

No. 859,372.

PATENTED JULY 9, 1907.

G. DALÉN.
SIGNAL LIGHT APPARATUS.
APPLICATION FILED FEB. 15, 1906.

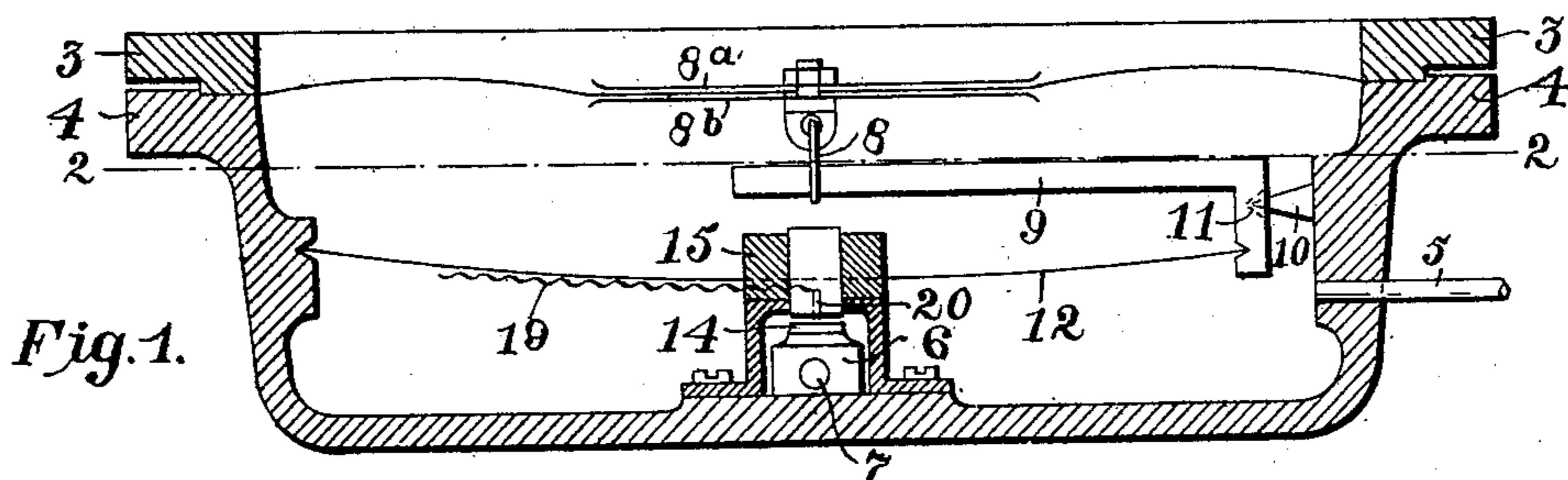


Fig. 1.

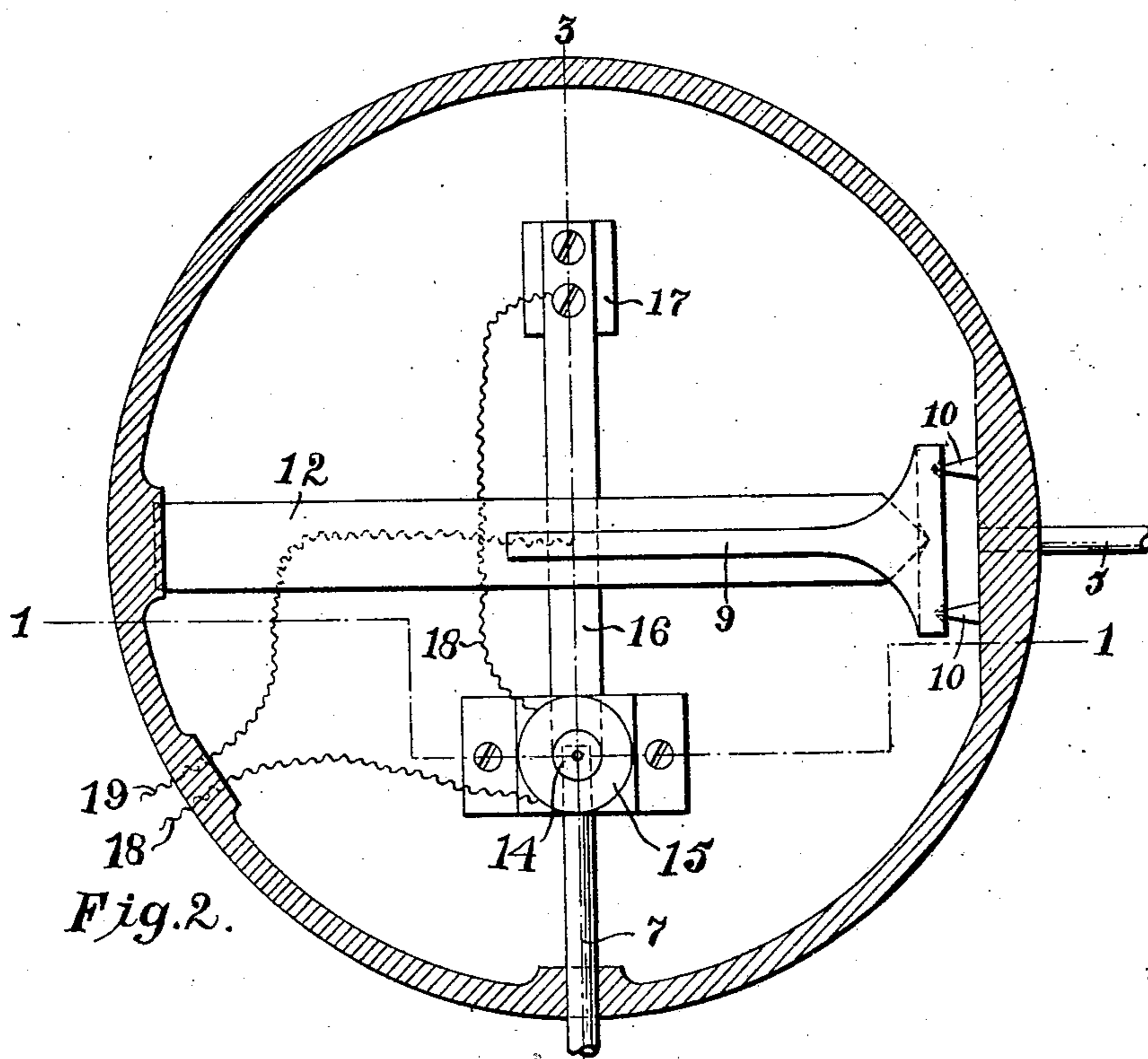


Fig. 2.

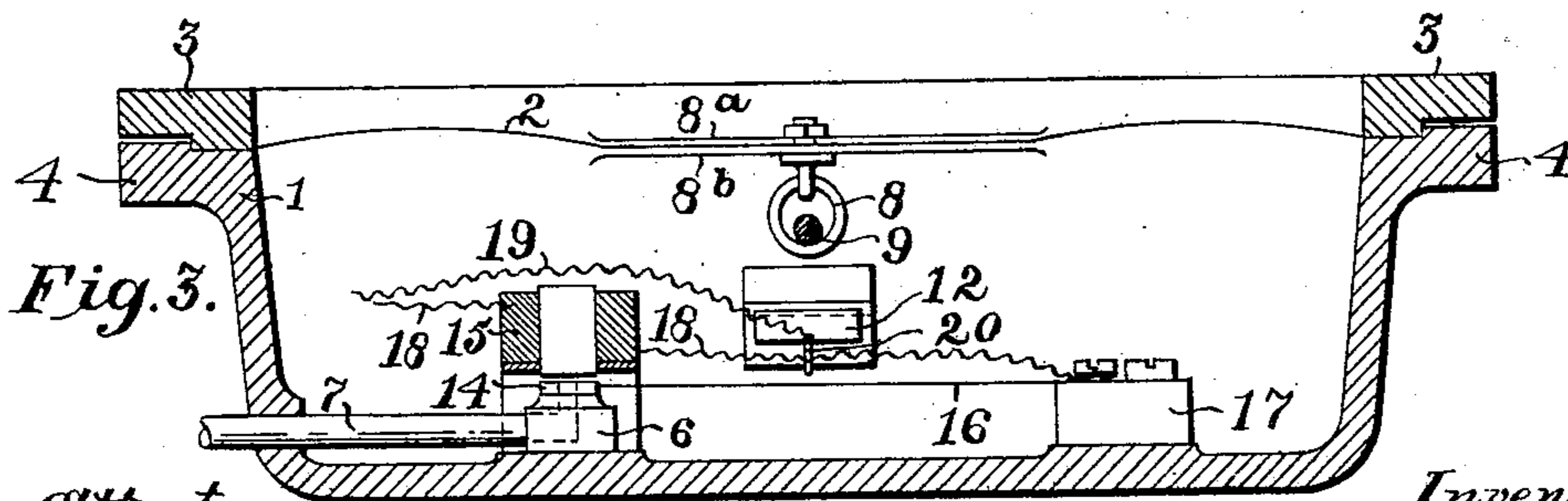


Fig. 3.

Attest:

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UNITED STATES PATENT OFFICE.

GUSTAF DALÉN, OF STOCKHOLM, SWEDEN, ASSIGNOR TO AKTIEBOLAGET GASACCUMULATOR, OF STOCKHOLM, SWEDEN, A CORPORATION OF SWEDEN.

SIGNAL-LIGHT APPARATUS.

No. 859,372.

Specification of Letters Patent.

Patented July 9, 1907.

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To all whom it may concern:

Be it known that I, GUSTAF DALÉN, a subject of the King of Sweden, residing at Stockholm, Sweden, have invented new and useful Improvements in Signal-Light Apparatus, of which the following is a specification.

The present invention relates to improvements in light buoys and other signal-light-apparatus, designed to send out a flash or light signal at certain intervals by alternately lighting and extinguishing a gas flame, and is especially designed for employment in connection with light buoys in which acetylene is used as the lighting material. In order to obtain a buoy, which without having too large dimensions, is able to burn the whole sailing-year without control, it is important that the flash or period time during which the flame is burning between the dark periods be very short.

The object of the present invention therefore is to secure a flash of very short duration, say a fraction of a second, by means of an apparatus of extreme simplicity and cheapness great durability and efficiency.

The invention comprises the features of construction hereinafter described and particularly pointed out in the appended claims.

An embodiment of the invention is shown in the accompanying drawings in which:—

Figure 1 is a vertical section on line 1—1 of Fig. 2. Fig. 2 is a horizontal section on line 2—2 of Fig. 1 and Fig. 3 is a vertical section on line 3—3 of Fig. 2.

In this drawing the numeral 1 indicates a casing, which is covered by a diaphragm 2 clamped between a ring 3 and a flange 4 of the casing 1, a supply pipe or conduit leads to this casing from an acetylene generator of any suitable construction (not shown on the drawing) and a delivery pipe 7, connected with the valve body 6, leads to the burner (also not shown). The diaphragm 2 is connected by means of a link 8 and plates 8^a and 8^b with a lever 9, the fulcrum of which is formed by knife edges 10, fixed to the casing 1. Between a projection 11 of the lever 9 and the casing a spring 12 is inserted its ends being seated in notches in the parts. The valve 14 is formed on or secured to the end of a spring 16 fixed by its opposite end to a stud 17. The spring 16 tends to hold the valve 14 against the valve seat of the valve body 6. An electro-magnet 15 is located above the valve 14. From the one pole of a source of electricity the wire 18 leads to the electro-magnet 15 and from this latter to the spring 16 or to a

contact plate fixed to the spring 16. The other wire 19 leads to the leaf spring 12 and to a contact plate 20 fixed opposite to the spring 16.

The operation of the parts is as follows. Through pipe 5 gas having a higher pressure than that, which is prevailing in the burner is supplied. The casing thus is filled with gas, the pressure of which is continually increasing while the outlet is closed. The strength of the spring 12 is adjusted so that the spring is balanced by the pressure on the diaphragm when the pressure in the casing is that required in the burner. When this pressure is exceeded owing to the continually flowing in of gas through pipe 5, the diaphragm moves upwards, compressing the spring 12, so that the contact plate 20 comes into contact with the spring 16 or its contact plate. The circuit is thus closed through the electro-magnet 15, which attracts the valve 14 against the tension of the spring 16. The valve is thus suddenly opened, so that gas flows out from the casing to the burner through the pipe 7. During said outflow of gas the diaphragm moves downwards, and the spring 12 expands, so that the contact plate 20 on the spring 12 comes out of contact with the spring 16. The circuit is thus opened, and the spring 16 suddenly closes the valve. By adjusting the flow of gas through the pipe 5 and the distance between the two contact plates the time during which the valve is open and thus the lighting time, can be varied as required.

Having thus described my invention what I claim is:—

1. In a light signal apparatus, a gas supply pipe, a valve controlling the passage of gas, an electro-magnet acting upon said valve, means for opening and closing the circuit of said electro-magnet, controlled by the flow of gas, and means for operating said valve against the action of the electro-magnet.

2. In a light signal apparatus, a casing having a diaphragm, gas supply and delivery pipes to said casing, a spring actuated valve inclosed in the casing and controlling passage of the gas through the delivery pipe, a lever connection between the diaphragm and said casing, a spring actuating said lever connection, an electro-magnet to open the valve against the action of its spring, and means connected with said lever connection for opening and closing the circuit of said electro-magnet at intervals.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GUSTAF DALÉN.

Witnesses:

CARL FRIBERG,
WALDEMAR BOMAN.