No. 728,553. PATENTED MAY 19, 1903.

J. C. DOBBIE.

NAVIGATIONAL SOUNDING APPARATUS

APPLICATION FILED JULY 29, 1899.

NO MODEL.

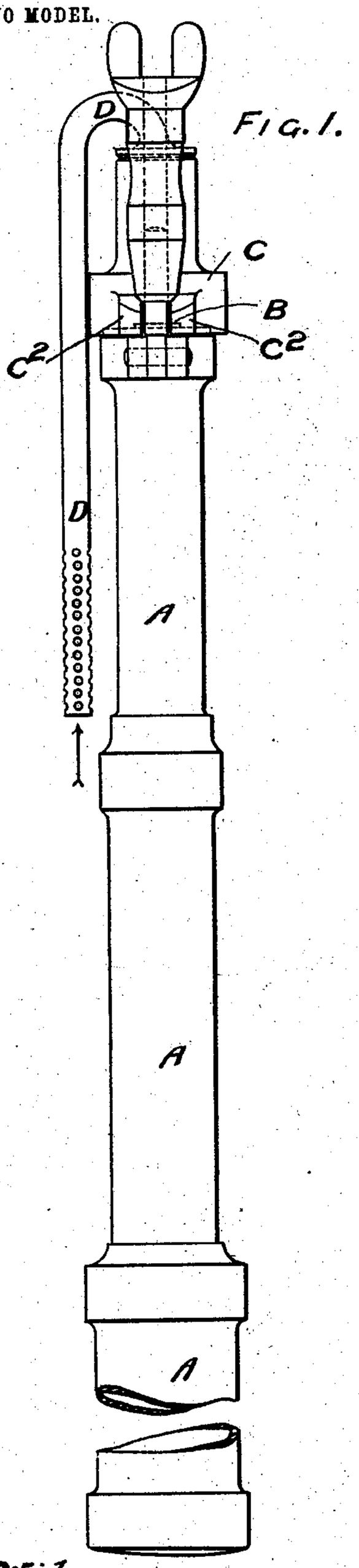

FIG. 1.

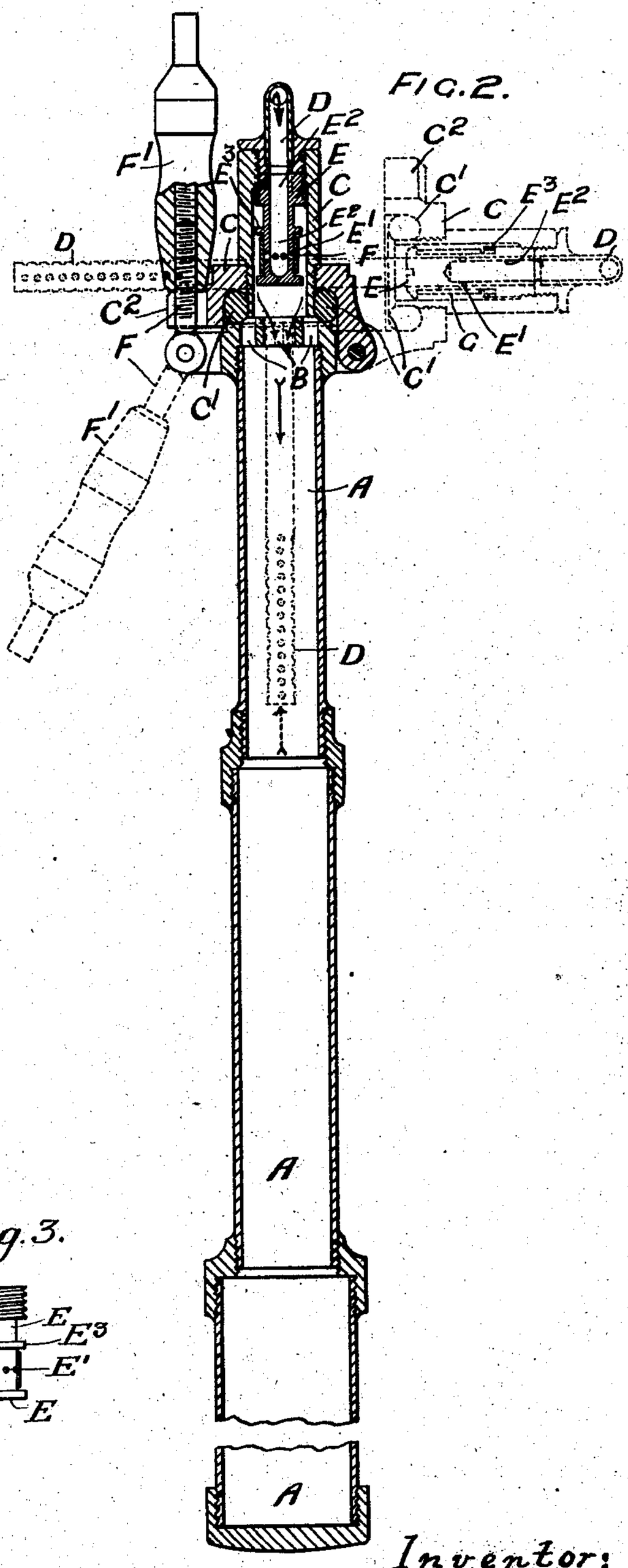

FIG. 2.

Fig. 3.

Witnesses:
Frank M Archer
A. Witt.

Inventor:
John Clark Dobbie.
By Wade & Co.
Attorney.

No. 728,553. Patented May 19, 1903.

UNITED STATES PATENT OFFICE.

JOHN CLARK DOBBIE, OF GLASGOW, SCOTLAND.

NAVIGATIONAL SOUNDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 728,553, dated May 19, 1903.

Application filed July 29, 1899. Serial No. 725,551. (No model.)

To all whom it may concern:

Be it known that I, JOHN CLARK DOBBIE, a citizen of the United Kingdom of Great Britain and Ireland, and a resident of 45 Clyde Place, Glasgow, Scotland, have invented new and useful Improvements in Navigational Sounding Apparatus, (for which application for patent has been made in Great Britain January 27, 1899, No. 1,915,) of which the following is a specification.

This invention relates to navigational sounding apparatus of the kind in which the sounding or depth of the sea is measured by the admission of water to a tubular casing against the compression of the air contained within it in proportion to the depth of immersion of said casing; and it has for its object mainly the provision of devices by means of which escape of the water entering the casing is prevented, while simplifying, rendering more accurate, and otherwise better adapting the apparatus for taking soundings in deep water.

The invention is illustrated by the accompanying drawings.

Figure 1 is an elevation; Fig. 2, a vertical section at right angles to Fig. 1, and Fig. 3 a sectional detail of one form of valve employed in the apparatus.

The improved apparatus is composed of a tubular casing A, either of uniform bore or of larger diameter at its lower end, which is closed, while its upper end is formed with an orifice B or orifices covered or inclosed by a removable fluid-tight cap or cover C. Water is admitted into the casing A through the small tube D, which may be bent to U shape or otherwise and entered, preferably, through the cap or cover C, as shown, the object of this arrangement being that while the water under pressure due to the depth of immersion of the instrument may freely enter the sounding tube or casing A it may not escape or be forced out by the air-pressure when the apparatus is drawn up out of the water.

The form of non-return valve E preferably used in conjunction with the apparatus and which may be formed on the stem of the inlet-tube or as a separate piece is constructed as shown at Figs. 2 and 3 and is arranged at the end of the inlet-tube D. This valve is closed at one end, but has a series of holes E′ (shown particularly at Fig. 3) communicating with its central bore E^2, through which the water passes from the inlet-tube D. The water then passes outward from the interior E^2 of the non-return valve E, through the perforations E′, thence under a sleeve G, of flexible material—such as rubber, oiled silk, or the like—and outward between the sleeve and a flange E^3, intended to hold the rubber in place, the pressure of the water upon the rubber sleeve effectually preventing the return of the former through the holes E′.

The cap or cover C is preferably hinged or jointed to the body of the casing and is provided with a rubber or like face or is fitted with an annular ring C′, of rubber, of circular cross-section to render the cap or cover water-tight and prevent admission of water otherwise than by the inlet-tube D when the cap C is fastened down, which is conveniently effected by means of a screw-bolt F, preferably jointed to the casing and the nut of which is adapted to engage in a slotted lug C^2 on the cover C. The orifice in the casing may be of tubular, triangular, semicircular, or like form, through which the scale for measuring the depth of water in the casing is inserted. This scale may consist of a flat or channeled bar or strip, of metal, vulcanite, or other material, graduated upon one face and which is inserted through the orifice so that the scale upon the face may not make contact with the sides of the orifice and be wetted or otherwise marked.

Having now described the invention, what I claim, and desire to secure by Letters Patent, is—

1. Navigational sounding apparatus composed of a tubular casing closed at one end by a removable fluid-tight cover and furnished with an inlet-tube having at its inner end a non-return valve formed by a rubber sleeve fitted over orifices in said tube, substantially as described and for the purpose set forth.

2. In navigational sounding apparatus the combination with the water-inlet of a non-re-

turn valve consisting of a tubular stem closed at one end and having a series of holes communicating with its central bore, these holes being covered by a rubber sleeve between which and the outer surface of the stem the water passes to the sounder-casing, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

JOHN CLARK DOBBIE.

Witnesses:
WALLACE FAIRWEATHER,
JNO. ARMSTRONG, Jr.