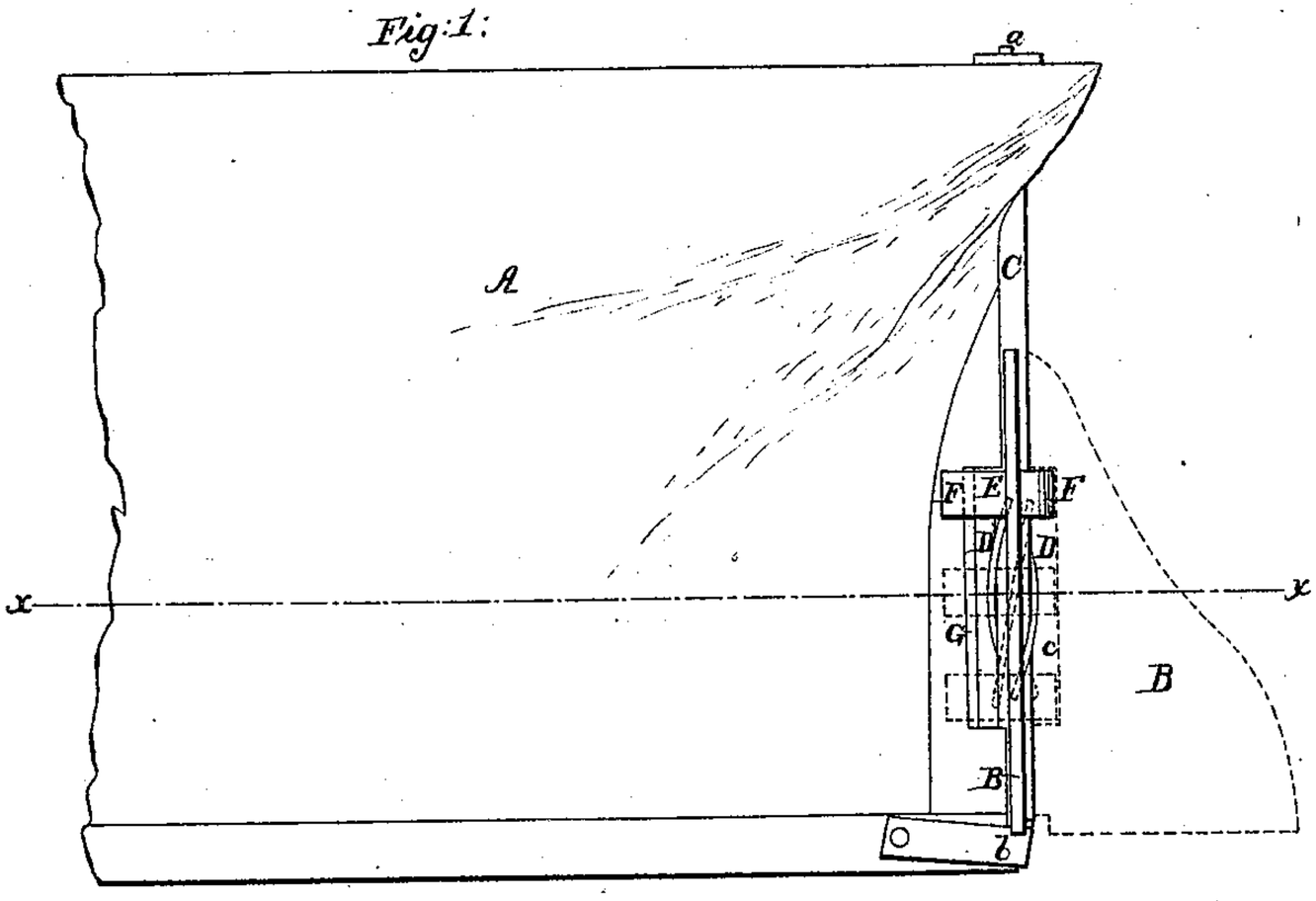


Fig: 2:

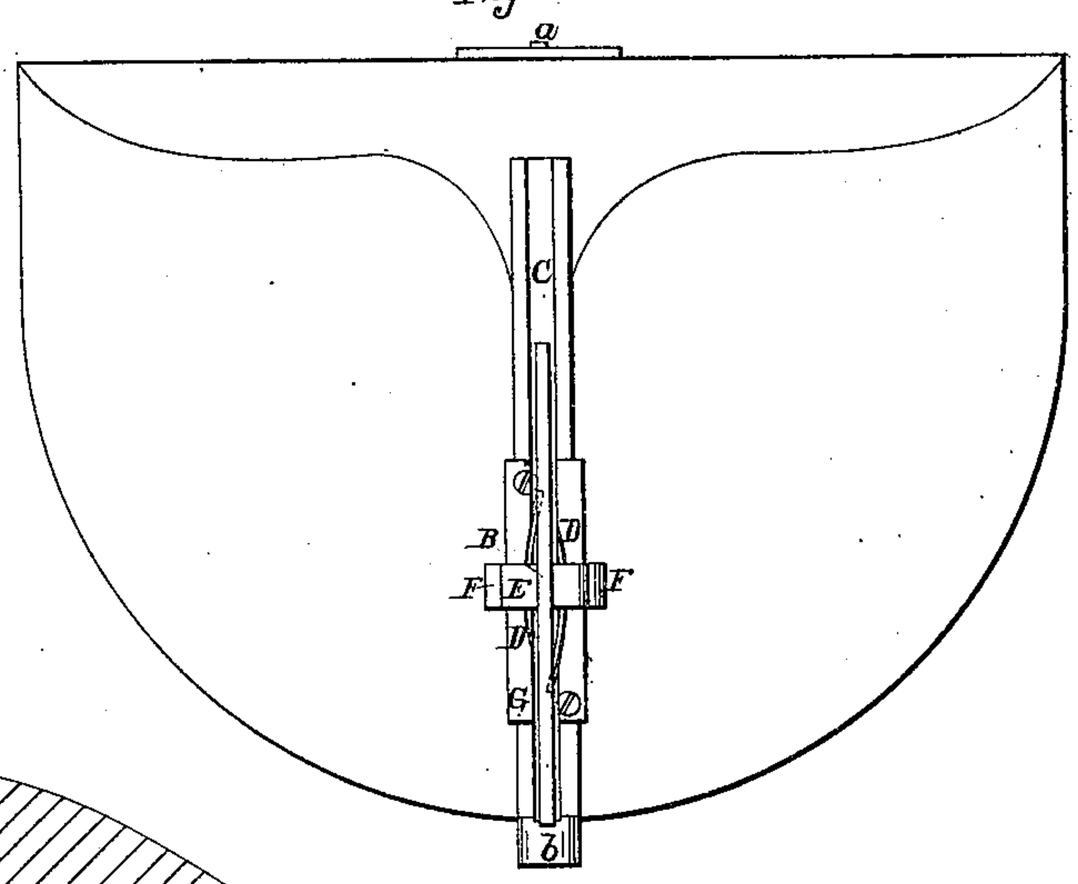
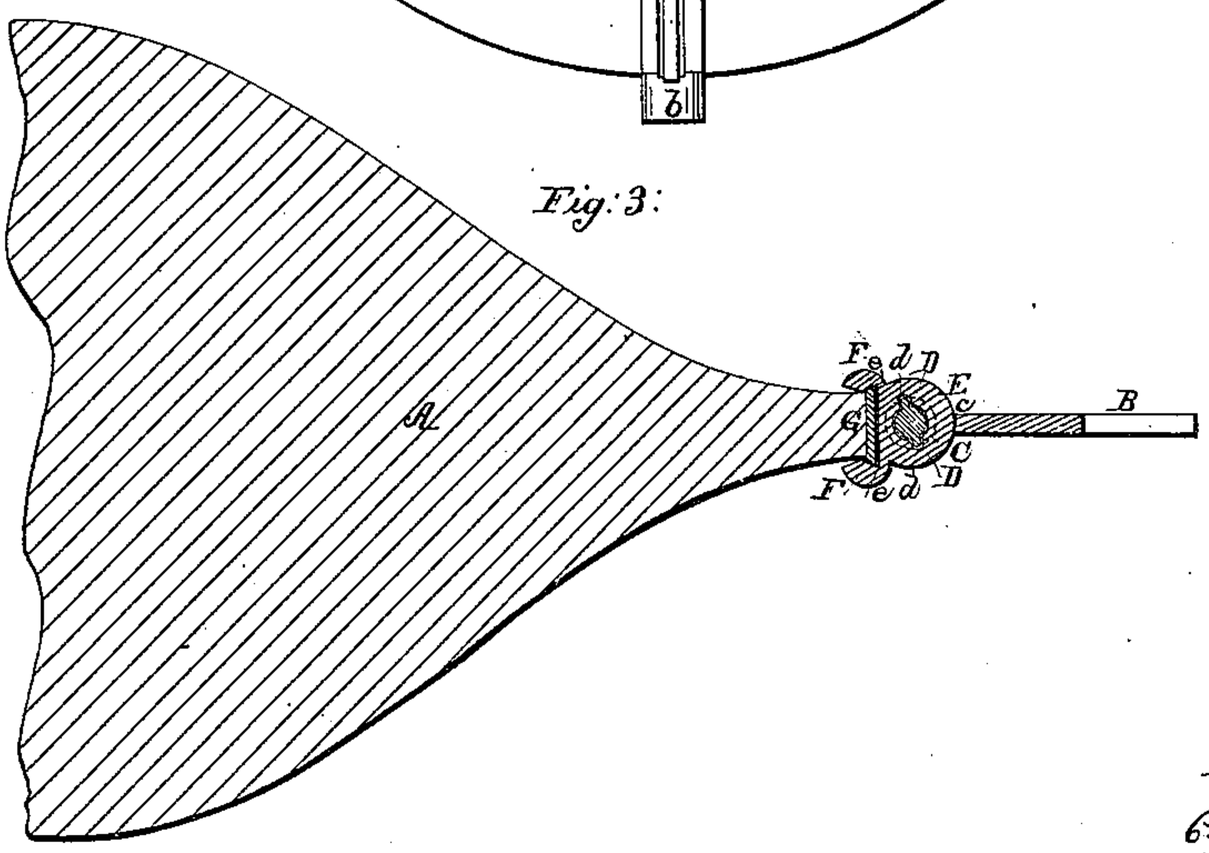


Fig: 3:



Witnesses;
Goodwin S. Abbot
R. W. Fennick

Inventor;
C. F. E. Blaich.

UNITED STATES PATENT OFFICE.

C. F. E. BLAICH, OF ELYRIA, OHIO.

APPARATUS FOR OPERATING RUDDERS.

Specification of Letters Patent No. 25,878, dated October 25, 1859.

To all whom it may concern:

Be it known that I, C. F. E. BLAICH, of Elyria, in the county of Lorain and State of Ohio, have invented a new and useful Improvement in Devices for Operating Rudders; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of the rear portion of a ship, with my improvement attached. Fig. 2, end elevation of the same, and Fig. 3, a horizontal section of the same.

Similar letters of reference, in each of the several figures indicate corresponding parts.

The nature of my invention consists in the arrangement of one or more spiral ribs on the rudder shaft, and having a sliding tube fitted to said ribs by means of spiral grooves formed in its eye; said tube having ears and being dovetailed to a plate on the stern of the ship, so as to slide up and down on said plate and on the shaft within a groove or space provided in the back of the rudder, substantially in the manner and for the purposes hereinafter set forth.

To enable others, skilled in the art, to make and use my invention, I will proceed to describe its construction and organization.

A, represents the stern of a ship.

B, is the rudder attached to a vertical shaft C, which is hung in bearings *a*, *b*, of the ship as shown. A portion of the rudder B, is cut away at *c*, for the purpose presently seen.

D, D, are spiral ribs formed on the shaft C, about midway of its length; the spiral of these ribs is to commence on one side of the shaft and terminate on the other side, so as to produce a half revolution in the rudder; or any desired extent of movement of the same. E, is a tube with spiral grooves *d*, in the circumference of its eye; this tube is fitted over the shaft C, so that the spiral ribs gear into the grooves *d*, as represented in Fig. 3.

F, F, are ears formed on the tube E, and having a female dovetail groove *e*, formed in them, and G is a male dovetail plate fastened to the stern of the ship; over this plate, the tube slides up and down as illustrated in red, black and blue, being confined to the same by means of the dovetail groove *e*, as represented in Fig. 3. In order to avoid friction, rollers may be interposed between the spiral ribs and grooves.

From the above description of parts, it will be seen that if the tube is moved up or down, by means of any suitable lever or screw arrangement leading down from the top of a ship, and connecting with it, its spiral grooves will cause the spiral ribs to turn the shafts of the rudder either to the right or left, to the extent desired, in a very expeditious manner; owing to the tube having no revolving movement and the spiral ribs having an inclination which is very steep.

My invention is very simple, and the great advantage of the same lies in the facility with which the rudder can be adjusted by it.

By having the upper bearing of the shaft C, constructed so as to allow the shaft to slide through it, the rudder can rise and fall and thus pass over any obstacle which may come in its way, for it is evident that if the tube remains stationary, the spiral ribs will pass up through the grooves when any force acts against the bottom of the rudder: the rudder of course turning out of a parallel line with the course of the ship as it rises.

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

The combination of the rudder B, C, spiral ribs D, and spirally grooved sliding tube E, substantially in the manner and for the purposes set forth.

C. F. E. BLAICH.

Witnesses:
GOODWIN Y. AT LEE,
R. W. FENWICK.