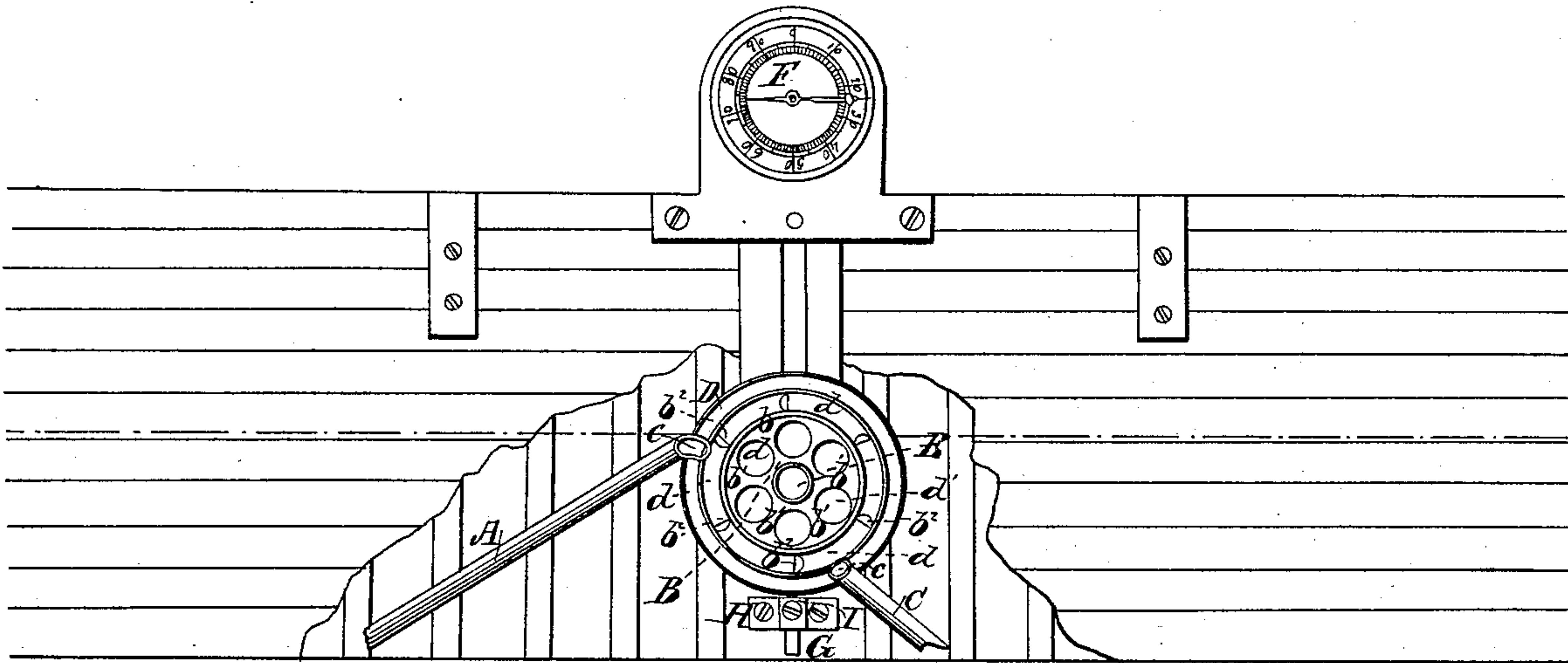


J. C. WALKER.  
Ship's Viameter.

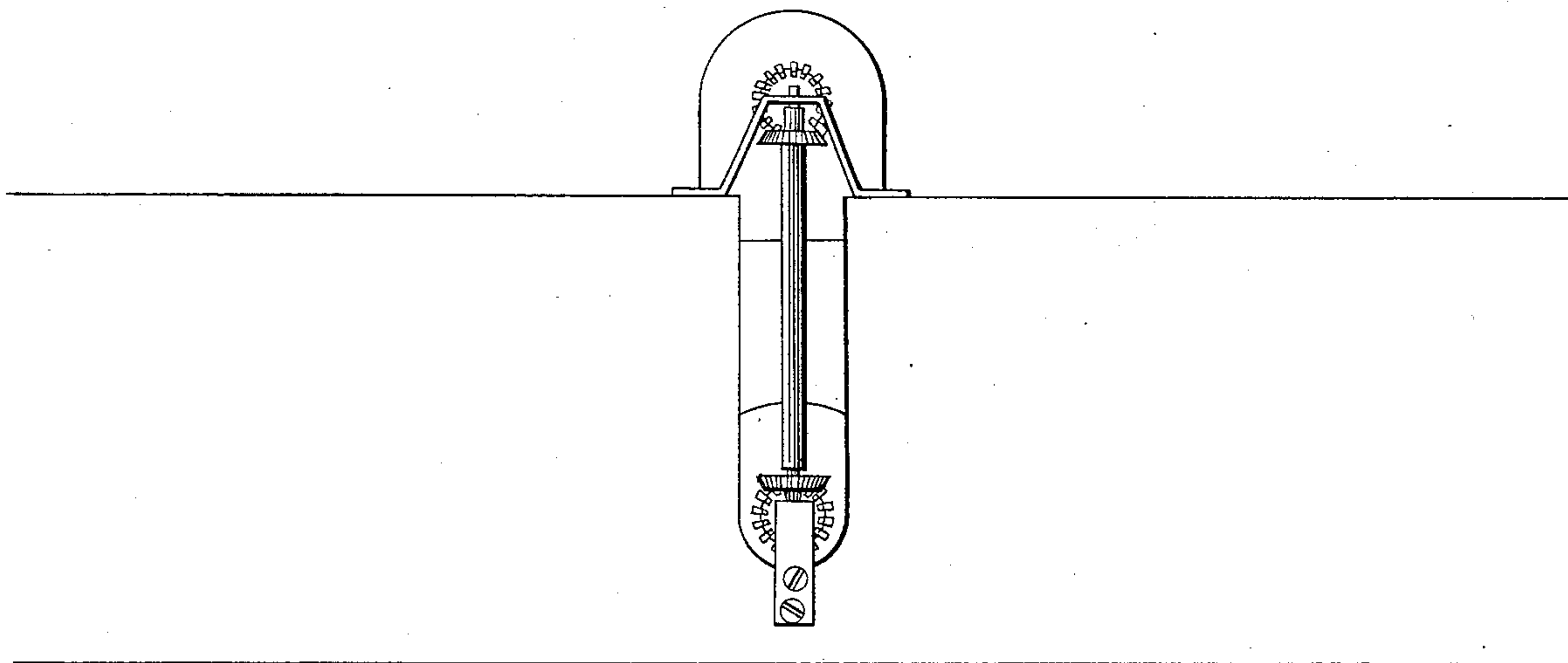
No. 68,265.

Patented Aug. 27, 1867.

*Fig: 1.*



*Fig: 2.*



*Witnesses:*

*Chas. A. Pettit*  
*John W. Remon*

*Inventor:*

*James C. Walker*  
*By Munn & Co.*  
*Attorneys*

# United States Patent Office.

JAMES C. WALKER, OF WACO VILLAGE, TEXAS.

*Letters Patent No. 68,265, dated August 27, 1867.*

## IMPROVED SHIP-VIAMETER.

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, JAMES C. WALKER, of Waco Village, in the county of McLennan, and State of Texas, have invented a new and improved Ship Viameter; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a vertical elevation of my invention, showing the apparatus in position in the wall of a ship, a portion of the ceiling and the cover of the enclosing box being removed, to exhibit more clearly its construction and arrangement.

Figure 2 is a rear elevation of my invention.

Similar letters of reference indicate corresponding parts in the two figures.

In this invention a tube is attached to the hull of the vessel, at or below the water line, through which a current of water is forced by the motion of the ship. At a convenient point in the tube a wheel is placed so as to be rotated by the current, and an indicator in some part of the ship connected with the axle of the wheel records the number of revolutions of the wheel, and by consequence the distance traversed by the ship in any given time.

In order that others skilled in the art to which my invention appertains may be enabled to make and use the same, I will proceed to describe it in detail.

In the drawings, A represents that part of the tube which extends forward of the water-wheel to receive the current and conduct it to the wheel; B is the wheel, and C the rear or discharging portion of the tube. I make the tube C slightly larger than the forward part A, in order to compensate for the loss of velocity in the current by friction, and to discharge all the water freely from the apparatus. The wheel B is confined in a circular box, D, suitably fastened to the vessel, and runs on a shaft, E, one end of which projects through the box, and is connected by a gear-wheel arrangement with the registering index and dial F. I do not intend to confine myself to any particular method of communicating motion from the shaft E to the index F, but wish to be free to use any combination of gear-wheels, drums, and belts, or other commonly-used device, for communicating motion from one shaft to another. The wheel is formed with a rim, *b*, closely fitting between the sides of the box D, and dividing it into two compartments, one an annular space, *d*, around its periphery, for the passage of the water from the pipe A to the pipe C, and the other a circular water-tight compartment, *d'*, filled with air, at the centre of the box, around the shaft E. The shaft E is connected with the revolving rim *b* by means of spokes *b<sup>1</sup> b<sup>1</sup>*. Buckets *b<sup>2</sup> b<sup>2</sup>*, attached to the rim *b*, and closely fitting and working as nearly water-tight as possible in the annular space *d*, are forced around the annular space by the power of the current passing through the tubes from *a* to *c*, and thus impart the necessary revolution to the wheel B, and from it, by the means already described, to the index F. The index and dial may be located in any part of the ship, where they can be connected by any suitable means with the wheel above described. They may thus be placed in the cabin, the binnacle, the engine-room, or any other point where they will be most convenient for reference. The pinion or other device attached to the shaft E, by which its motion is communicated to the index, may be protected, if desired, by being enclosed in an additional box. It will be better if the wheel be kept as near the water level as possible, and I have accordingly attached its enclosing box to the vessel by an adjusting arrangement consisting of the arm G passing vertically through an aperture in a plate, H, fixed to the hull, and confined at any desired point by the set-screw I. By this means the vertical position of the box D and its connected apparatus can be regulated at pleasure. The pipes A C may extend horizontally along the vessel, or may extend in the direction shown in the drawings. They may be provided with strainers, if necessary, to prevent the entrance of anything likely to injure the working of the apparatus. The apparatus may be attached to the inside or outside of the hull, or may be inserted in the body of the ship's frame or wall. A spigot or waste pipe may be inserted into the circular box or air-chamber *d'* behind the spokes of the wheel B, if desired, by means of which any water that might chance to leak from the annular tube *d* into the compartment *d'* could escape so as not to impede the motion of the wheel. It is intended that the compartment *d'* shall be as nearly water-tight as it can be made without causing too much friction of the rim *b* against the sides of the box.

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

The combination in a viameter of the pipes A and C, wheel B, circular box or sheath D, and indicating apparatus, substantially as and for the purpose described.

JAS. C. WALKER.

Witnesses:

CHARLES A. PETTIT,

SOLOMON C. KEMON.