

(No Model.)

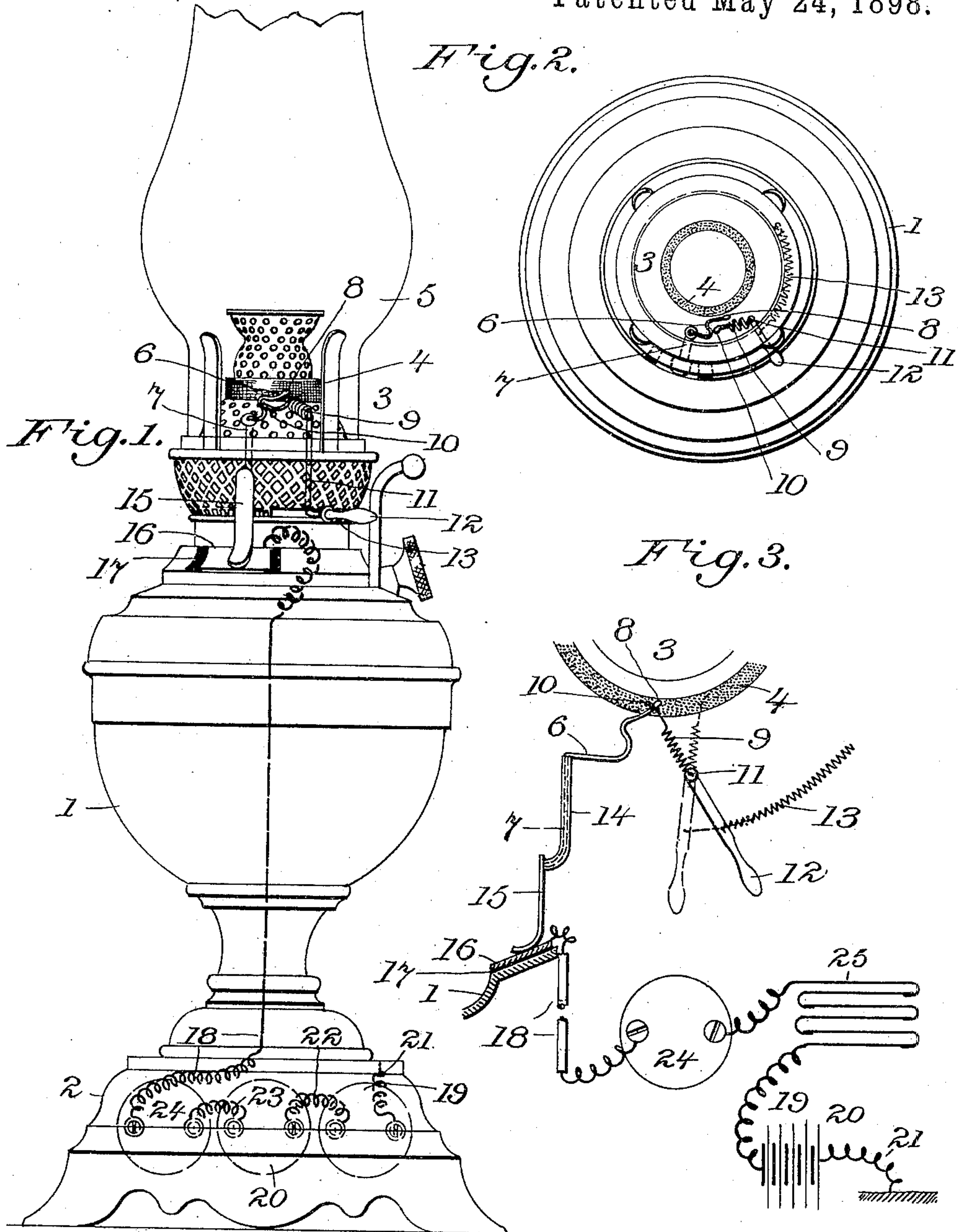
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S. M. MEYER.

ELECTRICAL LIGHTING DEVICE FOR KEROSENE OR OTHER BURNERS.

No. 604,626.

Patented May 24, 1898.



WITNESSES:

O. Knight
Ernest E. Buzen

INVENTOR

Svend Martin Meyer

BY

Henry J. Prichard
his ATTORNEY

(No Model.)

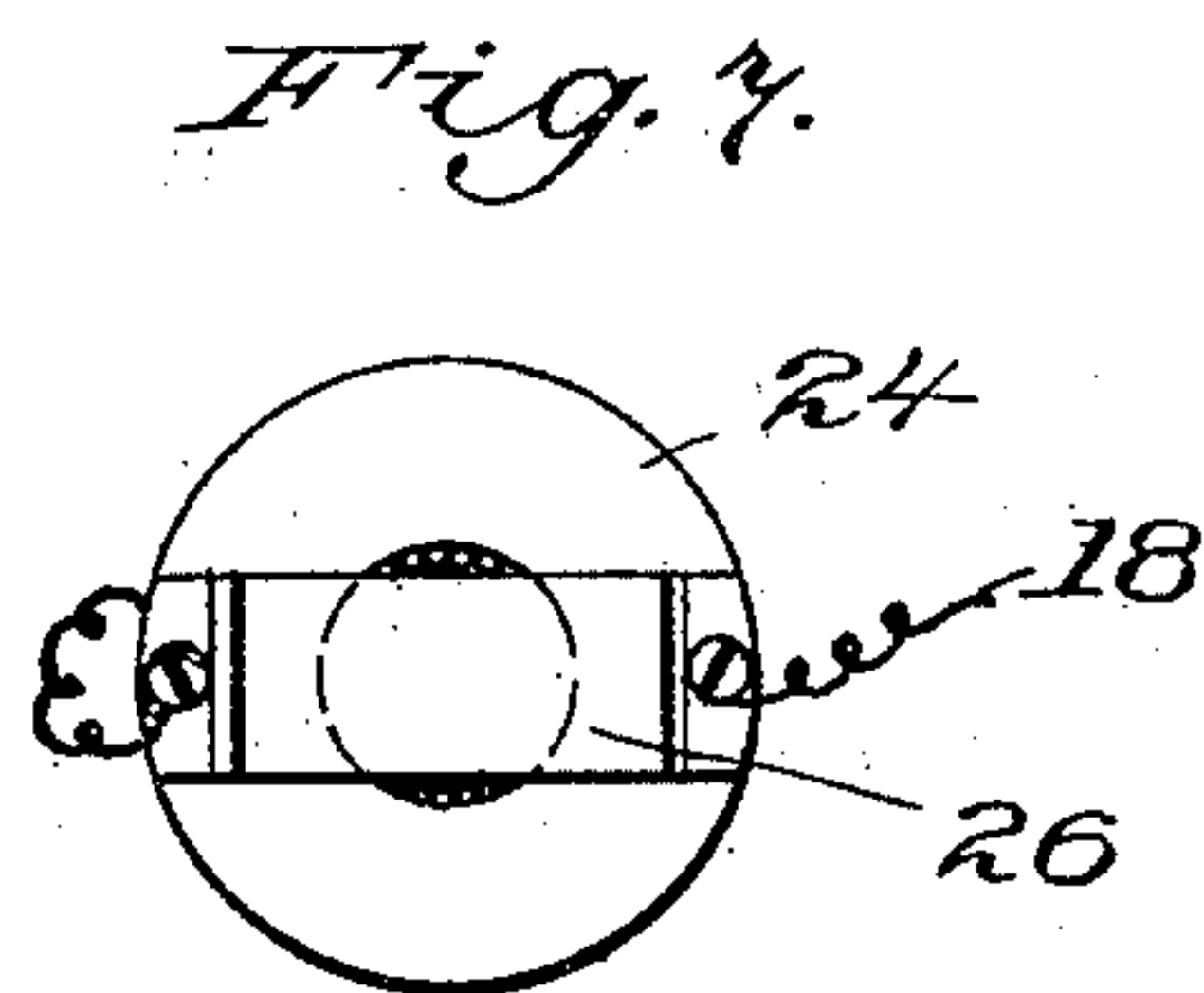
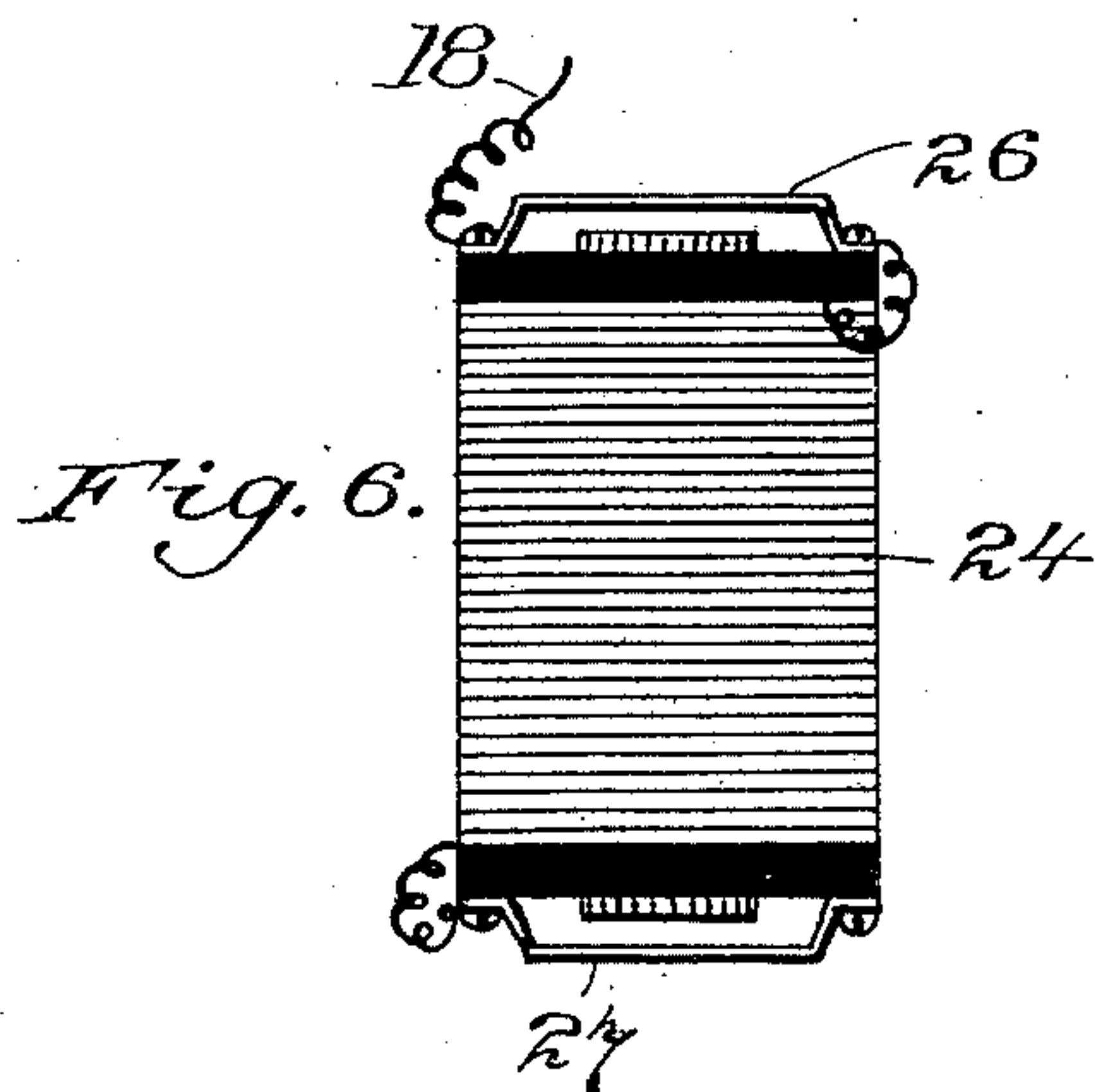
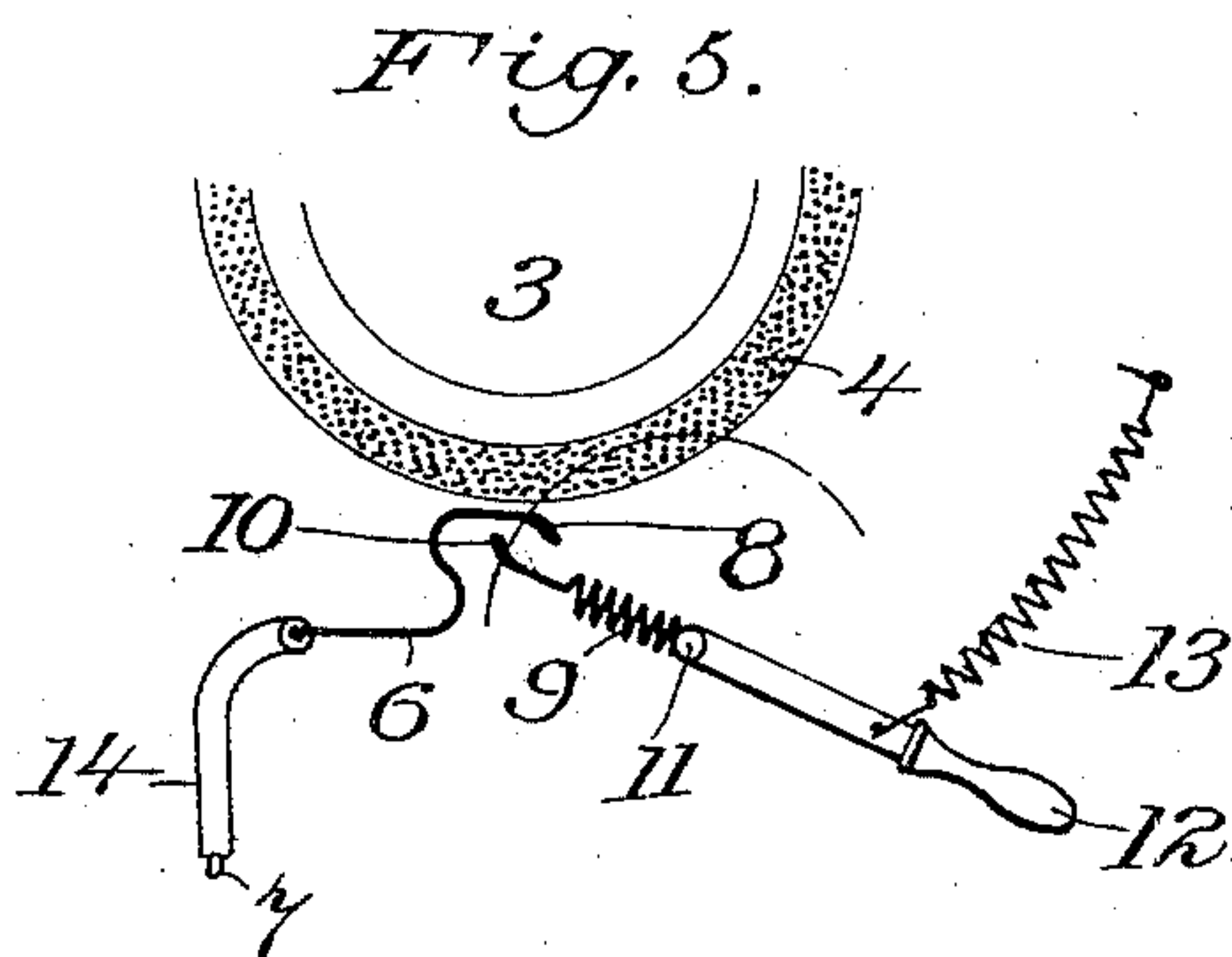
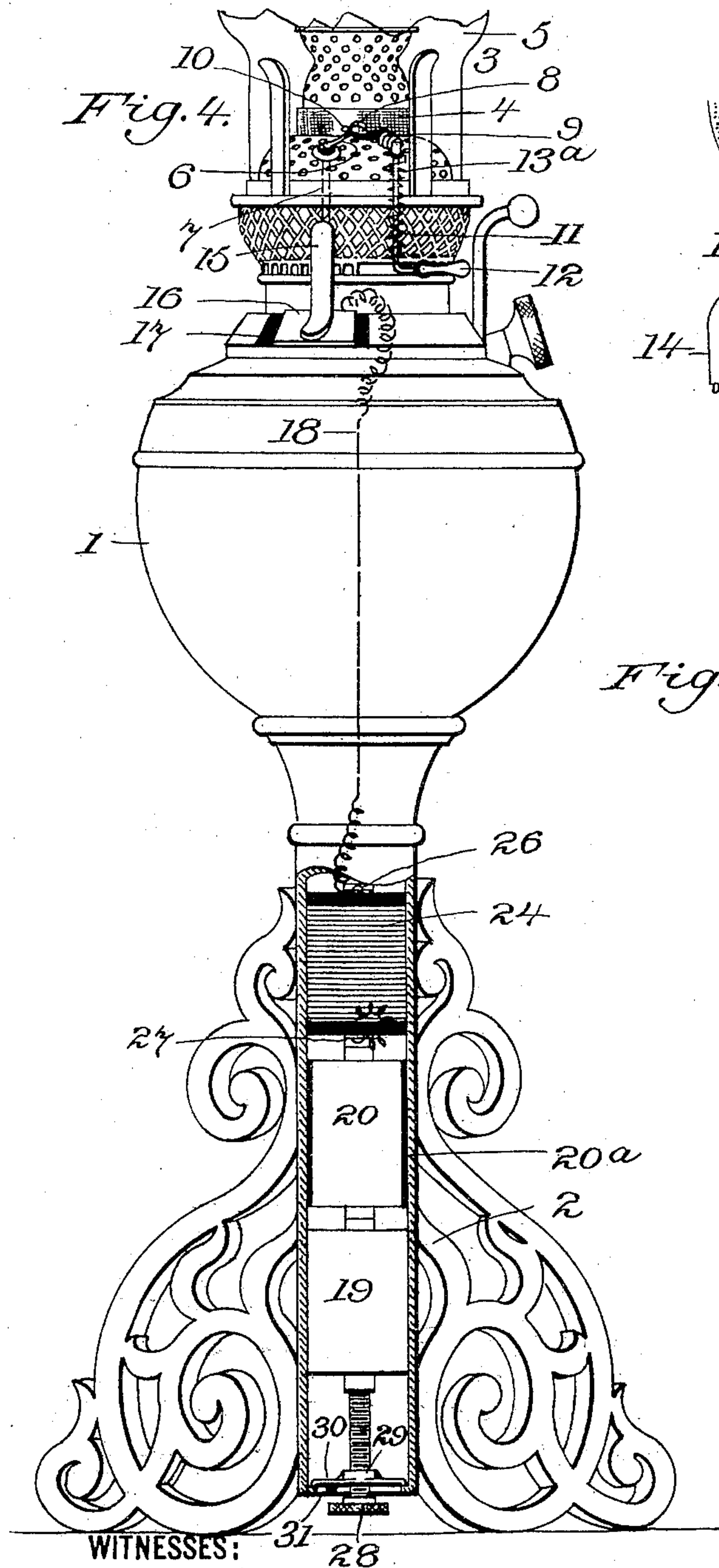
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WITNESSES:
O. Knight
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UNITED STATES PATENT OFFICE.

SVEND MARTIN MEYER, OF BROOKLYN, NEW YORK.

ELECTRICAL LIGHTING DEVICE FOR KEROSENE OR OTHER BURNERS.

SPECIFICATION forming part of Letters Patent No. 604,626, dated May 24, 1898.

Application filed January 27, 1897. Serial No. 620,909. (No model.)

To all whom it may concern:

Be it known that I, SVEND MARTIN MEYER, a citizen of the United States, and a resident of Brooklyn, in the State of New York, have invented certain new and useful Improvements in Electrical Lighting Devices for Kerosene or other Burners, of which the following is a specification.

The subject of my invention is a device for lighting the wick of a kerosene or other lamp by means of an electric spark.

I have discovered by experience that in lighting a lamp-wick by means of an electric spark it is important that the line or direction of the spark should be approximately parallel with the portion of the wick upon which it acts—that is to say, it is important that it should be in a direction as nearly as practicable parallel with or tangential to the wick with which it is brought in contact, so that the line of the spark shall act upon a much greater extent of the wick than would be practicable were it projected transversely across the wick.

My improvements, which I will proceed to describe and the novelty of which will be particularly pointed out in the claims, relate to means for throwing the spark in a line approximately coincident with the side of the wick upon which it is brought in contact, also to means for insuring the sparking at the point where the circuit is broken, means for preventing the catching of the sparking device in the fabric of the wick, and other details which relate to the convenient application of my invention to oil-lamps and the detachability of the burner for trimming or cleansing.

In the accompanying drawings, Figure 1 is an elevation of an oil-lamp with my invention applied. Fig. 2 is a plan of the same, showing the sparking-springs, as in Fig. 1, in normal retracted position. Fig. 3 is a diagrammatic representation of the operating parts, showing the sparking-springs in engagement and projected against the wick in readiness for producing the spark and showing in dotted lines the extreme movement of the vibrating contact-spring in producing the spark. Fig. 4 is an elevation, partly in section, of a banquet-lamp, illustrating the preferred mode of applying the batteries and spark-coils in high standing lamps, also illustrating a modification in the arrangement of the sparking-

springs and a modification in the recoil-spring. Fig. 5 is a plan. Fig. 6 is an elevation of the sparking-coil represented in Fig. 4, viewed from another side. Fig. 7 is a plan of the same.

1 represents the body, 2 the base, 3 the burner, 4 the wick, and 5 the chimney, of a kerosene-lamp of common construction.

6 represents a contact-spring mounted at its heel on an insulated conducting-wire 7 and adapted to have its free end projected over or into contact with the wick 4, as shown in Fig. 3. At its extremity this contact-spring is formed with a knob or bend 8.

9 is a vibrating contact-spring formed at its free end with a knob or hook 10 to engage with the hook 8 of spring 6 and mounted on a vibrating shaft 11, which is grounded electrically in the shell of the lamp and is provided with an operating-handle 12, by which it may be turned so as to vibrate the contact-spring 9 in a horizontal plane. Attached to the handle 12 is a spring 13 for retracting the vibrating contact-spring 9 to the normal position shown in Figs. 1 and 2 when the operating-handle 12 is released. If preferred, a torsion-spring 13^a is applied to the vibrating shaft 11, as shown in Fig. 4, to retract the vibrating spring 9. The contact-spring arms 6 and 9 are so formed and combined that when the vibrating spring 9 is thrown around toward the wick it will slide with elastic pressure over the spring 6 until the knobs or hooks 8 and 10 at the extremities of the springs are brought into contact. These knobs offer a slight resistance to the further movement of the spring-arm 9, and the curved form of the spring-arm 6 adapts it to be carried by the movement of the spring-arm 9 over or into contact with the wick 4, as indicated in Fig. 3. When the resistance between the knobs 10 and 8 is overcome, the breaking of the circuit causes an effective spark, which, following the arc of movement of the extremity 10 of the spring 9 to the position shown in dotted lines in Fig. 3 in a line which intersects or traverses the side of the wick, causes the effective lighting of the wick. The operating-arm 12 being then released, the resilience of the spring 13 or 13^a throws the spring-arm 9 back underneath the arm 6 to the normal position shown in Fig. 2, the arms 6 and 9 being so formed and mounted that in the for-

ward movement for causing the spark the extremity of the spring-arm 9 passes over the spring-arm 6, and as the movement progresses the arms are mutually deflected, one by the other, and when the end of the spring-arm 9 escapes from the upturned end of the spring-arm 6 the latter recoils upward and the former downward, so that in the return movement the end of the spring-arm 9 passes underneath the spring-arm 6, being deflected downward, and on escaping therefrom again springs upward in readiness for passing above the spring-arm 6 at the next movement, as illustrated in Figs. 2 and 3.

In Figs. 4 and 5 I have shown as a modification the fixed spring 6 with a downturned end 8 and the vibrating spring contact-arm 9 passing forward underneath it, so as to deflect it upward in the action of sparking and passed back over the same in its return movement, the effect being the same in either case.

One object of blunting or bending the ends of the contact-springs 6 and 9 is to adapt one to engage with the other, and another object is to prevent their catching in or injuring the wick.

The wire 7, to which the heel of the spring-arm 6 is rigidly attached, is mounted in the removable burner 3 of the lamp, but electrically insulated from the metal thereof by a tube or plate 14, of rubber or other material and of any suitable form.

In order to permit the removal of the lamp-burner 3 for trimming or cleansing, while providing a conductor to a source of electricity in the base 2 of the lamp, the conducting-wire 7 is connected to a spring-plate 15, insulated from the metal of the lamp-burner and adapted, when the burner is applied and turned into position, to engage electrically with a metal plate 16 on the shell of the reservoir 1, insulated from the shell by a plate 17 of rubber, mica, or other material and in permanent electrical connection with the insulated conducting-wire 18, which passes down to one pole of a system of batteries in the base 2 of the lamp. For the purpose of illustration I have shown a pair of dry battery-cells 19 20, the first grounded by a wire 21 to the metallic shell of the lamp, said wire connecting with the carbon of the battery 19, while a wire 22 may connect from the zinc of the battery 19 to the carbon of the battery 20 and a wire 23 from the zinc of the carbon 20 to an induction-coil 24, to which the conducting-wire 18 is connected, as shown. A suitable condenser 25 is, if desired, introduced in the circuit between the conducting-wire 18 and the induction-coil 24 or at any other suitable point in the circuit.

In lamps having a stand 1 of sufficient height it is preferred to introduce the spark-coil 24 and the removable batteries 19 and 20 within the hollow stem of the lamp in the manner illustrated in Fig. 4. In this illustration the spark-coil 24 is permanently con-

nected through a metal conducting-plate 26 with the insulated wire 18. The battery-cell 20, having an insulated covering 20^a, is slipped into the hollow stand 1 with its carbon core connected through a metal conducting-plate 27 with the base of the spark-coil, and the battery-cell 19, which is in electrical connection with the stand or shell 1 of the lamp, is slipped in with its central core in electrical connection with the external cell of the battery 20 and is forced up and secured in position by a screw 28, turning in a nut 29 in the removable cross-bar 30, which is engaged with or detached from an inturned flange or lugs 31 31 in the base 2 of the lamp.

The core of the spark-coil 24 is preferably made of a cluster of soft-iron wires which become magnetized by the current in the coil, which thus serves as an induction-coil as well as a part of the primary circuit.

My improved arrangement of sparking-springs permits the use of a smaller spark-coil of comparatively low resistance.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In combination with a lamp-burner 3 and a suitable source of electricity and conductors; the contact-arm 6 and the contact-spring 9, vibrating in an arc approximately tangential to the wick 4 of the lamp-burner, substantially as and for the purposes set forth.

2. The combination of the lamp-body 1, the removable burner 3, a suitable source of electricity, as 19, 20, 24 and conductor 18, therefrom, in the body of the lamp, an insulated plate 16, on the body of the lamp, in electrical connection with the conductor 18, a circuit-closing device, as 6, 8, 9, 10, mounted on the removable burner, and a spring 15, in electrical connection with the circuit-closer and making connection with the insulated plate 16, when the burner is placed in position, substantially as explained.

3. A device for lighting lamps by electricity comprising a suitable lamp-body, a burner separable therefrom, a source of electricity in the body or base of the lamp grounded by one pole in the lamp-body, an insulated conductor from the other pole, an igniting device mounted on the removable burner grounded by one end in the metal of the burner and connected at the other end with an insulated conductor, insulated contact devices carried by the lamp-body and removable burner respectively and respectively connected to the insulated conductors therein, so as to form electric connection between the insulated conductors when the burner is placed in position; and a suitable device for closing the electric circuit by hand, substantially as set forth.

SVEND MARTIN MEYER.

Witnesses:

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B. A. ITTNER.