

No. 875,140.

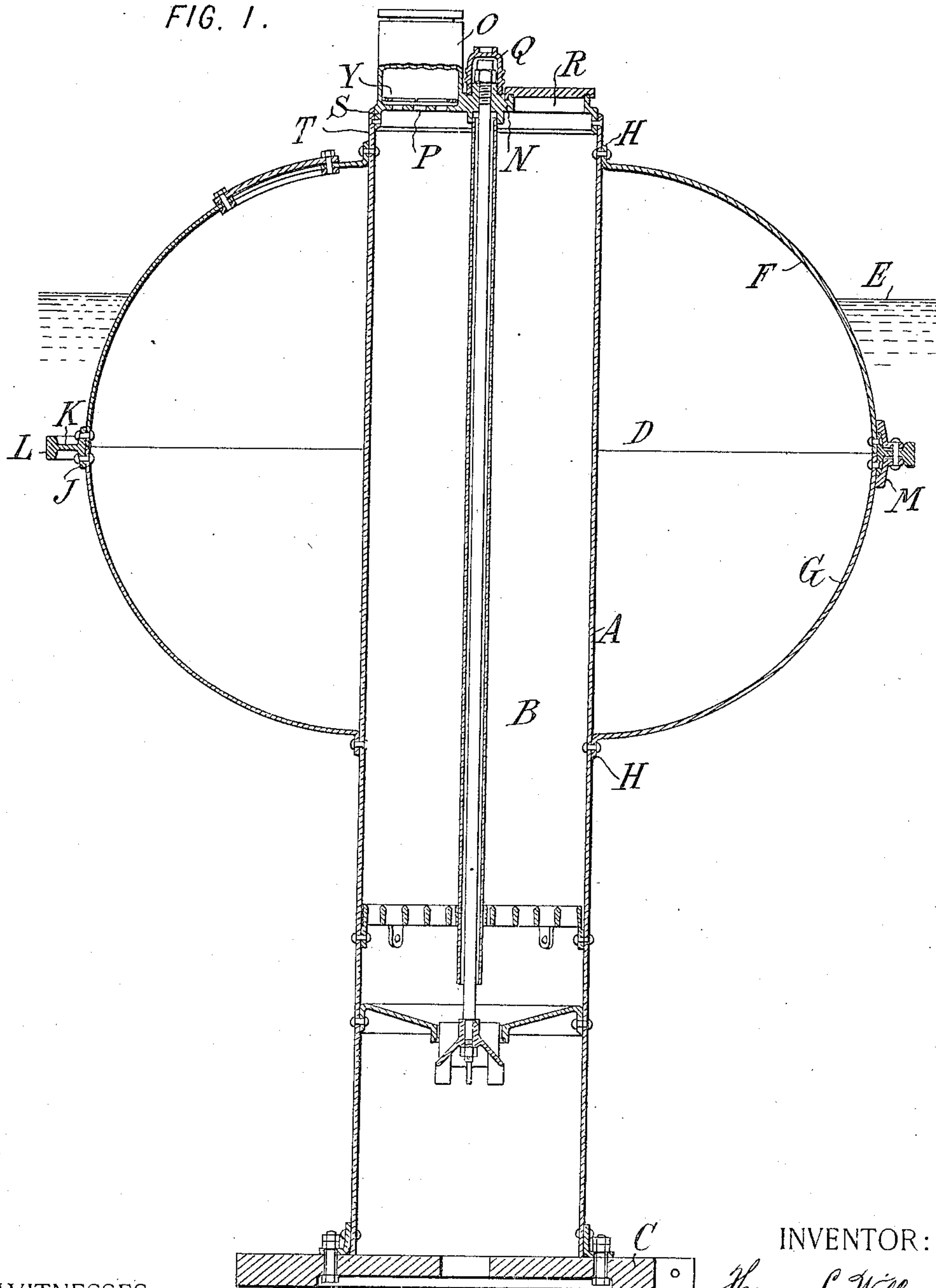
PATENTED DEC. 31, 1907.

T. L. WILLSON.
BUOY.

APPLICATION FILED AUG. 5, 1905. RENEWED NOV. 16, 1907.

2 SHEETS—SHEET 1.

FIG. 1.



WITNESSES:

Fred White
Rene Maune

INVENTOR:

Thomas L. Willson,

By Attorneys,

Arthur C. Fraser & Co

No. 875,140.

PATENTED DEC. 31, 1907.

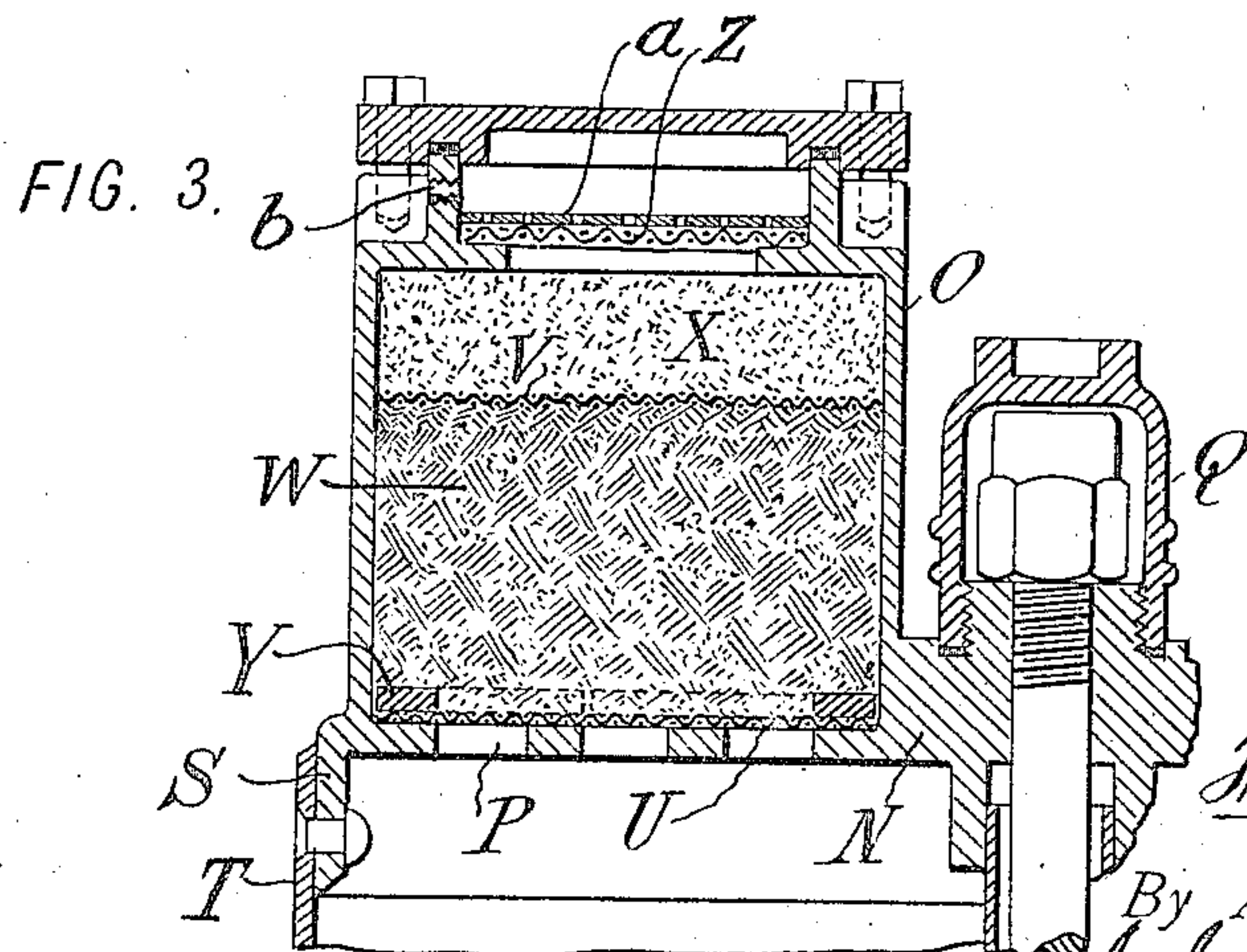
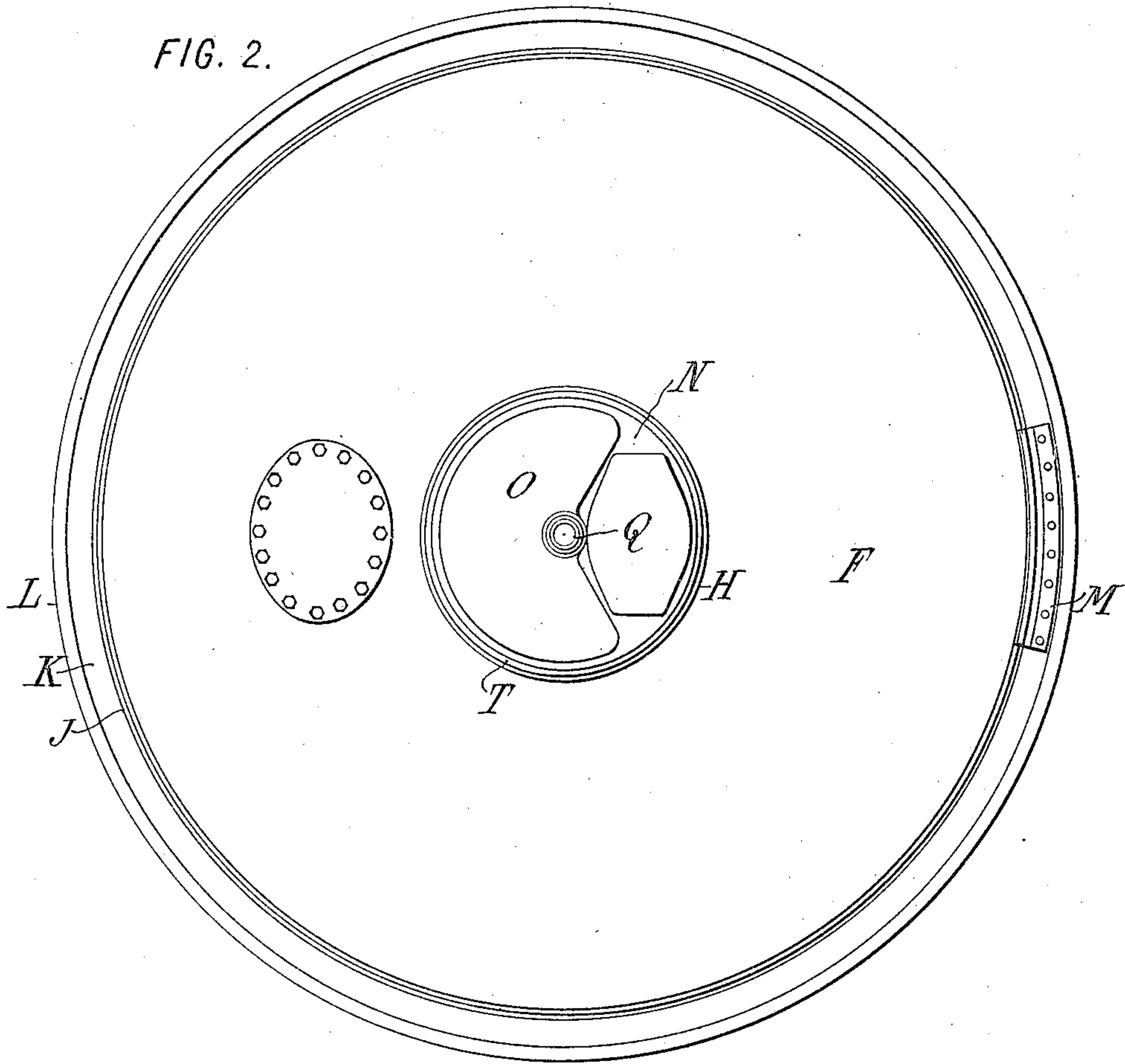
T. L. WILLSON.

BUOY.

APPLICATION FILED AUG. 5, 1905. RENEWED NOV. 16, 1907.

2 SHEETS—SHEET 2.

FIG. 2.



WITNESSES:
Adel White
Rene' Maine

INVENTOR:

Thomas L. Willson,

By Attorneys,

Arthur C. Thayer & Co.

UNITED STATES PATENT OFFICE.

THOMAS L. WILLSON, OF OTTAWA, ONTARIO, CANADA, ASSIGNOR, BY MESNE ASSIGNMENTS,
TO UNITED STATES MARINE SIGNAL COMPANY, OF JERSEY CITY, NEW JERSEY, A
CORPORATION OF NEW JERSEY.

BUOY.

No. 875,140.

Specification of Letters Patent.

Patented Dec. 31, 1907.

Application filed August 5, 1905, Serial No. 272,903. Renewed November 16, 1907. Serial No. 402,532.

To all whom it may concern:

Be it known that I, THOMAS L. WILLSON, a subject of the King of Great Britain, residing at Ottawa, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Buoys, of which the following is a specification.

In my Patent No. 791,119, dated May 30, 1905, I have described an automatic gas buoy carrying an acetylene generator.

The present application relates to an improved structure of such a buoy, and also certain improvements applicable to buoys generally.

The accompanying drawings illustrate an embodiment of the invention.

Figure 1 is a longitudinal section omitting the superstructure carrying the lamp; Fig. 2 is a plan of Fig. 1; Fig. 3 is an enlarged sectional view of a portion of the head of the generating chamber.

Referring to the embodiment of the invention illustrated, the vertical tubular central portion A of the structure incloses a carbide chamber B and extends considerably below said chamber, and carries at its lower end a weight C. For holding up the upper end of the buoy a flotation-chamber or air-chamber D is provided surrounding the upper end of the tube A. The superstructure is mounted in any suitable manner on the top of the flotation-chamber or the central tube. The whole structure is designed to stand at about the height shown as compared with the water-level E, though it will vary somewhat as the supply of carbide is greater or less.

The flotation-chamber D is formed of an upper plate F and a lower plate G. These plates are stamped or drawn out of heavy sheet steel into the dished or hemispheroidal form indicated, each having a central opening of the same size as the central tube A and surrounded by a flange H, by means of which they are riveted to the central tube.

The horizontal edges of the plates F and G are faced to make a good joint, and are held together by the riveting of the plates to the base J of a stiffener and fender which runs entirely around the flotation-chamber. This fender is preferably formed of a railroad rail with a web K to give it depth, and a head L to receive directly the blows to which the buoy is subjected. Preferably a single rail is used with one joint, which may be made

by means of ordinary railway fish plates M. When a floating object is encountered, it strikes the head of the rail, and the pressure is dissipated throughout the entire stiff ring which the rail constitutes, and is transmitted over a considerable area of the flotation chamber, and thus avoids injury to the latter. There is also provided a purifier, preferably combined with a drier, whereby the gas is purified before reaching the lamp, thus obtaining a purer gas and a better light than has been heretofore possible in buoys. The purifier is carried in the present case directly on the top of the generating-chamber, thus economizing space and avoiding the necessity for introducing pipes between the generating chamber and the purifier.

Preferably the purifier projects above the top of the chamber, and is arranged to shed water freely. For example the head N of the central tube may carry a casing O integral with the head or fastened directly thereupon, the head being provided with apertures P through which the gas passes directly into the purifier. In plan the casing O is preferably a portion of the annulus extending around the cap Q of the central valve rod, so as to occupy all the space which is not required for the opening R. In order to shed the water as much as possible, the head N is provided with a flange S fitting within the beveled edge T of the tube and riveted thereto.

The chamber O is provided on the inside with two layers of felt U and V respectively, a body of chromic acid W being provided in the lower compartment, and a body of sulfuric acid X in the upper compartment; the acid in each case being carried by a body of kieselguhr or other suitable medium through which the gas passes.

The felt U is held down on the floor of the casing by means of a ring Y which is made in sections to permit its introduction through the opening at the upper end of the casing. The purified gas passes through a layer of felt Z and a screen *a* into the upper end of the casing, and is drawn off through an opening *b* to which the gas-pipe is attached. The cover of the purifier may be withdrawn without interfering with the connections.

Although I have described in detail the construction of the buoy and the composition of the materials used in the cleaner and

purifier, I do not in the present application claim either of these except in combination with the cleaner and purifier, the construction of the buoy independent of the cleaner
5 and purifier being claimed in my application No. 291,238, filed December 11, 1905.

Though I have described with great particularity of detail a certain specific embodiment of my invention, yet it is not to be
10 understood therefrom that the invention is limited to the particular embodiment disclosed. Various modifications thereof in detail, and in the arrangement and combination of the parts, may be made by those
15 skilled in the art, without departure from the invention.

What I claim is:—

1. An acetylene buoy having a gas chamber, and a purifier projecting above the top of
20 said chamber, the gas chamber being provided with a head N having integrally formed therewith a casing O, and having a series of apertures P in the portion of said head which constitutes the base of said casing.
25 ing.

2. An acetylene buoy having a gas chamber, and a purifier projecting above the top of said chamber, the gas chamber being provided with a head N having integrally
30 formed therewith a casing O, and having a series of apertures P in the portion of said head which constitutes the base of the casing, the said head having also a downward flange S closely fitting the upper end of the generating chamber.
35 ing chamber.

3. A gas buoy comprising a vertical, tubular, central gas-containing portion, two

hemi-spheroidal plates united to each other along a horizontal plane and each connected
40 at its center to said vertical portion and braced thereby, a suitable bottom for said vertical tube and a top closing the same and containing a purifying material through
45 which the gas passes previous to burning, as and for the purpose specified.

4. A buoy comprising in combination a central vertical tubular gas-containing portion, two hemi-spheroidal plates circumferentially united together and each connected
50 at its center to said vertical portion and braced thereby, a weighted bottom for said vertical portion, and a head adapted to contain purifying material secured to said vertical portion, as and for the purpose specified.
55

5. A buoy comprising in combination a central, vertical tubular gas-containing portion, two hemi-spheroidal plates circumferentially united to each other and each connected
60 at its center to said vertical portion and braced thereby, a weighted bottom for said vertical portion, a head for said vertical portion, and a purifier-containing box formed integral with said head and through
65 which the gas is led, as and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

THOMAS L. WILLSON.

Witnesses:

DOMINGO A. USINA,
FRED WHITE.