

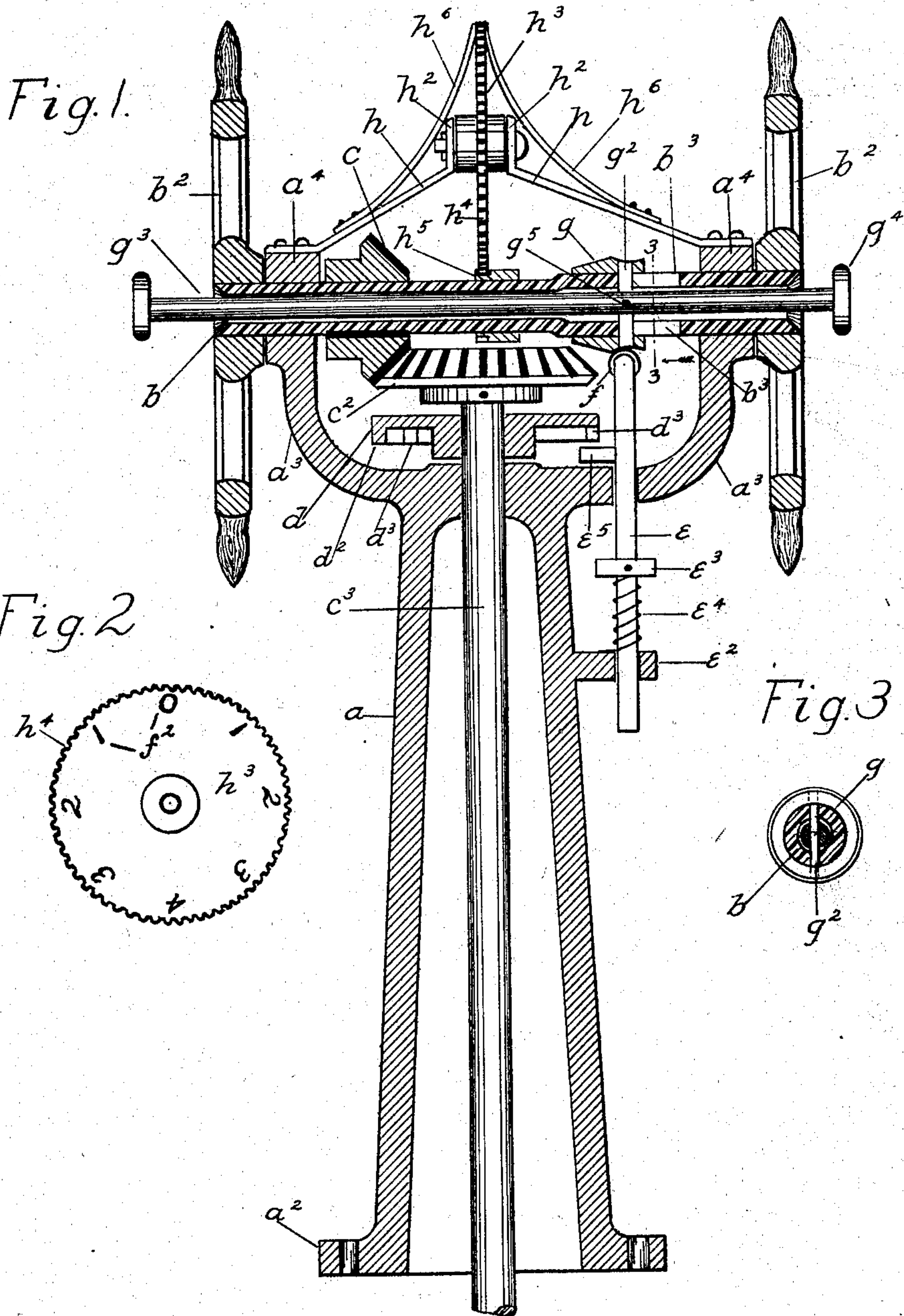
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D. W. RANTINE.
STEERING APPARATUS.

APPLICATION FILED FEB. 10, 1902.

NO. MODEL.



WITNESSES

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STEERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 719,869, dated February 3, 1903.

Application filed February 10, 1902. Serial No. 93,291. (No model.)

To all whom it may concern:

Be it known that I, DANIEL W. RANTINE, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Steering Apparatus, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide an improved steering apparatus which may be used in connection with vessels of various kinds and classes and which is simple in construction and efficient in operation; and with this and other objects in view the invention consists in the construction, combination, and arrangement of parts hereinafter described and claimed.

In the drawings forming part of this specification, in which the separate parts of my improvements are designated by the same reference characters in each of the views, Figure 1 is a central vertical section of an apparatus embodying my invention; Fig. 2, a face view of an indicator-wheel which I employ, and Fig. 3 a section on the line 3 3 of Fig. 1.

In the practice of my invention I provide a hollow upright support a , having a flaring base portion a^2 , which may be bolted or otherwise secured to the framework or other part of a vessel in the usual manner, and said support a is provided at the top thereof with upwardly-directed and oppositely-arranged arms a^3 , which are provided at their upper ends with members a^4 , in which is mounted a tubular shaft b , each end of which is provided with a hand-wheel b^2 , by either of which said shaft b may be turned in either direction. The shaft b is provided with a beveled gear-wheel c , which operates in connection with a corresponding beveled gear-wheel c^2 , secured to a tiller-shaft c^3 , which passes downwardly through the support a , and the relative diameters of the wheels c and c^2 are preferably such that the shaft c^3 will be turned one revolution for two revolutions of the shaft b . The shaft c^3 is also provided near its upper end and below the wheel c^2 with a disk d , which is secured thereto and provided with a downwardly-directed flange or rim d^2 , having notches or recess d^3 , and passing verti-

cally and loosely through one of the supports or arms a^3 is a vertically-movable bar e , the lower end of which also passes through the laterally-directed support e^2 , connected with the support a , and said bar e is provided with a collar e^3 , between which and the support e^2 is placed a spiral spring e^4 , which operates normally to force the bar e upwardly, and said bar is provided above the arm or support a^3 with an inwardly-directed lug or projection e^5 , which is adapted to enter the notches or recess d^3 in the flange or rim d^2 of the disk d . The bar e is also provided at its upper end with an antifriction wheel or roller f , and mounted on the shaft b is a sleeve g , and said shaft is provided in the opposite sides thereof with slots b^3 , and passing radially through the sleeve g and through the slots b^3 in the shaft b is a pin g^2 , which is connected with said sleeve and movable in the slots b^3 . Passing longitudinally through the tubular shaft b is a rod g^3 , each end of which is provided with a knob, head, or handle g^4 , and said rod is connected with the pin g^2 , as shown at g^5 , and by moving the rod g^3 longitudinally the sleeve g may be correspondingly moved on the tubular shaft b . The sleeve g is beveled at its inner end, and in the position of the parts shown in Fig. 1 the bar e will not operate to lock the shaft c^3 ; but when said rod g^3 is pulled to the right of the position shown in Fig. 1 the bar e will move upwardly and the lock or projection e^5 will engage the flange or rim d^2 of the disk d , and the shaft c^3 will be locked against rotation. When the sleeve g is moved back to the position shown in Fig. 1, the beveled inner end thereof strikes the antifriction wheel or roller f at the upper end of the bar e and depresses it into the position shown in Fig. 1, and the shaft c^3 will then be free to rotate.

Secured to the head a^4 of the arms a^3 are inwardly-directed and upwardly-inclined supplemental arms or supports h , provided at their inner ends with vertically-arranged bearings or supports h^2 , between which is mounted an indicator-wheel h^3 , the perimeter of which is provided with gear-teeth h^4 , and this wheel is provided on both sides with scale or indicator marks, as shown at f^2 , and secured to the tubular shaft b is a sleeve h^5 , provided with gear-teeth similar to the teeth

h^4 on the indicator-disk h^3 , and said indicator-disk may thus be turned by the shaft b . The supplemental arms or supports h are also provided with pointers h^5 , which operate
 5 in connection with the scale or indicator marks on the disk h^3 , so as to indicate the direction and extent to which said disk has been turned, and in practice the relative size of the sleeve h^5 and the indicator-disk is such
 10 that said indicator-disk will be turned once for two revolutions of the shaft b , this movement of said parts corresponding with the movement of the shaft b and the shaft c^3 . By means of this construction the shaft c^3
 15 may be operated by parties standing at either side of the apparatus or at either end of the shaft b , and said shaft c^3 may be locked against rotation whenever desired, and the indicator-disk h^3 will clearly show at all times the direc-
 20 tion in which said shaft c^3 was last turned.

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

1. In a steering apparatus, an upright support,
 25 a tiller-shaft passing vertically therethrough and provided at its upper end with a beveled gear-wheel, a tubular shaft mounted horizontally thereover and provided with a corresponding beveled gear-wheel of less
 30 diameter than that on the tiller-shaft, a hand-wheel connected with said tubular shaft, a rod passing longitudinally through said tubular shaft and movable therein, a locking-disk connected with the tiller-shaft and devices
 35 operated by said rod and operating in connection with said disk for locking the tiller-shaft against rotation, substantially as shown and described.

2. In a steering apparatus, a support, a
 40 tiller-shaft passing vertically therethrough and provided at its upper end with a beveled gear-wheel, a tubular shaft supported horizontally above said tiller-shaft, and geared in connection therewith, means for turning said
 45 tubular shaft, an indicator-disk supported above said tubular shaft and geared in connection therewith, and means for locking said tiller-shaft against rotation, substantially as shown and described.

3. In a steering apparatus, a support, a
 50 tiller-shaft passing vertically therethrough and provided at its upper end with a beveled gear-wheel, a locking-disk secured to said shaft below said gear-wheel, a tubular shaft
 55 supported horizontally above said tiller-shaft

and provided with a beveled gear-wheel smaller in diameter than that of the tiller-shaft, means for turning said tubular shaft, a slide mounted on said tubular shaft, a rod
 60 passing through said tubular shaft and adapted to move said slide longitudinally thereof, a device operated by said slide and adapted to engage said locking-disk so as to lock the tiller-shaft against rotation, an indicator-disk
 65 supported above the tubular shaft and geared in connection therewith and pointers operating in connection with said indicator-disk, substantially as shown and described.

4. In a steering apparatus, a support, a tiller-shaft passing vertically therethrough
 70 and provided at its upper end with a beveled gear-wheel, a tubular shaft supported horizontally above said beveled gear-wheel and geared in connection therewith, means for rotating said tubular shaft, a slide mounted on
 75 said tubular shaft, a rod passing longitudinally through said tubular shaft and connected with said slide, a locking-disk connected with the tiller-shaft and a vertically-movable spring-supported bar which is adapted in its
 80 upper position to engage said locking-disk and which is adapted to be depressed by said slide, substantially as shown and described.

5. In a steering apparatus, a support, a tiller-shaft passing vertically therethrough
 85 and provided at its upper end with a beveled gear-wheel, a tubular shaft supported horizontally above said beveled gear-wheel and geared in connection therewith, means for rotating said tubular shaft, a slide mounted on
 90 said tubular shaft, a rod passing longitudinally through said tubular shaft and connected with said slide, a locking-disk connected with the tiller-shaft and a vertically-movable spring-supported bar which is adapted in its
 95 upper position to engage said locking-disk and which is adapted to be depressed by said slide, and an indicator-disk mounted above said tubular shaft and geared in connection therewith, substantially as shown and de-
 100 scribed.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 7th day of February, 1902.

DANIEL W. RANTINE.

Witnesses:

F. A. STEWART,
 F. F. TELLER.