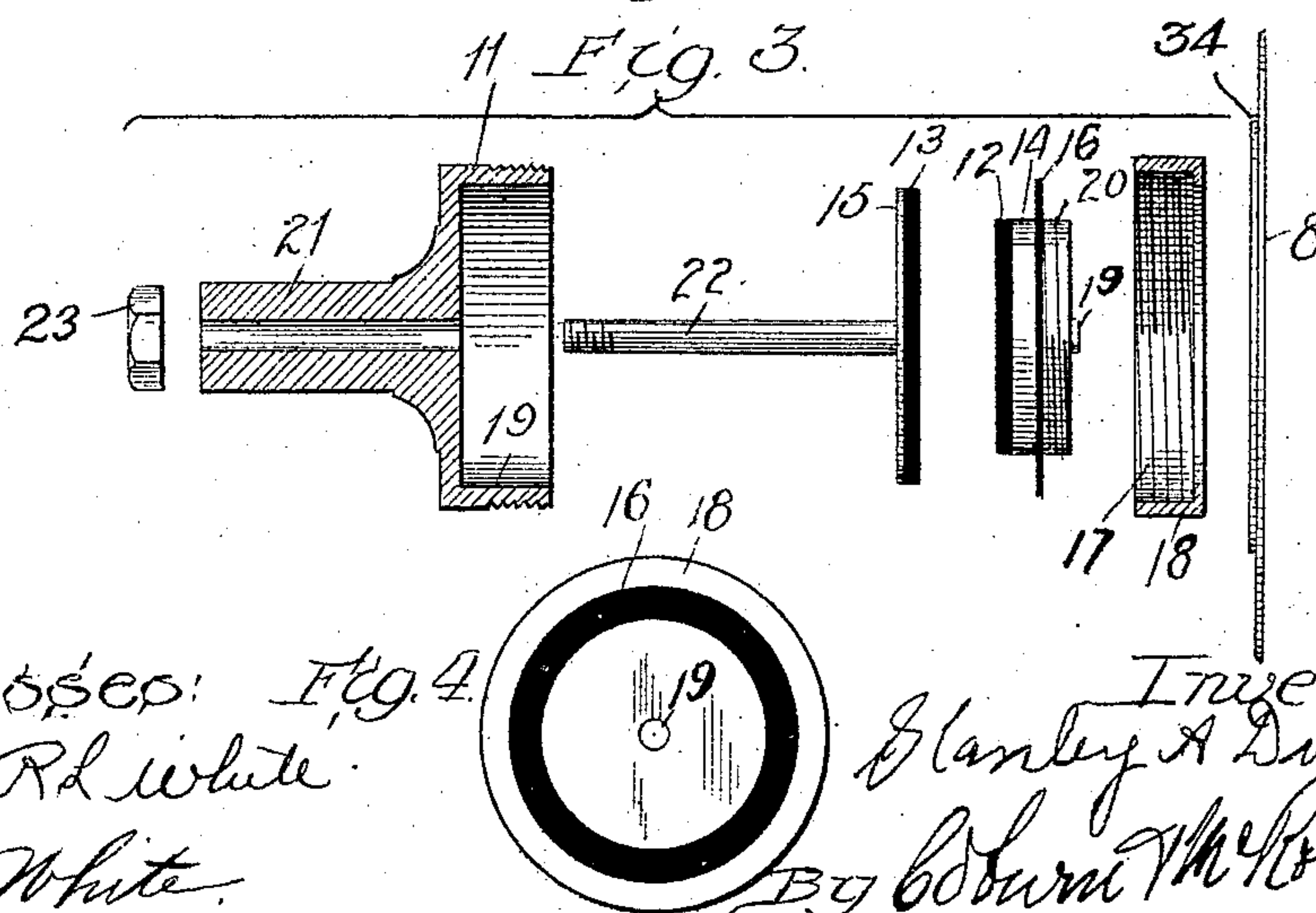
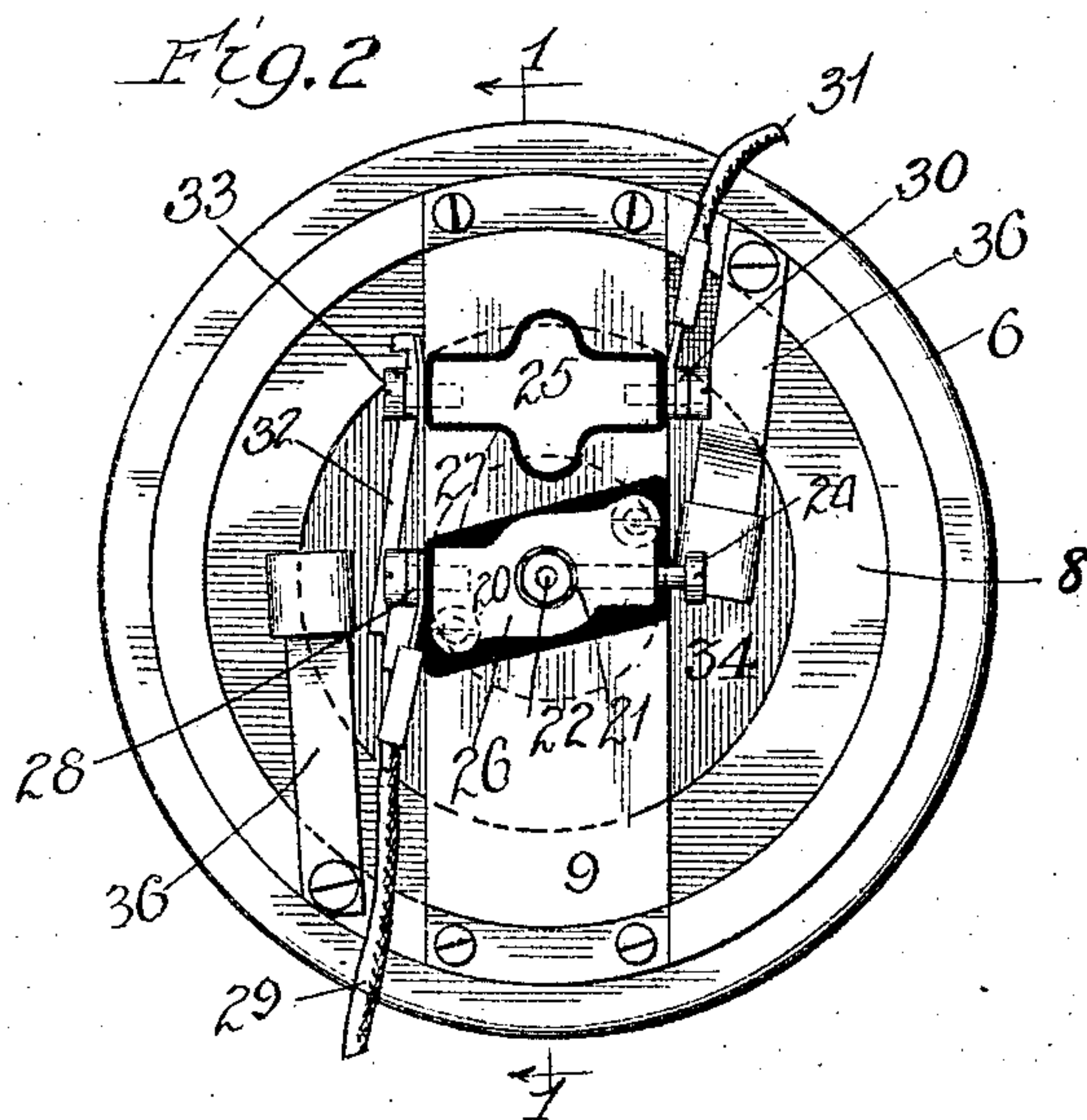
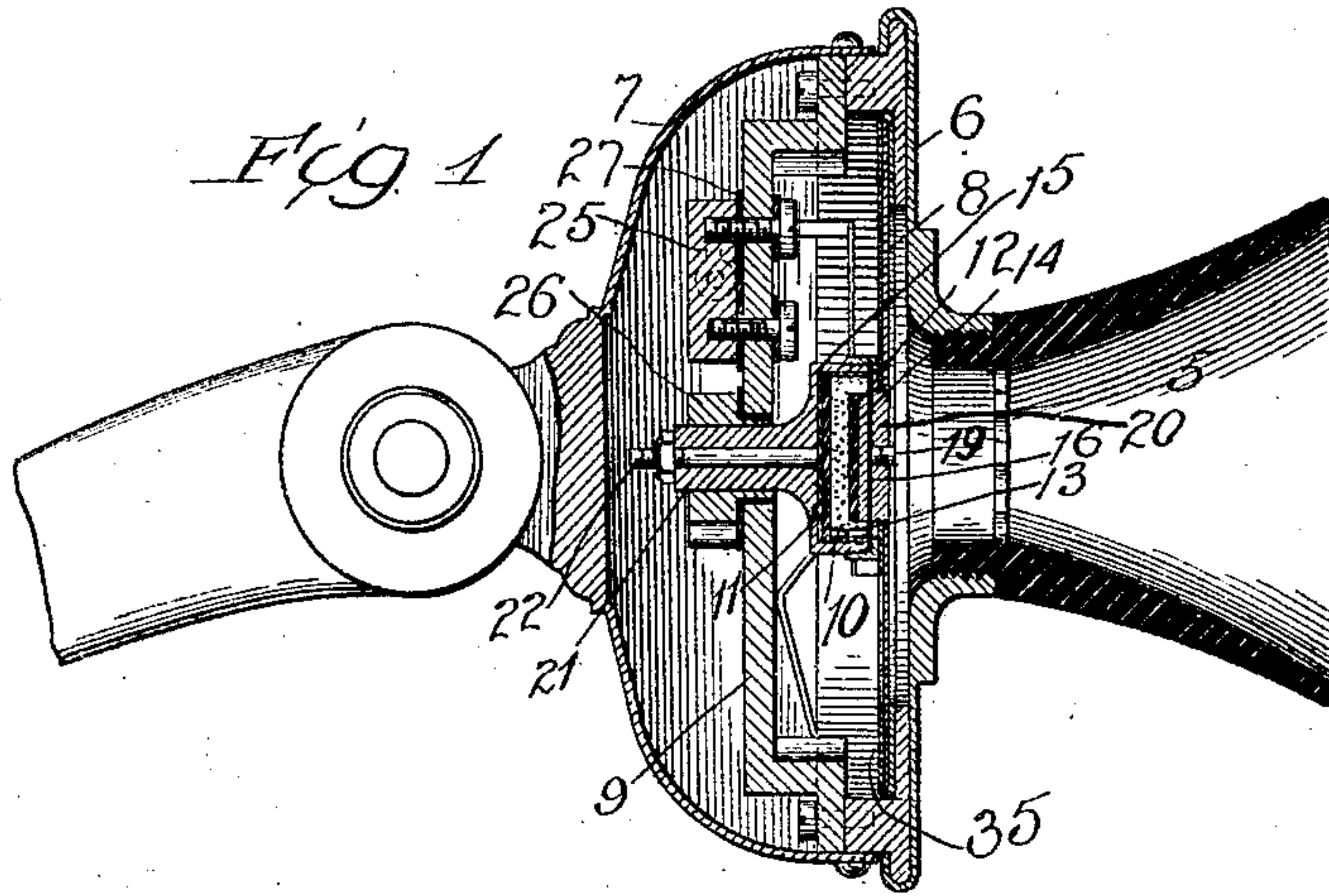


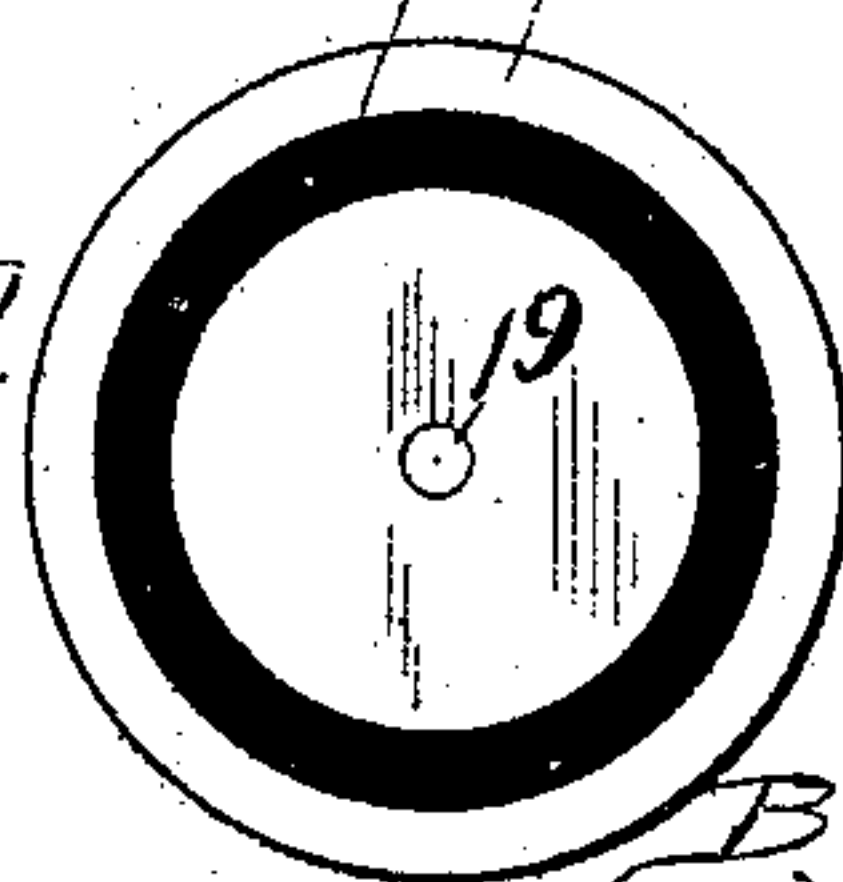
S. A. DUVALL.
 TELEPHONE TRANSMITTER.
 APPLICATION FILED SEPT. 26, 1906.

945,023.

Patented Jan. 4, 1910.



Witnesses: *Fig. 4*
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UNITED STATES PATENT OFFICE.

STANLEY A. DUVALL, OF SOUTH BEND, INDIANA.

TELEPHONE-TRANSMITTER.

945,023.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed September 26, 1906. Serial No. 336,225.

To all whom it may concern:

Be it known that I, STANLEY A. DUVALL, a citizen of the United States, residing at South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Telephone-Transmitters, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to telephone transmitters of the granular carbon type, and contemplates certain novel features of construction therein which are set forth in the accompanying specification and pointed out in the claims.

In order that my invention may be better understood I have shown the same in the accompanying drawings in which—

Figure 1 is a sectional view in elevation of a transmitter of the granular type embodying my invention; Fig. 2 is the rear view of the back of the instrument with the outer casing removed; Fig. 3 is a detail view showing parts of the carbon-cup and other elements separated on the line of their axis; and Fig. 4 is a detail view showing the mica diaphragm and threaded button which connects the same to the main or sound-receiving diaphragm.

Like characters of reference represent the same parts in all the figures.

In the drawings 5 is the mouth piece which is attached to the front of the frame 6 which is set in a metallic cup-shaped outer casing 7, which may be mounted in any convenient manner. The sound-receiving diaphragm 8 and the bridge 9 are mounted in the frame in the usual manner, and the granular-carbon 10 is contained in a cup or chamber 11 carried by the bridge and connected to the diaphragm in a manner hereinafter described. The cup 11 serves as a casing or chamber for the electrodes 12 and 13 and the granulated conducting material, as is clearly shown in Fig. 1. The two electrodes 12 and 13 consist of disks of carbon very highly polished, and to the backs of the electrodes are soldered respectively the brass disks 14 and 15. The open end of the cup is closed by a mica diaphragm 16 which is fastened to the cup by any suitable means, such as the threaded ring 17 provided with an inturned flange 18 which clamps the periphery of the mica disk against the mouth of the cup. The walls of the chamber in

the cup, which is preferably made of brass in order that it may have substantially the same co-efficient of expansion as the electrodes and the granulated conducting material between them, are lined with gummed paper to prevent the short circuiting of the instrument.

A brass pin 19, firmly attached to the brass disk 14 of the front electrode 12, passes through the mica disk and is provided with threads adapted to engage a threaded opening at the center of a metal button 20, and when in operative position the electrode 12, the button 20 and the mica disk 16, which is positioned between the two, are firmly secured together. The button 20 is preferably of the same metal as the diaphragm 8, and is provided with threads at its periphery which are adapted to engage threads in a central opening in the diaphragm.

The cup 11 is reduced and elongated at its rear end to form a hollow stem 21 adapted to receive a pin 22 passing therethrough and which is firmly secured to the disk of the rear electrode 13. This pin is threaded at its end and receives a nut 23 by which the rear electrode is rigidly held in position within the chamber.

The bridge-piece 9 is preferably of brass and is provided with an opening to receive the elongated stem of the cup which is held in place by a set screw 24. The bridge is also provided with terminal blocks 25 and 26, preferably of brass, which are insulated from the bridge by sheets of mica 27 or other suitable material. The stem 21 passes the block 26 and is in electrical contact therewith, the set screw 24 being tapped into this block and aiding in establishing its electrical connection with the stem. The block 26 is provided with a binding post 28 to receive one of the conductors 29, and the block 25 is provided with a similar binding post 30 to receive the other conductor 31. The block 25 is in electrical connection with the diaphragm 8, which is electrically connected with the front electrode by the button 20, by means of a conducting strip 32 which connects at one end with the diaphragm and at the other end with a binding post 33 on the block 25. The strip 32 is preferably provided with a ring-portion 34 secured to the diaphragm 8 and surrounding and coincident with the opening therein and internally threaded to engage the button 20. By this

means more extended bearing surface is provided for the engagement of the button and diaphragm.

It is to be noted that when the parts are properly assembled the ring portion 34 does not touch the threaded ring 17, but a suitable air gap is preserved to prevent short-circuiting in the transmitter.

The diaphragm is provided with the usual insulating ring 35 and padded dampening springs 36.

Having described my invention what I claim as new and desire to secure by Letters Patent of the United States, is—

1. In a telephone transmitter, a diaphragm having a central threaded opening, a bridge, a carbon cup carried by the bridge, a rear electrode in the cup, a mica disk closing the cup, a front electrode connected to the disk and having a pin, and a threaded button on the pin engaging the thread of the opening in the diaphragm.

2. In a telephone transmitter, a diaphragm having a central threaded opening, a bridge,

a carbon cup carried by the bridge, a rear electrode, a mica disk closing the cup, a front electrode having a stem passing through the disk, and a button on the stem having a thread to engage the diaphragm opening.

3. In a telephone transmitter, the combination with a frame and an outer casing, a carbon-chamber, an electrode and means for securing it in said chamber, a threaded button carrying a piston-electrode and a mica disk to close the chamber, a sound-receiving diaphragm having a threaded opening, and a terminal having a threaded ring, the threads of the ring and diaphragm engaging the thread of the button, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

STANLEY A. DUVALL.

Witnesses:

ELIZABETH MOLITOR,
C. G. McROBERTS.