

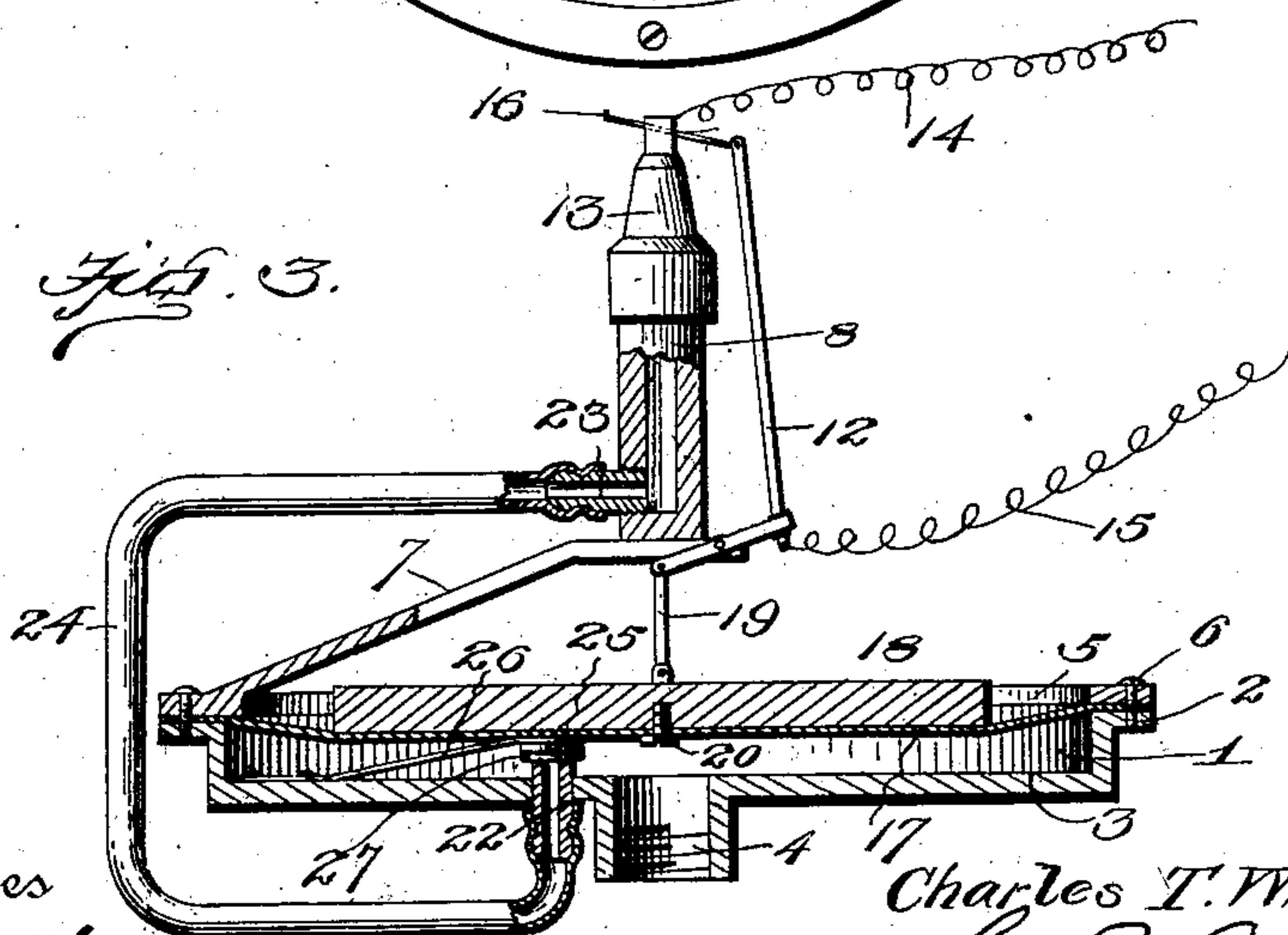
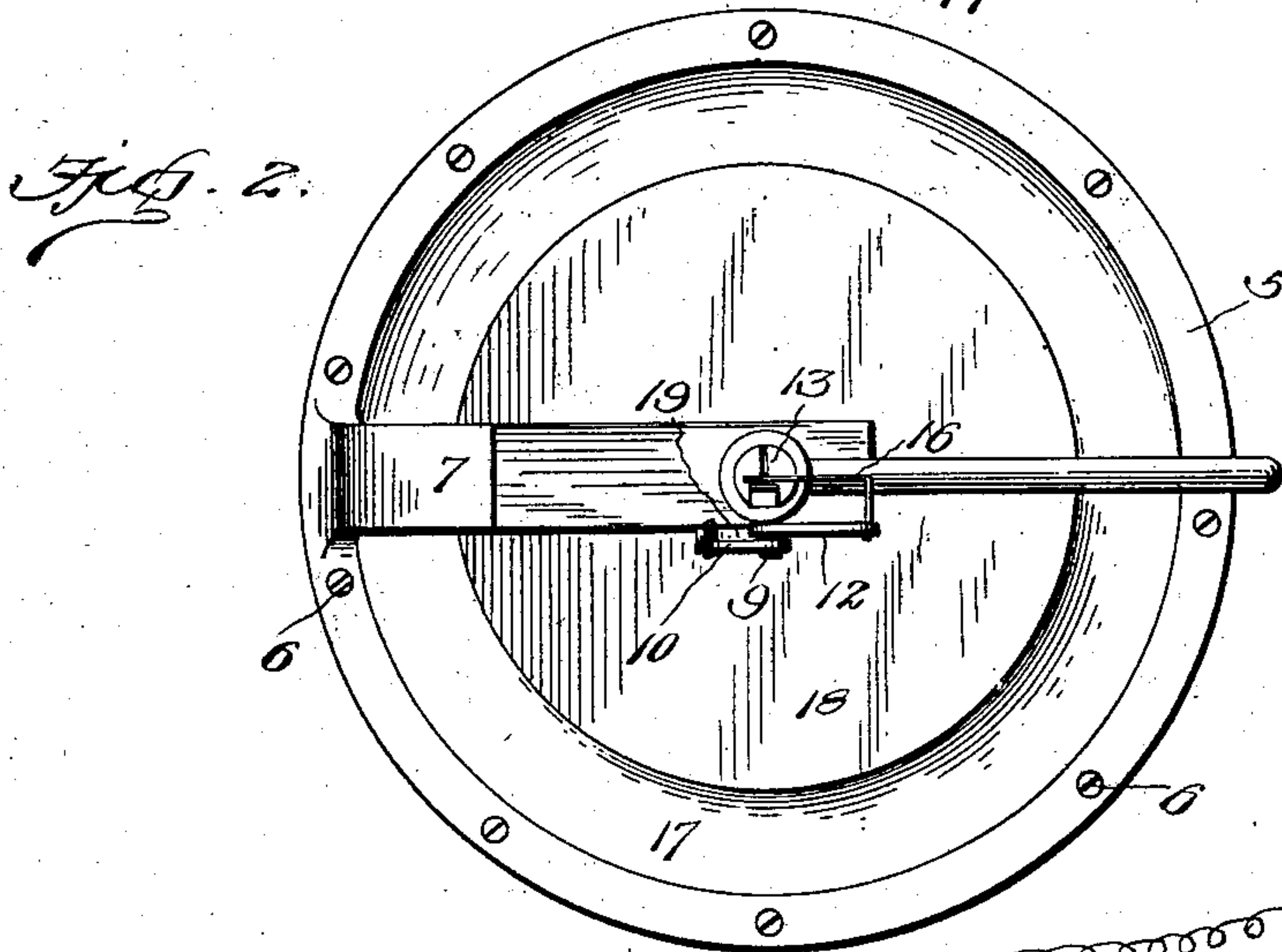
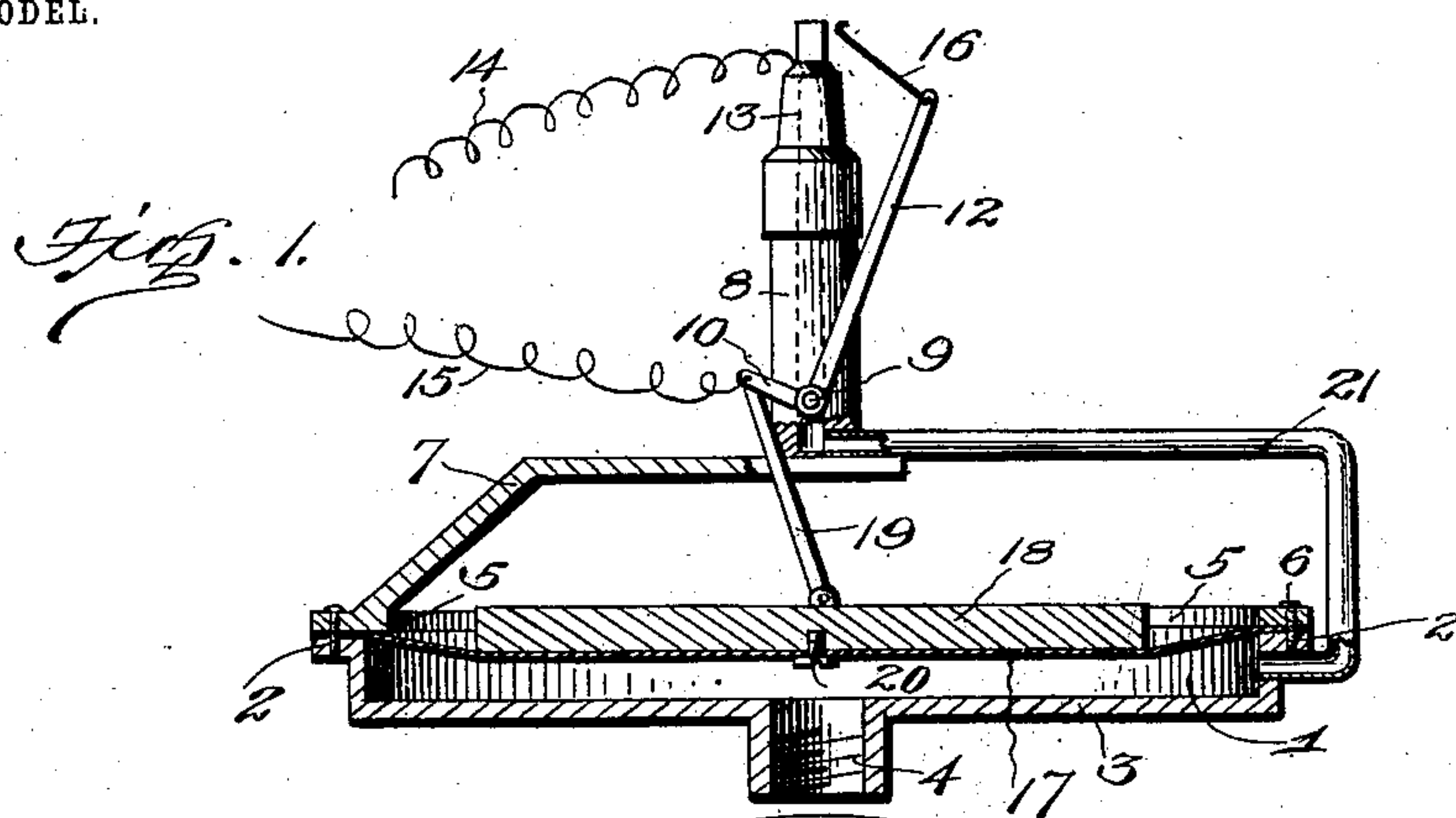
No. 729,470.

PATENTED MAY 26, 1903.

C. T. WILLSON.
GAS BURNER.

APPLICATION FILED AUG. 9, 1902.

NO MODEL.



Witnesses

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CHARLES T. WILLSON, OF AMENIA, NEW YORK.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 729,470, dated May 26, 1903.

Application filed August 9, 1902. Serial No. 119,115. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. WILLSON, a citizen of the United States, residing at Amenia, in the county of Dutchess and State of New York, have invented certain new and useful Improvements in Gas-Burners; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to devices for automatically turning on and off a gas-burner and igniting the gas.

The object is to provide a device of this character which can be applied to any gas-fixture in place of the ordinary burner and which will be automatically operated and controlled by the pressure of the gas within the pipes, another object being to provide a device of this character by which the lights of burners equipped with this form of burner may be ignited or extinguished without interfering in any manner with other lights of ordinary burners in the same line of piping.

A further object is to provide such a device which will be simple in construction, durable in use, inexpensive to produce, and well adapted to the use for which it is designed.

With these and other objects in view the invention consists in the construction and arrangement of the parts, as will be hereinafter more fully described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of the device. Fig. 2 is a top plan view of the same, and Fig. 3 is a longitudinal vertical section of a modified form of the device.

In the drawings, referring particularly to Figs. 1 and 2, the numeral 1 denotes the body or base of the burner, consisting of a shallow cup, preferably cylindrical in shape, the vertical sides of which are provided with an annular flange 2 and the bottom 3 of which is formed with a centrally-disposed depending nipple 4, having interior screw-threads and is adapted to be attached to the bracket or gas-fixture of a gas-service pipe.

5 denotes a ring corresponding in diameter and shape to the flange 2, the said ring and flange being provided with aligned screw-

threaded holes to receive screws 6, whereby they are clamped together.

7 denotes an arm or bracket rigidly connected to or formed integral with the ring 5, the upper end of the bracket or arm being arranged in a horizontal plane above the body 1.

8 denotes a burner-pipe supported upon the arm 7 and having formed near its lower end a valve 9, to the stem of which is connected an operating-lever 10 and an upwardly-projecting arm 12. Upon the upper end of the pipe 8 is attached a burner or tip 13, provided with a contact-piece forming one terminal of one wire 14 of an electric circuit, the other wire 15 of the circuit being connected to the stem of valve 9, the arm 12 of which has on its opposite end a wire contact-finger 16, forming the opposite terminal of the electric circuit. The wires 14 and 15 of the said circuit lead to a suitable source of electric supply and sparking device. (Not shown.)

17 denotes a diaphragm formed of a thin sheet of flexible material which is adapted to be placed upon the flange 2 and to be clamped thereto by the ring 5, thus forming a gas-tight top for the cup 1. Upon the diaphragm 17 is adapted to be placed a disk 18, of any suitable size and material and of proper weight.

19 denotes a rod or link pivotally connected at one end to the disk 18 and at its opposite end to the lever 10, by which means the valve is rocked. The disk 18 may be attached to the diaphragm in any suitable manner, but preferably by means of a small screw 20 passing upwardly through the diaphragm and into the disk.

21 denotes a burner feed-pipe communicating at its lower end with the cup 1 through the side thereof and communicating at its upper end with the burner-pipe below the valve 9.

In Fig. 3 of the drawings I have illustrated a modified construction of the device. In this instance I do away with the valve in the burner-pipe, and in the bottom of the cup 1 I place a nipple 22, and in the lower end of the burner-pipe I place a similar nipple 23, each nipple being formed on its end with a head, to which are connected the opposite ends

of a flexible pipe 24. The nipple 22 is adapted to project above the bottom 3 of the cup a slight distance and forms a seat for a valve 25, consisting of a thin disk of suitable material fixed on the end of a flat leaf-spring 26. 5 The lower side of the disk 25 is provided with a washer 27, of leather or other soft material, which will tightly engage the seat on the end of the pipe 24 when pressed against the same. 10 The closing of the valve 25 is caused by the falling of the diaphragm and the disk 18, due to a reduction of gas-pressure in the pipes and cup 1. The diaphragm in falling engages the valve 25, forces the same down on 15 its seat against the tension of the spring 26. When the force of gas is again increased, the diaphragm will be raised and the valve released, and which by action of the spring will be lifted from its seat and again permit gas to 20 flow to the burner pipe and tip, where it will be ignited in the same manner as described in Fig. 1.

In operation, the disk 18 being of such weight that it will remain supported by the 25 diaphragm while the gas is at a certain pressure and the valve will remain closed, as soon as the pressure of gas is increased the diaphragm and disk will be raised, thereby rocking the valve 9 to turn on the gas and simultaneously moving the arm 12 and the finger 16 into contact with the opposite terminal on the burner-tip to cause a spark whereby the gas is ignited, and upon a decrease of gas below a certain pressure the diaphragm 30 and disk will fall, and thereby reverse the movement of the lever 10 to turn off the gas. 35

The parts might be adapted for a reverse operation—that is, so that a reduction in pressure will light the gas and an increase or 40 sumption of pressure extinguish the gas.

From the foregoing description, taken in connection with the accompanying drawings, the operation and advantages of the device will be readily understood, and a further description of the same is not deemed necessary. 45

Various changes in the form, proportion, and the minor details of construction may be

resorted to without departing from the principle or sacrificing any of the advantages of 50 this invention.

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

1. In a device of the character described, 55 the combination with a gas-burner; of a cup having a gas-inlet thereto, a diaphragm actuated by the gas within the cup, a pipe establishing communication between the burner and cup, a cut-off valve to control the supply 60 of gas to the burner, a connection between the cut-off valve and the diaphragm, and an electric igniting device including a movable electrode actuated by the movement of the diaphragm, substantially as described. 65

2. In a device of the character described, the combination with a gas-burner; of a cup having a gas-inlet thereto, a diaphragm actuated by the gas within the cup, a pipe establishing communication between the cup and 70 the gas-burner, a cut-off valve carried by the gas-burner and provided with a crank-arm, a link pivotally connecting the crank-arm with the diaphragm, an electric circuit, and an igniting device including a movable electrode 75 connected to the valve and operated simultaneously therewith, substantially as and for the purpose set forth.

3. In a device of the class described, the combination of a gas-receiver having a 80 weighted diaphragm movable in one direction by gas-pressure in the receiver, a burner, a gas-conductor connecting the same with the receiver, a valve to control the supply of gas to the burner, and a rocking electric igniting 85 device connected to the diaphragm and also connected to the valve, whereby said device and valve are simultaneously operated by the diaphragm, substantially as described.

In testimony whereof I have hereunto set 90 my hand in the presence of two subscribing witnesses.

CHAS. T. WILLSON.

Witnesses:

M. K. LEWIS,
FELIX MASTERSON.