(No Model.)

C. J. VAN DEPOELE.

INDUCTORIUM.

No. 266,735. Patented Oct. 31, 1882.

Fig. 1

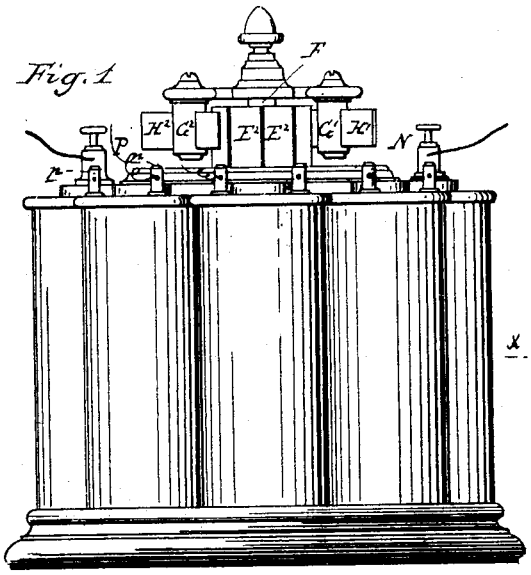


Fig. 3

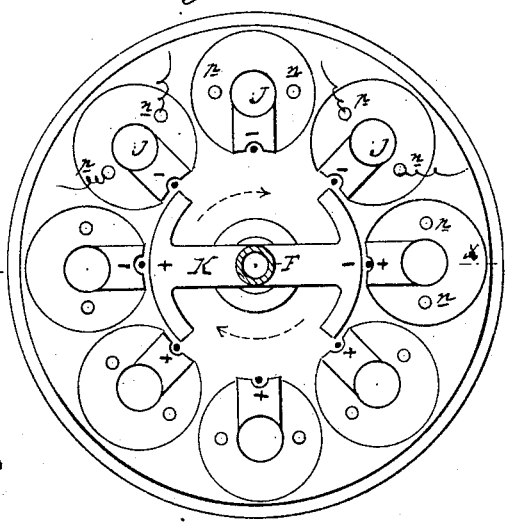


Fig. 2

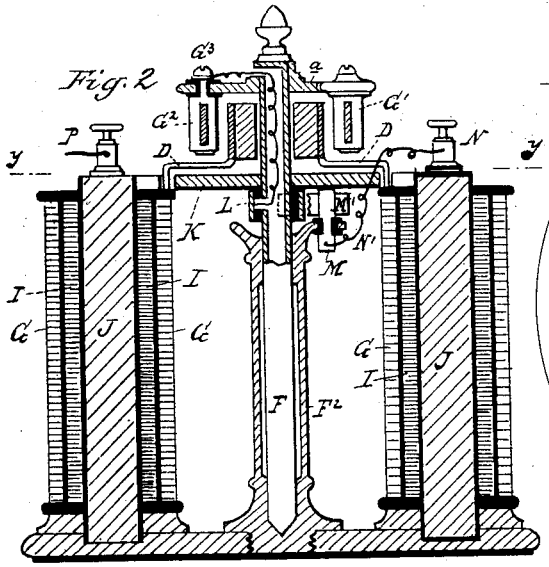


Fig. 5

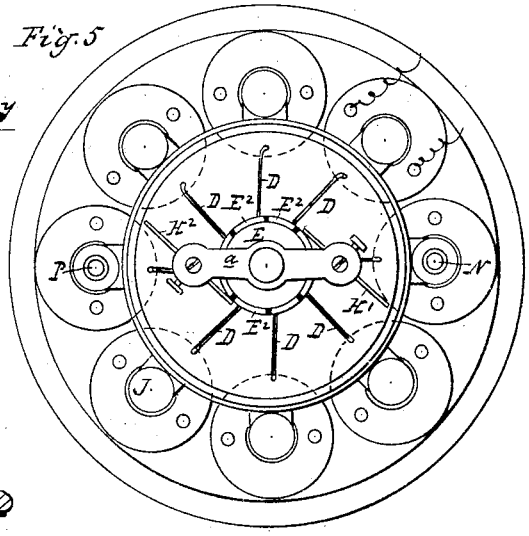
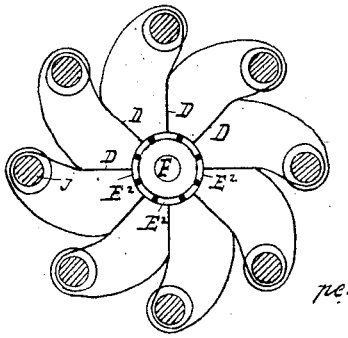


Fig. 4



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UNITED STATES PATENT OFFICE.

CHARLES J. VAN DEPOELE, OF CHICAGO, ILLINOIS.

INDUCTORIUM.

SPECIFICATION forming part of Letters Patent No. 266,735, dated October 31, 1882.

Application filed August 2, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHAS. J. VAN DEPOELE, of Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Inductoriums; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

The nature of this invention relates to certain new and useful improvements in the construction and operation of a device for the purpose of producing separate or combined currents of electricity to be used for electric-lighting purposes, the primary current being furnished by a distant generator, producing alternate currents in properly-disposed secondary bobbins not electrically connected with the main current.

The invention consists in the peculiar construction and operation of the device, which I term an "inductorium," as more fully hereinafter described.

Figure 1 is an elevation of my improved inductorium in readiness for use. Fig. 2 is a vertical section of the same on the line *x x* in Fig. 3. Fig. 3 is a horizontal cross-section on the line *y y* in Fig. 2. Fig. 4 is a diagram showing the primary connections. Fig. 5 is a plan view looking at the top.

In the accompanying drawings, which form a part of this specification, G are coarse-wire induction-coils, which will receive the primary current from some source of electricity, it being understood that such current must be continuous, and can be sent from house to house from a distant generator. I are the fine-wire coils, in which the induced or secondary current is formed or produced, the inner and outer terminals of said coils being attached to binding-posts *p n* of each individual coil, whence the current can be led by suitable connections to the work to be done. The secondary coils I are wound upon a soft-iron core, J, and the primary coils G are wound outside the secondary coils, insulating material being placed between them. A series of these spools of even number—say eight—are arranged in a circle upon a suitable base and secured thereto, and the upper end of each one of the coils is provided with the binding-posts *p n*.

F^2 is a tubular socket-standard, screwed or otherwise secured into the base, and supports a spindle, F, upon which is secured a bar-magnet, K. This spindle projects above the magnet K, which latter may be either electro or permanent, although the former is preferable. Sleeved upon this spindle, above the magnet, is a hub, E, made of some insulating material, upon which the commutator-plates E^2 are secured, these plates being of the same number as the bobbins in the group, and to each section of the commutator there is connected the primary circuit of one of the bobbins by means of the connecting-wires D, which also support the hub in its position. Secured near the upper end of the spindle, which is hollow at least for a portion of its upper end, is a bar, *a*, to each end of which is attached a brush-holder, the one marked G′ being in electrical connection with such bar, while the one marked G^2 is insulated, as shown at G^3. These brush-holders carry the brushes H′ H^2 in contact with the sections of the commutator.

When the parts described and to be described are all in position and the whole device ready for operation and suitably connected with the primary circuit, the magnet K and the brush-holders, which are secured, as described, to the spindle F, rotate with great rapidity, said spindle being stepped in the tubular standard for that purpose. The brush-holder G^2 is in electrical connection with a commutator, L, which is secured upon the spindle below the magnet K by a suitable conductor passing through the hollow portion of the spindle. A brush-holder, M, is secured to the top of the socket-standard, and carries a brush, M′, which has contact with the ring L. This brush-holder M is insulated from the general frame of the machine, and suitably fastened at the top of the socket-standard.

N′ is a wire conductor, connecting with the binding-post N. (Shown in Fig. 1.) The binding-post P is in electrical contact with the general frame, while the other one, N, is insulated therefrom. The negative conductor of a dynamo or other source of electricity is connected to the post N, and the positive conductor connected to the post P. The current enters this latter post, which is in contact with the iron core of one bobbin, which is secured in the metallic base, through which the current passes to the socket standard and spindle. The latter,

being in metallic contact with the brush-carrier G′, allows the current to pass through the brush H′ to the commutator E^2, which is connected to the coils G, and as this brush passes only on one side or section of said commutator the current is conveyed through all the bobbins (in double arc) at the same time, and on making contact with the insulated brush H^2 the circuit will be completed. Now it will be understood that since the magnet K is polarized it will be attracted to the several poles of its opposite polarity, and begin to rotate with great velocity when the brushes are put in their proper connection with the commutator. Thus a speed can be easily obtained of three or four thousand revolutions per minute. It will also be understood that since all the primary circuits are connected together, as shown at Fig. 4—that is to say, the inner end of one coil is connected to the outer end of the next through the whole group—the current is never broken by the brush traveling over the commutator, since the current is merely shifted around in direction from one bobbin to the other, so that no sparks are observed at the brushes. It is this rapid change of polarity in the several bobbins which I make use of to induce currents in the secondary coils I. Thus it will be seen that I can make practical the application of a continuous current to produce independent alternate currents of higher or lower potential, as may be required, by proportioning the capacity of the primary and secondary circuits. The speed can easily be regulated by means of a current-regulator or by means of the governor upon which I have already secured Letters Patent.

By the use of the above-described inductorium electricity can be distributed from house to house by simply locating at each place an apparatus of the proper size. Each one of the bobbins will produce one or more lights of such size as is needed, the currents being furnished from a station and distributed to consumers.

What I claim as my invention is—

1. An inductorium composed of an equal number of independent induction-coils, having all the primary circuits connected with one another, so that the inner end of one coil is electrically connected to the outer end of the next through the whole group, and in which the outer end of the first coil is connected to the inner end of the last coil in the group, substantially as and for the purpose described.

2. An inductorium having all the primary coils connected together, as described, and to corresponding sections of a stationary commutator, provided with conducting-brushes whereby on passing the conducting-brushes connected to the source of electricity on opposite sides of said commutator one half of the coils in the group will present north and the other half of said coils south polarity, and on further moving said brushes around said commutator the polarity in the group of coils will be constantly changed or shifted as long as the brushes are traveling, whereby alternating currents are induced in the secondary coils, substantially as and for the purposes specified.

3. An inductorium having a stationary commutator with insulated sections corresponding to the number of induction-coils in a group, each section of said commutator being permanently connected to the primary of one of said induction-coils, the primary circuits being connected with each other in a continuous series, in combination with positive and negative conducting-brushes, leading a current of electricity through said group of coils, such brushes being adapted to revolve around said sectional commutator, and thereby to continually change the polarity of the coils without breaking the circuit, thus avoiding all sparks and allowing the use of continuous primary currents of any desired strength, substantially as described.

4. An inductorium having a stationary commutator connected to the primary coils, connected in a continuous series, as described, and having cores inclosed within said coils, in combination with suitable positive and negative conducting-brushes mounted on a central axis, and a permanent or electro magnet mounted on the same central axis and adapted to be rapidly rotated, together with the said brushes, by the attraction of the cores, caused by their shifting polarity during the progressive passage therethrough of a continuous main current, substantially as described.

5. The combination of the group of induction-coils secured around and connected to a stationary central commutator, the centrally-placed rotating axis carrying conducting-brushes, and a suitable actuating-magnet operated by the shifting polarity of the cores of said induction-coils, and a ring for conveying the negative current through the machine to one of its rotating conducting-brushes, substantially as described.

CHARLES J. VAN DEPOELE.

Witnesses:

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AARON K. STILES.