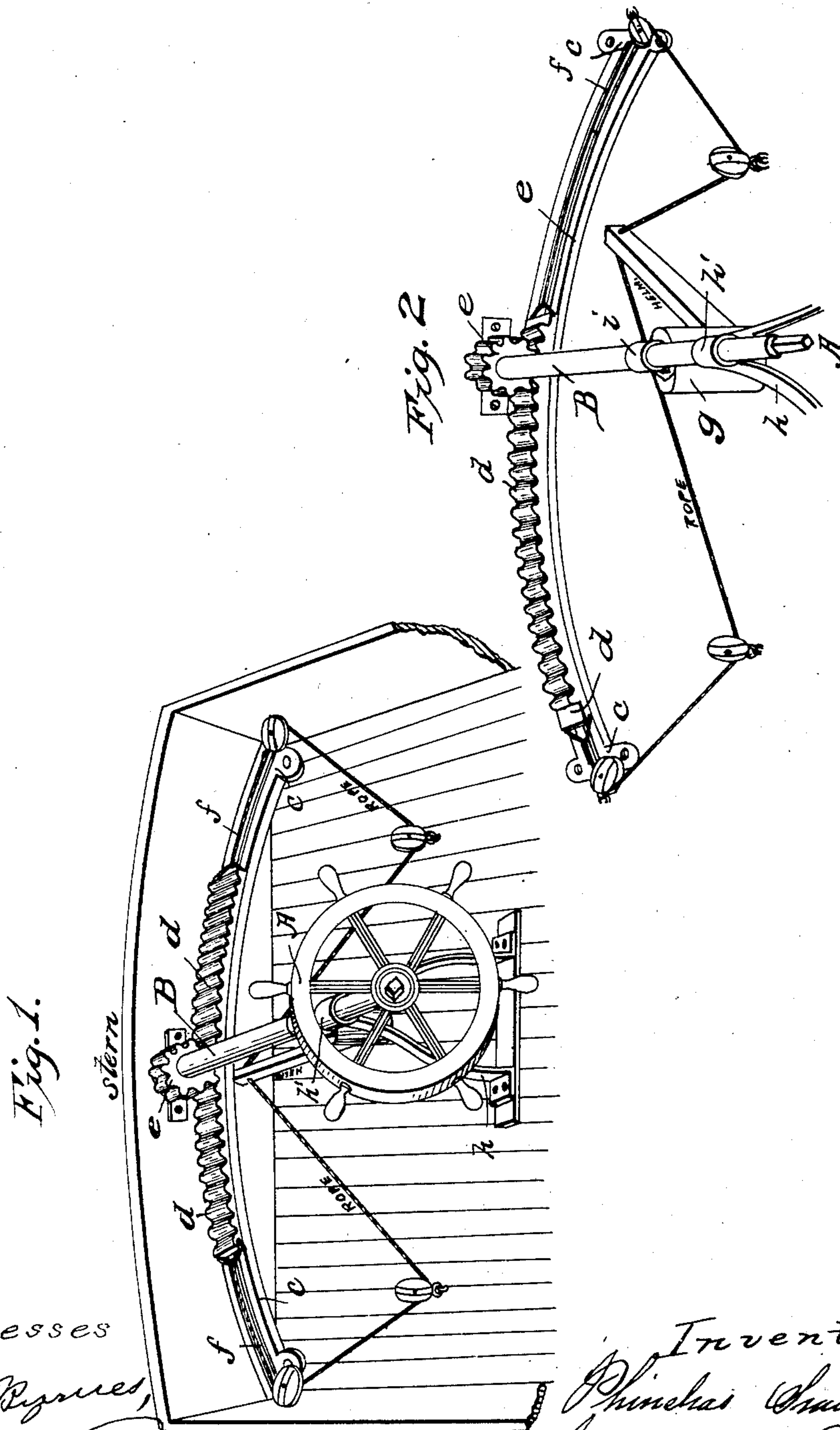


P. SMITH.
STEERING APPARATUS FOR VESSELS.

No. 17,525.

Patented June 9, 1857.



Witnesses
Esther Rymer,
David Lowther

Inventor
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By Atty. James P. McLean

UNITED STATES PATENT OFFICE.

PHINEHAS SMITH, OF PATCHOGUE, NEW YORK.

STEERING APPARATUS FOR SHIPS.

Specification of Letters Patent No. 17,525, dated June 9, 1857.

To all whom it may concern:

Be it known that I, PHINEHAS SMITH, of Patchogue, in the county of Suffolk and State of New York, have invented a new and useful Improvement in Apparatus for Steering Ships and other Vessels; and I hereby declare the following to be a full, clear, and exact description of the construction and operation thereof, reference being had to the accompanying drawings, which are lettered to correspond with the specification and to form a part of the same.

Description.

Figure 1 is a bird's eye view of the apparatus. Letter (A) is an ordinary wheel used for steering vessels. (B) is a horizontal shaft attached to the wheel (A) at one end thereof and having a small pinion (e) at the other end and which meshes into the female cogged plate (d) that moves parallel with the stern of the vessel when operated by the rotatory motion of the pinion (e) which is turned by the wheel (A). Letter (C) is a flat-bed plate bowing upward at the middle thereof and running across the deck at the stern of the vessel. This plate has a rib at its center (running lengthwise of the bed plate) that corresponds with the slot or groove in the bottom or underside of the movable cogged plate (d) thus forming a track for the traveling plate (d) to move upon when operated by the pinion (e) which is held in its place by means of the end of the shaft (B) passing into the plate or box (i, i') which is firmly fastened to the stern piece of the vessel. The other end of the shaft (B,) is held firmly by the brace (h) Figs. 1, 2, and the eye of the swivel (k) on the top of the rudder head (g).

Figs. (1, 2, 3, 4) are pulley blocks through which the rope passes, back and forth when drawn by the cogged plate (d) to which the ends of the rope are attached as shown in the drawings.

The wheel (A) shaft (B) and pinion (e) are fixed on a line with the center of the stern of the vessel as shown at Figs. 1 and 2. By turning the wheel (A) one half of a revolution I operate the pinion (e) sufficient to carry the cogged plate (d,) to its extreme end either way as shown at Fig. 2, that causes the rope which is attached to both ends of the movable cogged plate (d) to operate the helm (L) sufficiently far to throw the rudder to either extreme point or about ship during which operation I have

no slack rope hence there is no danger of the ropes riding or lapping over each other as is frequently the case of the ordinary steering apparatus that is in common use and every seaman is well acquainted with the danger arising therefrom in a gale of wind.

The superiority of my arrangement over the circular movable cogged bed or quadrant having metallic arms or braces from the rudder head to the circular bed and the main shaft having a pinion next to the steering wheel which travels around upon the circular bed thus operating the rudder, is that in case of a heavy sea or other obstacle striking the rudder suddenly the only result is (on account of the stiff braces or arms) that the rudder must break or pinion give way besides the tremendous shock to the man at the wheel also the bad effect of the great amount of iron upon the needle.

The spiral or screw upon the shaft (operated by means of cogs or pinions) are subject to the same difficulties in time of a storm or gale at sea on account of it being too stiff. Hence after thirty years practical experience at sea I find nothing superior to the application of the rope in operating the helm or rudder as it is sufficiently elastic to relieve the rudder as well as the man at the wheel, but the great difficulty has heretofore been that we could not get a quick control of ship on account of having to take up the slack rope without having the ropes lap or ride each other as aforesaid but by the above described apparatus I obviate that great difficulty and have a quick and perfect control of the rudder hence I believe it to be a novel and useful improvement.

I do not claim to be the inventor of the individual parts of the above described apparatus.

What I claim as my invention and wish to secure by Letters Patent of the United States is—

The arrangement of the movable cogs (d, d) plate (c,) pinion (e,) and ropes; as herein set forth and shown in the drawings, for operating the tiller by the steering wheel (A.)

In testimony whereof I hereunto subscribe my name in the presence of two witnesses.

PHINEHAS SMITH,

Witnesses:

DAVID CROWTHER,
JAMES P. McLEAN,