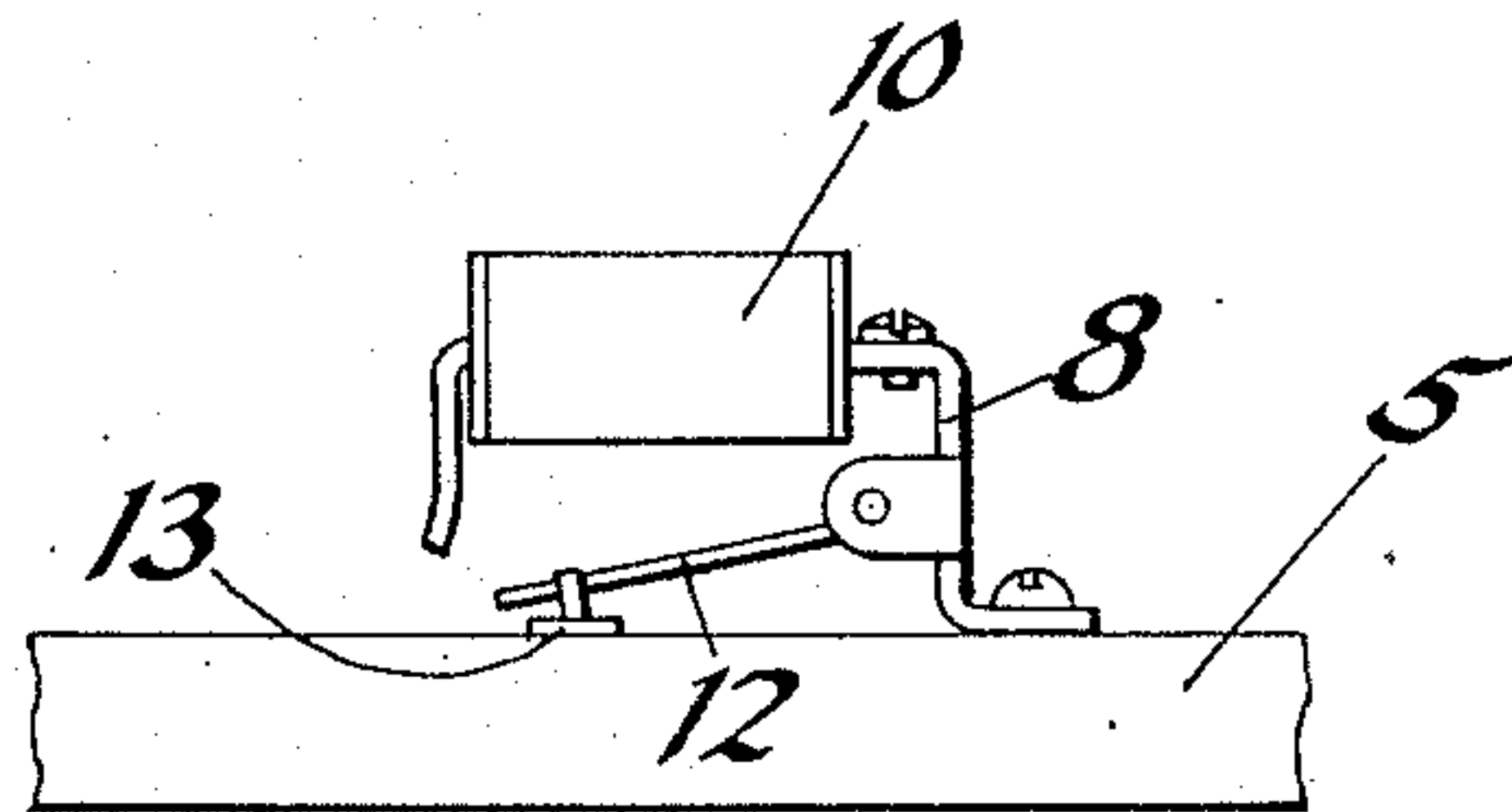
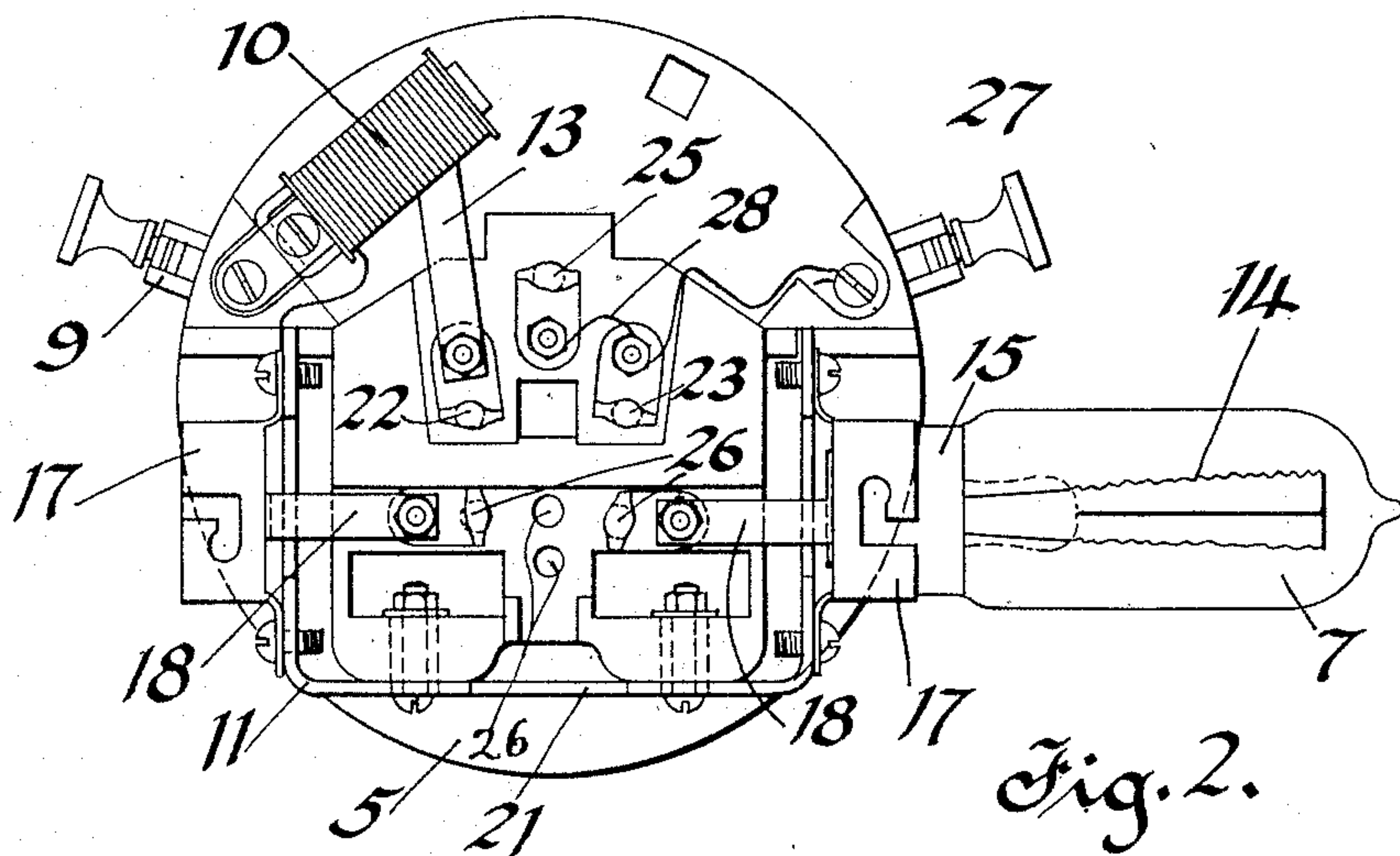
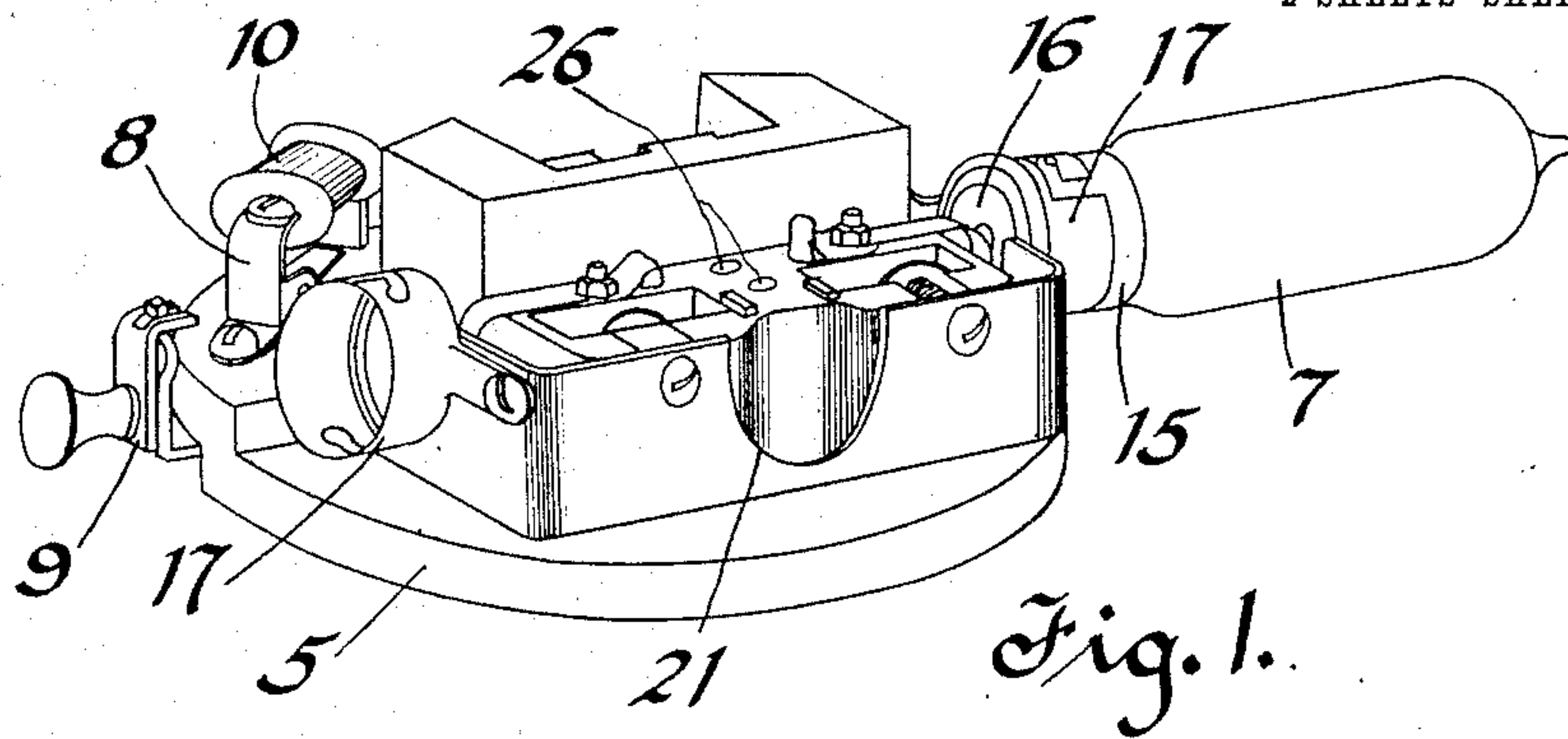


O. FOELL & M. HARRIS.
NERNST LAMP BODY.
APPLICATION FILED NOV. 11, 1908.

975,126.

Patented Nov. 8, 1910.

2 SHEETS—SHEET 1.



WITNESSES:
W. B. ...
Geo. Walker

Fig. 3.

BY

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2 SHEETS—SHEET 2.

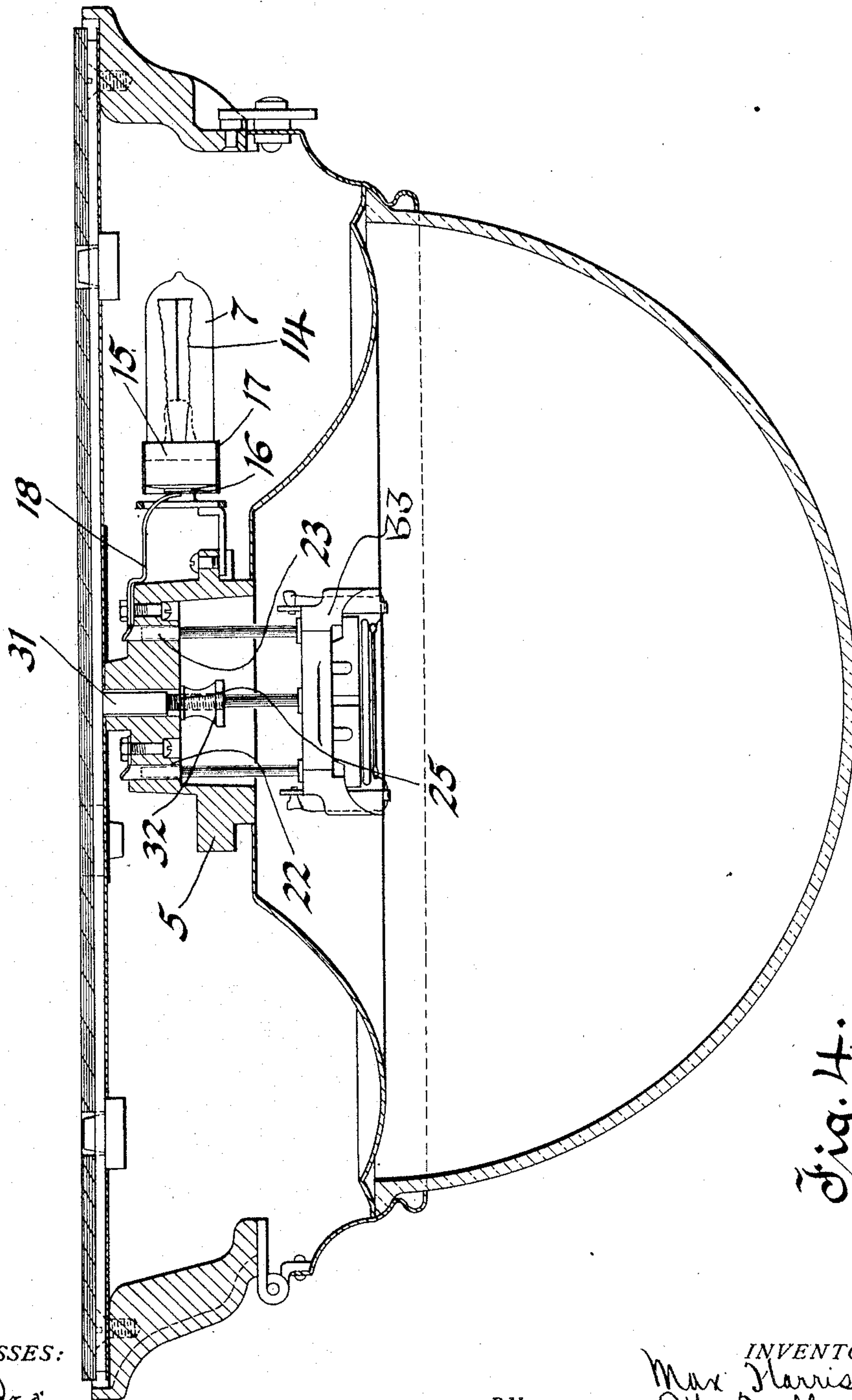


Fig. 4.

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UNITED STATES PATENT OFFICE.

OTTO FOELL AND MAX HARRIS, OF PITTSBURG, PENNSYLVANIA, ASSIGNORS, BY
MESNE ASSIGNMENTS, TO NERNST LAMP COMPANY, OF PITTSBURG, PENNSYLVANIA. A CORPORATION OF PENNSYLVANIA.

NERNST-LAMP BODY.

975,126.

Specification of Letters Patent.

Patented Nov. 8, 1910.

Application filed November 11, 1908. Serial No. 462,123.

To all whom it may concern:

Be it known that we, OTTO FOELL, a subject of the Emperor of Germany, and MAX HARRIS, a citizen of the United States, both of whom reside in Pittsburg, county of Allegheny, and State of Pennsylvania, have made a new and useful Invention in Nernst-Lamp Bodies, of which the following is a specification.

This invention relates to Nernst lamps and more particularly to an improved design in which the elements comprising the lamp are so constructed and located as to form a compact construction admirably adapted for single or multiple glower lamps.

An object of this invention is to produce a lamp which may be employed in fixtures where a low height of lamp body is required.

In the drawings accompanying this application and forming a part thereof: Figure 1 is a perspective view of an apparatus embodying our invention; Fig. 2 is a plan view of the apparatus shown in Fig. 1; Fig. 3 is a side elevation of a cut-out device disclosed in Figs. 1 and 2; and, Fig. 4 is a sectional elevation of apparatus embodying our invention.

A Nernst lamp consists of glowers, heaters, a cut-out device for the heaters, and a ballast or current regulating device. The glowers are formed of a refractory material which at ordinary temperatures is a non-conductor of electricity, but which, upon being heated, is converted into a conductor and is then rendered incandescent and caused to emit light by the passage of an electric current through it. The function of the heaters is to raise the temperature of the glowers until they become current conductors. The cut-out device ordinarily employed consists of a small magnetic coil which is included in the glower circuit and which is adapted to actuate an armature which forms a part of the heater circuit and is so arranged as to cut the heaters out when the glowers have become current conductors and are self-sustaining under the influence of the current flowing through them. The ballast consists of iron wire which is included within the glower circuit and which is inclosed by a tube or bulb filled with an inert gas.

The ballast, the cut-out device and the terminals of the lamp are mounted on the lamp body while the heaters and glowers are mounted on a separate insulating support which is adapted to be plugged into the lamp body and thereby connected into the lamp circuit.

In the drawings, we have illustrated an insulating base 5, on which a cut-off device is mounted and which is adapted to receive one or more ballast tubes 7. The cut-out device consists of a frame portion 8, secured to the insulating base 5 and connected by means of its mounting screw to a terminal 9 of the lamp. A magnetic coil 10 is mounted on the frame portion 8 and one terminal of the coil is connected to the frame portion. The other terminal is connected to a ballast terminal strip 11, secured to the insulating base 5. A movable armature 12 is pivotally mounted on the frame portion 8 of the cut-out device and is adapted to be actuated by the coil 10. The armature is so located that it is, by its own weight, held against a terminal piece 13 when the coil 10 is not energized. The terminal piece 13 is located in the heater circuit of the lamp while the coil 10 is located in the glower circuit.

The ballast consists of iron wire 14 mounted in the tube 7 and connected to terminals 15 and 16 provided on the base portion of the tube. The base portion of the tube is adapted to be received by a socket 17 secured to the strip 11 and is electrically connected therewith. A terminal spring 18 is mounted on the insulating base 5 and is so arranged that it will contact with the ballast terminal 16 when the ballast tube 7 is secured into the socket 17.

In the drawings we have illustrated the strip 11 as provided with two sockets 17, in one of which we have shown a tube 7. The strip 11 is cut away at 21 so that a third socket 17 can be secured to it at that point.

The heaters and glowers are mounted on a separate base 33 of non-conducting material shown in Fig. 4, which is adapted to be secured to the base 5 by means of terminal prongs. The terminal prongs are adapted to be inserted into holes 22, 23, 25 and 26, provided in the base 5 and which are lined with metallic sleeves electrically connected into the lamp circuit and adapted to elec-

trically connect the terminal prongs of the heater and glower porcelain into the lamp circuit by contacting with them.

In the case of direct current lamps, a lamp terminal 27 is secured to the base 5 and is connected by means of a wire 28 and a short metallic strip to the lining sleeve of the hole 23. It is also connected by the same wire to the lining sleeve of the hole 25. The terminal strip 13 with which the armature 12 of the cut-out device contacts is connected to the metallic sleeve of the hole 22 and the spring terminals 18 each connect with the lining of one of the holes 26. When the heater and glower base 33 is secured to the base 5 and the heaters and glowers are plugged into the lamp circuit, current from the terminal 9 flows through the frame portion 8, the armature 12, the strip 13, the heater coils and out through the terminal 27. After the glowers are converted into conductors, the current flows through and energizes the coil 10 and thereby moves the armature 12 upwardly to break the contact between it and the strip 13 and to cut the heaters out of the lamp operating circuit. After the heaters are cut out, the current flows from the terminal 9 through the frame portion 8, through the ballast strip 11, through the ballast wire of each of the tubes 7, and through the separate strips 18 to one terminal of each glower. The other terminal of each glower is electrically connected to the wire 28 by means of one of the terminal plugs of the heater and glower porcelain, and the current flows from the wire 28 to the terminal 27. This completes the operating circuit of the lamp.

In case of an alternating current lamp, the lamp proper is provided with two cut out devices and one is located adjacent to each terminal of the lamp. By varying the shape and size of the terminal strip 11 a number of ballast tubes 7 may be secured to it and consequently a greater number of glowers may be accommodated.

The lamp body or porcelain 5 is secured in place by means of a bolt 31 and a mill-headed nut 32. This lamp is particularly adapted to be employed where low height of lamp body is required and the lamp body may be installed within a very shallow ceiling bowl or other fixture.

The apparatus illustrated may be utilized for a direct or alternating current lamp, and as described, one, two or three glowers may be employed with it. We prefer to employ a separate ballast tube for each individual glower, and consequently if more than three glowers are to be employed the construction of the strip 11 must be varied somewhat.

In accordance with the provisions of the

patent statutes, we have described the principle of operation of our invention, together with an apparatus which we consider to represent a preferred embodiment thereof, but we desire to have it understood that the apparatus shown is only illustrative and that the invention can be carried out by other means.

What we claim is:

1. In combination in a body portion of a lamp of the class described, a circular insulating base, lamp terminals mounted on said base, a ballast terminal strip, a plurality of ballast tubes mounted on said strip, a cut-out device mounted on said insulating base, and terminal holes provided in said insulating base and adapted to receive terminal prongs.

2. In combination in a lamp body of the class described, a circular insulating base portion, lamp terminals mounted on said base, a ballast terminal and support strip mounted on said base, a plurality of ballast support sockets secured to said strip, ballast tubes mounted in said sockets and extending in substantially radial directions relative to said base portion, a cut-out device mounted on said base portion, and holes adapted to receive terminal plugs provided in said base portion and included in the lamp operating circuit.

3. In combination in a lamp body, an insulating base portion, lamp terminals mounted on said portion, a ballast terminal and support strip mounted on said portion, a plurality of ballast tube support sockets mounted on said strip, ballast tubes mounted in said sockets, and a spring terminal secured to said portion and contacting with the base of each ballast tube.

4. In combination in a lamp body, an insulating base portion, lamp terminals secured thereto, a ballast terminal and support strip mounted on said portion, a horizontally projecting ballast tube secured to said strip, and a cut-out device mounted on said portion and electrically connected to said strip.

In testimony whereof, I have hereunto subscribed my name this 2nd day of November, 1908.

OTTO FOELL.

Witnesses:

GEO. J. TAYLOR,
GEO. A. WALKER.

In testimony whereof, I have hereunto subscribed my name this 6th day of November, 1908.

MAX HARRIS.

Witnesses:

C. S. ST. JOHN,
M. RICHARD SCHWARZ.