

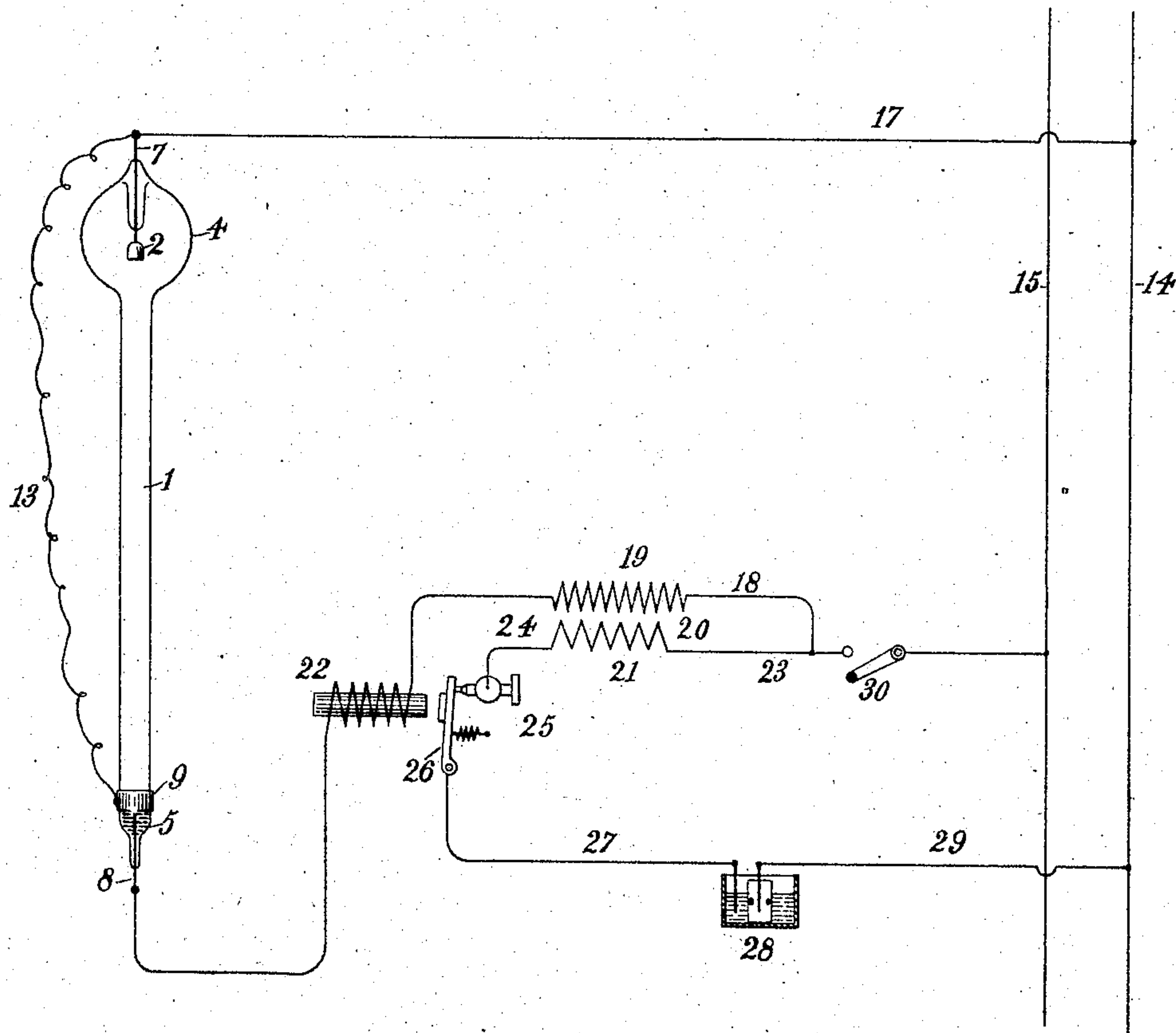
No. 780,998.

PATENTED JAN. 31, 1905.

P. C. HEWITT.

APPARATUS AND CIRCUITS FOR STARTING ELECTRIC LAMPS.

APPLICATION FILED APR. 5, 1900.



Witnesses:

Raphael Ketter
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UNITED STATES PATENT OFFICE.

PETER COOPER HEWITT, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO COOPER HEWITT ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

APPARATUS AND CIRCUITS FOR STARTING ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 780,998, dated January 31, 1905.

Application filed April 5, 1900. Serial No. 11,614.

To all whom it may concern:

Be it known that I, PETER COOPER HEWITT, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Apparatus and Circuits for Starting Electric Lamps, of which the following is a specification.

The invention relates to certain improvements in the construction of apparatus and organization of circuits for starting and operating electric lamps of the gas or vapor type, such as described in the application filed by me April 5, 1900, Serial No. 11,605. In the operation of such electric lamps having a vapor or gas path so organized as to receive currents of considerable quantity at moderate electromotive forces it is found desirable in some instances to start the lamp by the application of electric currents of higher potential than those employed for the continued operation of the lamp. I have found it convenient in some instances to use interrupted currents derived from the same source as the currents employed for running the lamp and to induce by the interrupted currents the electric currents of the higher potential. It is usually desirable to cut out of circuit the apparatus employed for producing the higher-potential starting-current when it has performed its function of starting the lamp.

The accompanying drawing illustrates an organization of circuits and apparatus for starting the lamp.

Referring to the drawing, a lamp is represented consisting of a gas-containing chamber 1, shown in the present instance as having an enlargement 4 at its upper end constituting a cooling and impurity-containing chamber. At or near the upper end of the lamp there is placed an electrode 2, connected with a leading-in wire 7. An electrode 5 at or near the other end of the lamp is connected with a leading-in wire 8. A conductor—such, for instance, as a band of foil 9—is shown as being placed around the lamp near the electrode 5 and connected by a conductor 13 with a leading-in wire 7.

The conductors 14 and 15 represent the two main wires of a system of electric distribution. A conductor 17 leads from the conductor 14 to the leading-in wire 7. A conductor 18 leads from a conductor 23, through the secondary coil 19 of a converter 20 and also through the coils of an electromagnet 22, to the leading-in wire 8. The conductor 23 leads from the conductor 15 to one terminal of the primary coil 21 of the transformer 20. The remaining terminal of this coil is connected by the conductor 24 with the back contact-stop 25 of the armature 26 of the electromagnet 22. A conductor 27 leads from the armature 26 to one terminal of a suitable circuit-interrupter 28. The other terminal of this circuit-interrupter is connected by the conductor 29 with the main conductor 14. A switch 30 may be included in the conductor 23. Assuming that the switch 30 is closed, current will pass through the interrupter 28 and the primary coil 20 of the converter, the interrupter serving to make and break the circuit with the proper rapidity. The higher-potential current will then be produced in the secondary coil 19, and this higher potential acting upon the vapor or gas path within the lamp creates the proper condition for permitting the passage through the lamp of currents supplied by the main circuit 14 15. When the lamp commences to operate, the magnet 22 will be energized, drawing forward the armature 26, and thus opening the circuit of the primary coil 21. The lamp will then continue to operate under the influence of the currents supplied directly from the main circuit. The lamp may be turned off by opening the switch 30. In the specification the device 20 is referred to as a "transformer," and it is to be understood that by this term any suitable device for changing the existing potential of the circuit is intended.

The invention claimed is—

1. The combination with a translating device, of a transformer having two coils connected with each other, one coil being permanently connected in series with the translating device and the other in shunt upon the source,

means for closing and opening the circuit of the second coil for inducing a higher potential in the series coil, an electromagnet in series with the translating device and the last-named coil and an armature for said electromagnet, the said armature being normally included in the circuit of the shunt-coil, whereby on the passage of current through the translating device, the circuit of the shunt-coil will be opened and will remain open during the operation of the device.

2. The combination with a vapor electric apparatus, of a transformer having two coils connected with each other, one coil being permanently connected in series with the vapor electric apparatus and the other in shunt upon the source, means for closing and opening the

circuit of the second coil for inducing a higher potential in the series coil, an electromagnet in series with the vapor electric apparatus and the last-named coil and an armature for said electromagnet, the said armature being normally included in the circuit of the shunt-coil, whereby on the passage of current through the vapor electric apparatus, the circuit of the shunt-coil will be opened and will remain open during the operation of the apparatus.

Signed at New York, in the county of New York and State of New York, this 26th day of March, A. D. 1900.

PETER COOPER HEWITT.

Witnesses:

WM. H. CAPEL,
CHARLES B. HILL.