

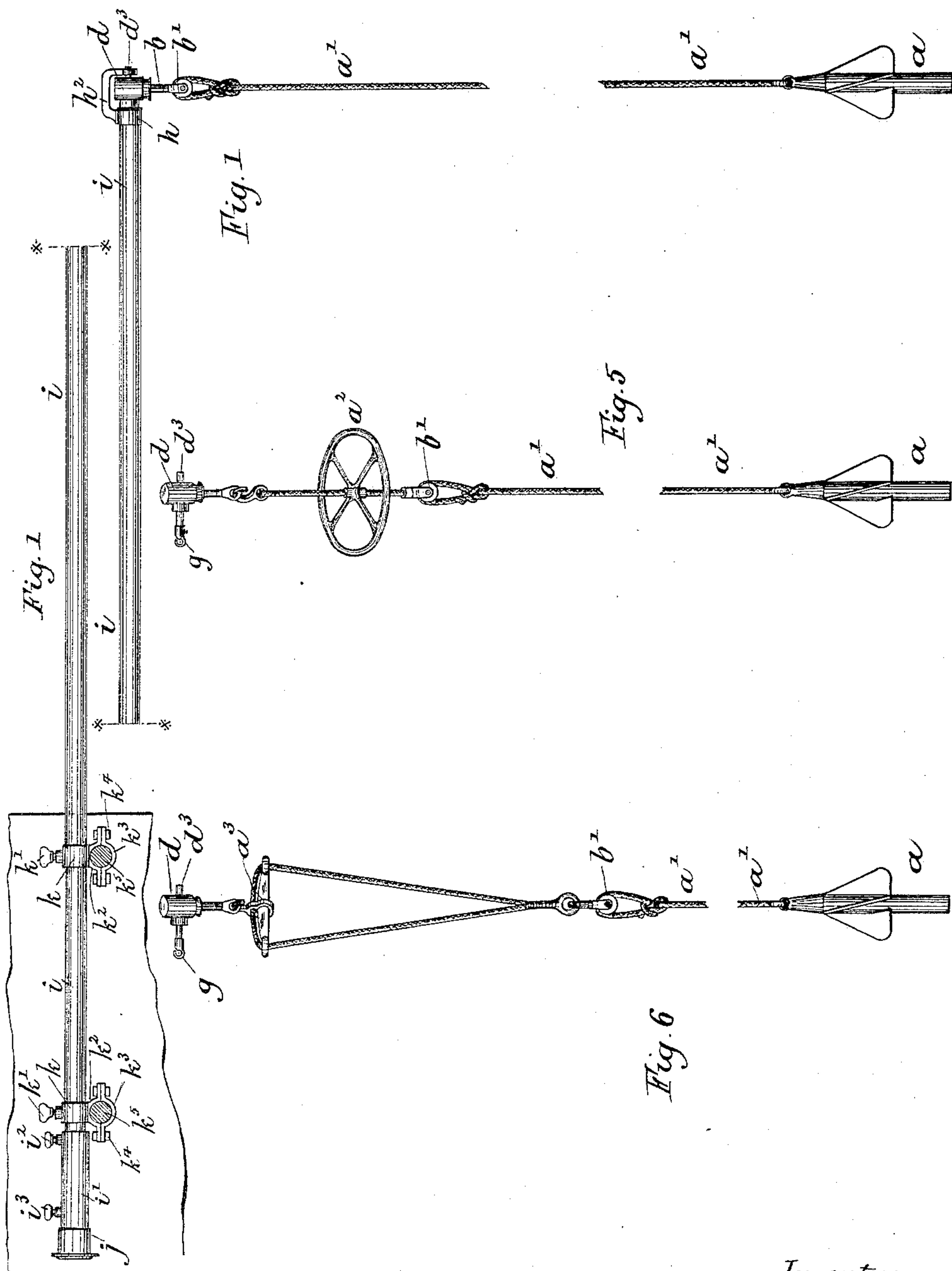
(No Model.)

2 Sheets—Sheet 1.

F. S. PETT.
SHIP'S LOG.

No. 442,257.

Patented Dec. 9, 1890.



Witnesses,
Jonas B. Lilly -
Arthur H. Abell.

Inventor:
Frank Samuel Pett.

By his Attorneys:
John J. Haestad for.

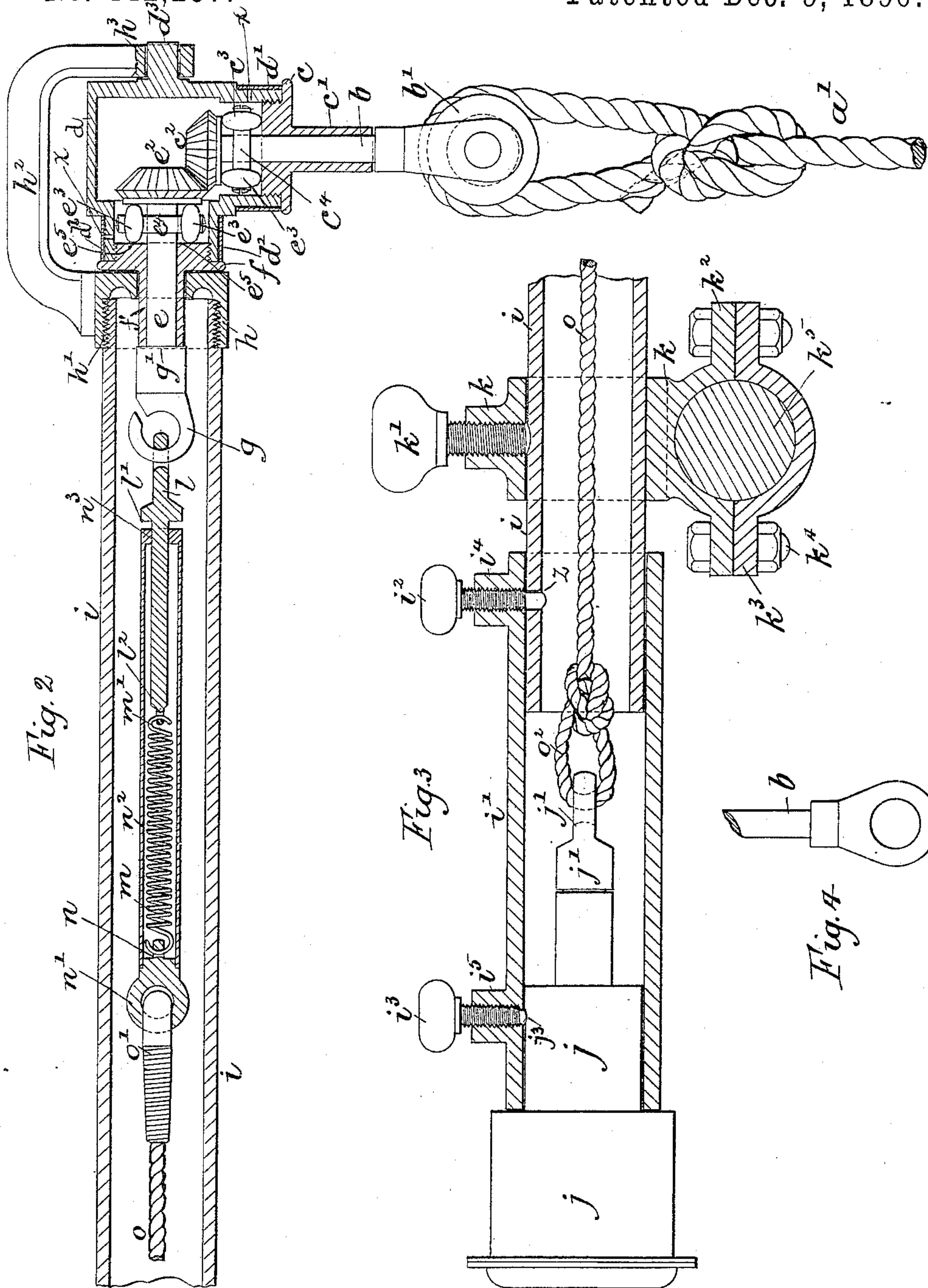
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2 Sheets—Sheet 2.

F. S. PETT.
SHIP'S LOG.

No. 442,257.

Patented Dec. 9, 1890.



Witnesses:
Jonas B. Blum -
Arthur H. Abell.

Inventor:
Frank Samuel Pett.
By *his* Attorneys:
John J. Walsted for

UNITED STATES PATENT OFFICE.

FRANK SAMUEL PETT, OF DOVER, ASSIGNOR TO THOMAS FERDINAND WALKER, OF BIRMINGHAM, ENGLAND.

SHIP'S LOG.

SPECIFICATION forming part of Letters Patent No. 442,257, dated December 9, 1890.

Application filed July 16, 1890. Serial No. 358,933. (No model.)

To all whom it may concern:

Be it known that I, FRANK SAMUEL PETT, master mariner, a subject of the Queen of Great Britain, residing at 113 Snargate Street, Dover, in the county of Kent, England, have invented certain new and useful Improvements Applied to Ship's Logs, of which the following is a specification.

This invention relates to improvements in mechanism applied to ship-logs arranged to register on the bridge or other convenient part of the vessel whose movements are to be recorded or indicated, the parts conveying the motions of the rotator in its rotation in the water being conveyed on board by the aid of a tube or pipe projecting out from the bridge or other suitable part of the vessel a suitable distance at a right angle or at other convenient angle to the side of the ship.

It consists of a box arranged to oscillate in a strong back or support, which may be T-shaped in section and screwed or otherwise secured to the outer end of the pipe support or channel leading to the bridge. Into this box passes a fore-and-aft shaft having fitted to the end outside of the box a ring to make the log-line fast to or a fitting with roller to facilitate hauling the log-line in when required to inspect the fan. The end of the fore-and-aft shaft within the box is in connection by means of suitable gearing (bevel-wheels, worm and worm-wheel, screw, or other gearing) with a projecting shaft to which is attached either a wire, rope, or spindle or other suitable connection with the register or dial fitted to the bridge end of the pipe leading from the oscillating box to the bridge. The circular or twisting motion communicated by the log-line to the fore-and-aft shaft is thus transmitted to the wire, rope, or connection within the pipe leading to the bridge, and the speed of the ship is registered upon the dial at the bridge end of said pipe, the oscillation of my box always keeping the fore-and-aft shaft in line with the log-line which is towing parallel to the side of the ship, but at a suitable distance off. I may fit my bearings in any manner which I may find most suitable; may apply friction-rollers between the bearings to reduce friction, and the ro-

tator and registering-dial may be of any suitable kind.

In the drawings, Figure 1 is a plan view of the apparatus for conveying the motion of a rotator in the water to a registering apparatus affixed on some convenient part of the vessel. Figs. 2 and 3 show parts thereof drawn to a larger scale in order to better indicate the construction and operation of the parts. These parts have been shown broken and portions omitted in order to accommodate the drawings to the sizes of the sheets. Fig. 4 is a detail of an alternative shape of part *b* for attachment of the log-line *a'* instead of to the pulley *b'*. Figs. 5 and 6 show modifications of details.

a, Fig. 1, is the rotator in the water attached by the log-line *a'* to the end *b'* of the spindle *b*. This end is here shown as a pulley *b'*, attached to the spindle *b*. The spindle *b* rotates in a bearing *c'*, Fig. 2, formed in the part *c*, and has a toothed wheel *c²*, mounted on its end within the chamber formed by the box or case *d*. This toothed wheel on its under side rests on anti-friction wheels *c³*, mounted on axes carried by the ring or sleeve *c⁴*, which rotates around the spindle *b*. These wheels *c³* also bear on the upper side of the part *c*. The toothed wheel *c²* engages the teeth of a corresponding wheel *e²*, mounted on the end of the spindle *e*, which rotates in the bearing *f'* of the part *f*. *d'* *d²* are annular collars, the collar *d'* sliding on the neck of the box *d* within the projection *c* and the annular collar *d²* similarly sliding in the neck of the box *d* within the projection *f*. These collars are capable of rotation on their respective necks, so as, when required, to be brought coincident with holes *x* formed therein and in the collars for the introduction of oil within the said box *d*, in which the parts *c²* *e²* and their anti-friction rollers rotate. When in use, the holes in the collar and in the neck of the box are brought so as not to be coincident and so as to inclose the oil therein. The rear surface of the wheel *e²* bears on the anti-friction wheels *e³*, mounted on pins carried by the collar *e⁴*, rotating around the spindle *e*. These wheels *e³* also bear against the surface *e⁵* of the part *f*. On

the other end of the spindle e is secured the hook g , the shoulder g' of which acts with the wheel e^2 to keep the spindle in place. h is a screwed socket, which is attached by means of its screw-thread h' to the arm i projecting from the vessel. This socket h forms a support for the strong back or bent arm h^2 , which is preferably of T section for the sake of greater rigidity. In the bent end of the part h^2 is formed a hole h^3 , which forms a bearing for the projection d^3 from the box d , and this projection d^3 with the part f' rotating in the socket h forms the axis of rotation of the said box and parts attached thereto. The arm i , Figs. 1, 2, and 3, which is here shown as a hollow cylinder or tube, (but which may be of angle-iron, trough, or other suitable cross-section,) is supported preferably in bearings in which it can be slid and adjusted by suitable holding parts. I have shown these holding parts as collars k k , having projections tapped to form sockets for thumb-screws k' k' , which pass therethrough and press against to hold the hollow bar i . These collars k are formed with sockets in two parts k^2 k^3 , adapted to embrace upright stanchions or supports k^5 from the part of the vessel to which the indications are to be conveyed. These half-sockets are held together on the stanchions by bolts and nuts k^4 k^4 , or the half-sockets k^2 k^2 may be lashed to the stanchions with ropes, and the separate sockets k^3 k^3 dispensed with. On the inner end of the hollow rod i , Fig. 3, is mounted a sleeve or part tube i' , having projections i^4 i^5 , tapped to receive thumb-screws i^2 i^3 , the thumb-screw i^2 passing through the projection i^4 and into the hole z or opening formed in the tube i , locking the short tube i' thereto. The thumb-screw i^3 passes through the projection i^5 and into a notch or recess j^3 , formed in the part j , of a suitable inboard register, which may be of the kind known as "Walker's cherub log-register," and which is the subject-matter of Letters Patent of the United States granted to Thomas Ferdinand Walker, No. 238,187, dated February 22, 1881; but it may be of any other suitable description. The rotations of the rotator a are conveyed to the log-line a' , and by it to the end b' of the spindle b , which causes the rotation of the toothed wheel c^2 , whose motion again is conveyed to the corresponding toothed wheel e^2 , thence to the spindle e , and by it to the hook g , connected to the loop l , Fig. 2, formed with a shoulder l' and extension l^2 of square section. The motion thus imparted to the part l is, by the squared extension l^2 thereof, fitting the correspondingly-squared part n^3 , conveyed to the tube n^2 , by it to the loop n' , thence to the cord o , and by that cord o to the rotative part of the register apparatus, and thereby to the registering and indicating wheels and parts. The inner end of the extension l^2 is formed as a loop, into which is hooked one end m' of the spring m , the other end of the spring be-

ing engaged in the loop n of the eye-piece n' , which is formed with tubular extension n^2 and square bearing n^3 for the extension l^2 of the part l to slide to and fro in, as the line o , connected thereto by the loop o' , may expand or contract by influence of moisture or otherwise. The other end of the cord or line o is tied or connected to the loop j' , Fig. 3, formed on the end of the spindle operating the register in the case j ; but as this register itself forms no part of the invention I have not thought it necessary to show more than the general outline of such an apparatus.

Instead of the wheel b' , Fig. 2, an eye such as shown in Fig. 4 may be employed to receive a connection from the cord a' .

When the rotator a is not desired to be in the water, the bar i may be drawn with its outer end close into the vessel by loosening the thumb-screws k' k' and sliding the bar in the collars k k . The loop of the line a' may then be unfastened and the loose end drawn in over the pulley b' , drawing the rotator up to that pulley to be there retained or to be detached from the log-line, as desired. By means of this sliding action of the bar or tube i the box d can at any time be drawn in for the purpose of oiling the spindles b and e and their bearings and anti-friction wheels.

Fig. 5 shows a modification of a detail for use when it is found desirable to employ a fly-wheel a^2 or other regulator of uniformity of speed of rotation for the purpose of steadying the rotation of the line a' , attaching the rotator a to the apparatus, the pulley b' being attached to the said fly-wheel connector or regulator at the point where the line is usually attached.

Fig. 6 shows another modification, in which the regulator takes the form of a bar a^3 instead of a wheel a^2 , and the connector is looped. As the use of these regulators, whether fly-wheel or otherwise, is well understood in practice, I have not thought it necessary to describe the application of the same.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a ship's-log apparatus, the combination, with the oscillatory box d , of the fore-and-aft spindle or shaft and its gear and the spindle e and its gear for conveying the rotations of the rotator and line to the registering apparatus, and whereby the said box and its contained parts may be capable of swinging at the end of a bar or extension from the side of a vessel and of adjusting themselves, substantially as and for the purpose hereinbefore set forth.

2. In ship's-log apparatus, the combination, with an oscillatory box and with gearing contained therein for conveying the rotations of the rotator to the registering apparatus inboard, of a longitudinally-adjustable supporting pipe or channel projecting from a ship or

vessel, as set forth, and whereby the said support may be drawn inboard and the rotator hauled in, substantially as set forth.

3. The combination, with the rotator and the log-line of a rotating regulator, as described, of ship's-log apparatus, an oscillatory box supporting spindles, and gears arranged at right angles to each other, as shown, a hollow bar adapted to project from the side of the vessel and having bearings for supporting said box and devices, substantially as de-

scribed, for supporting and regulating the position of the said box, all substantially as and for the purpose hereinbefore set forth.

In testimony whereof I, the said FRANK SAMUEL PETT, have hereunto set my hand this 1st day of July, 1890.

FRANK SAMUEL PETT.

Witnesses:

ALFRED GEORGE BROOKES,
JOHN GOODE HARE.