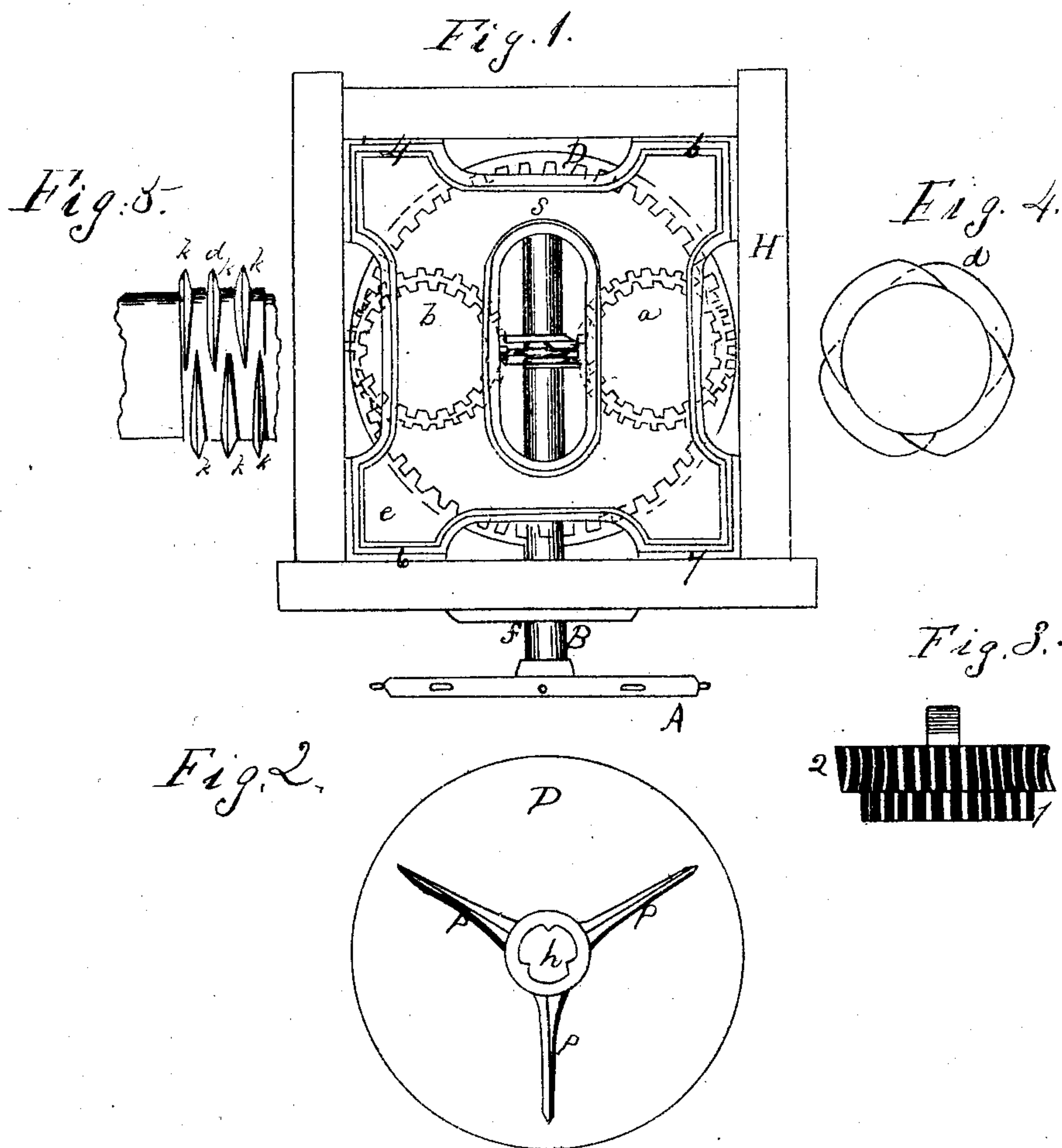


C. H. Sanyer.
Imp^d Steering Apparatus.
 N^o 76105 Patented Mar. 31. 1868.



Witness:

Henry C. Houston
 Wm. Frank Sanyer

Inventor:

Chas. H. Sanyer
 Per atty William Henry Clifford

United States Patent Office.

CHARLES H. SAWYER, OF BUXTON, MAINE.

Letters Patent No. 76,105, dated March 31, 1868.

IMPROVEMENT IN STEERING-APPARATUS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, CHARLES H. SAWYER, of Buxton, in the county of York, and State of Maine, have invented a new and useful Improved Steering-Apparatus; and I hereby declare the following to be a full, clear, and exact description thereof, which will enable others to make and use my invention, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top view.

Figure 2 is a bottom view of the revolving plate to hold the rudder-head.

Figure 3 is a side view of one of the small double gears.

Figure 4 is an end view of the screw on the wheel-shaft.

Figure 5 is a side view of the same.

The object of my invention is the production of an apparatus for steering vessels with increased ease, and also one which, by its construction, is not liable to be turned, or to allow the rudder to turn, when struck or pushed by the water.

My invention consists of a shaft having the ordinary hand-wheel, of common construction, and having also a right-and-left screw set upon itself, to operate two gears placed on either side thereof, which gears, meshing into a large gear on the inner periphery thereof, give revolution to it, and with it the rudder-head attached thereto.

A shows the wheel; B, the shaft; *a b*, two small gears of the form seen in fig. 3. These have vertical shafts connected to the upper plate *e*, upon which shafts they revolve. *d* is the right-and-left screw on the shaft B. The shaft is hung at *f*, and also in a hole in a projection on the under side of the upper plate at *g*. D is a large gear, with the teeth thereof on the inner periphery, which match the part 1 of the smaller gears, (see fig. 3.) The under side of this wheel or gear is seen in fig. 2, where the rudder-post head is attached, at *h*. The part 2 of the small gears, fig. 3, receives the screw *d*, on the shaft B.

The device is enclosed in the box or cover H. The upper plate *e* is set in the box, as shown in the drawing, with elastic packing, at 4 5 6 7. *o* is the place for the reception of the rudder-post, the ribs *p* being for the purpose of strengthening the wheel or gear.

The operation of my invention is as follows: By turning the wheel A and shaft B, the small gears *a b* are caused to revolve in the same direction, thus imparting motion to the large wheel or gear D, and with it to the rudder of the vessel. When the wheel has once been turned as desired, it is obvious that no force upon the rudder will reverse the motion, because the force will be exerted in a horizontal direction against the threads *k*, which will resist any change in the position of the wheel and rudder. Sufficient play to the rudder is given by the elastic packing of the upper plate *e*, at 4 5 6 7, before described, which will operate to ease the rudder when struck by a wave. A cover over the top of the box containing the gears protects them from the weather.

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

The steering-apparatus, as herein described, having the wheel-shaft B, with its right-and-left screw *d*, and the two small double gears *a b*, the larger gear D, with the teeth on the inner periphery thereof, as and for the described purposes.

CHS. H. SAWYER.

Witnesses:

WILLIAM HENRY CLIFFORD,
WM. FRANK SEAVEY.