(No Model.)

G. W. DURBROW.

APPARATUS FOR DISTRIBUTING ELECTRICAL CURRENTS.

No. 297,072. Patented Apr. 15, 1884.

Fig. 1.

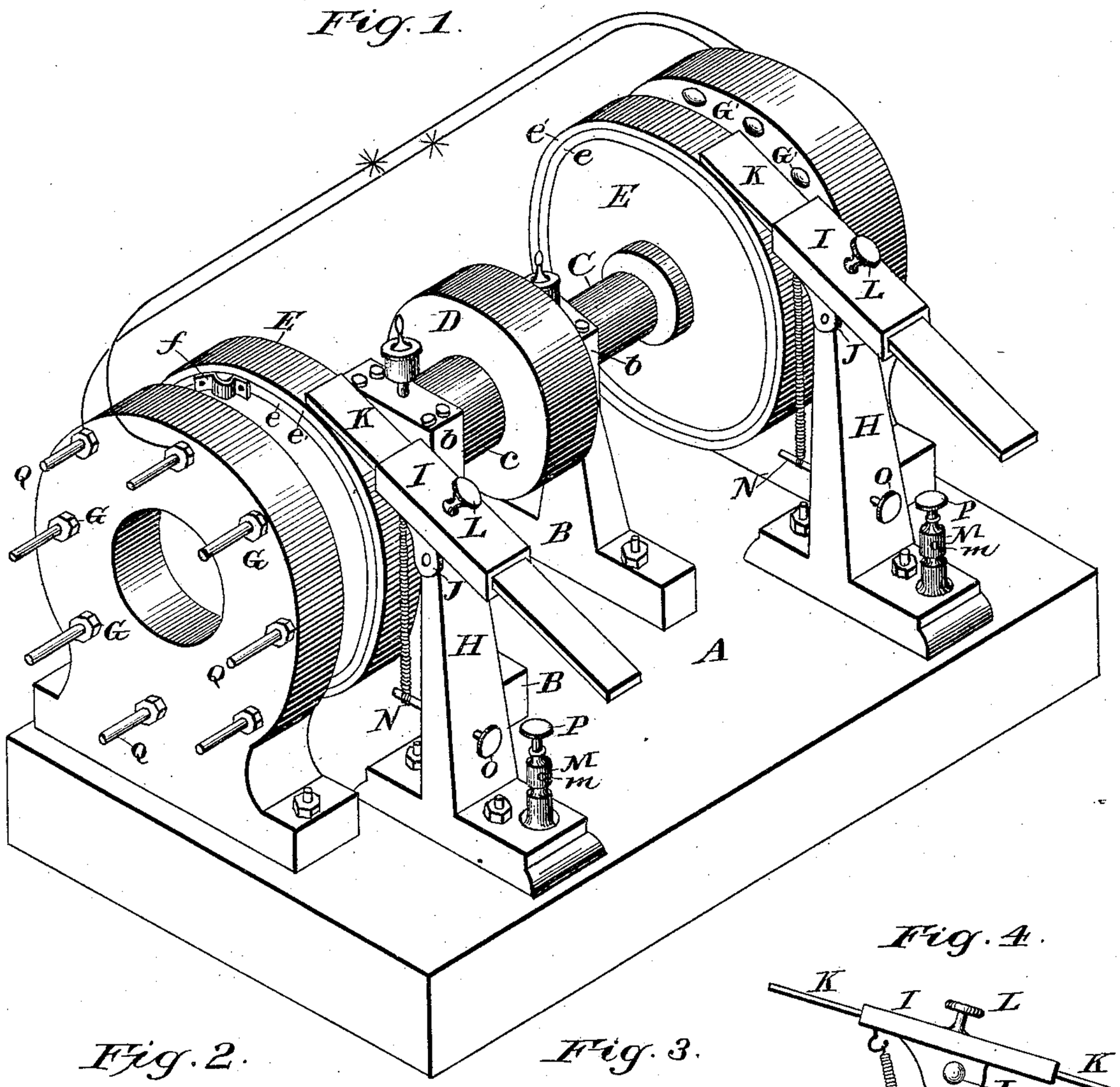


Fig. 2.

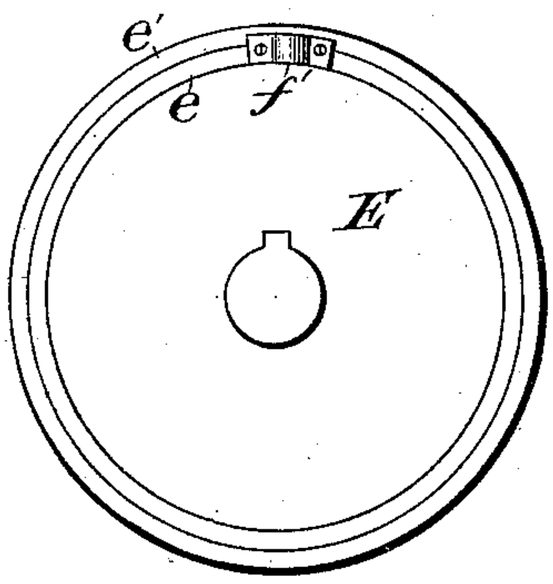


Fig. 3.

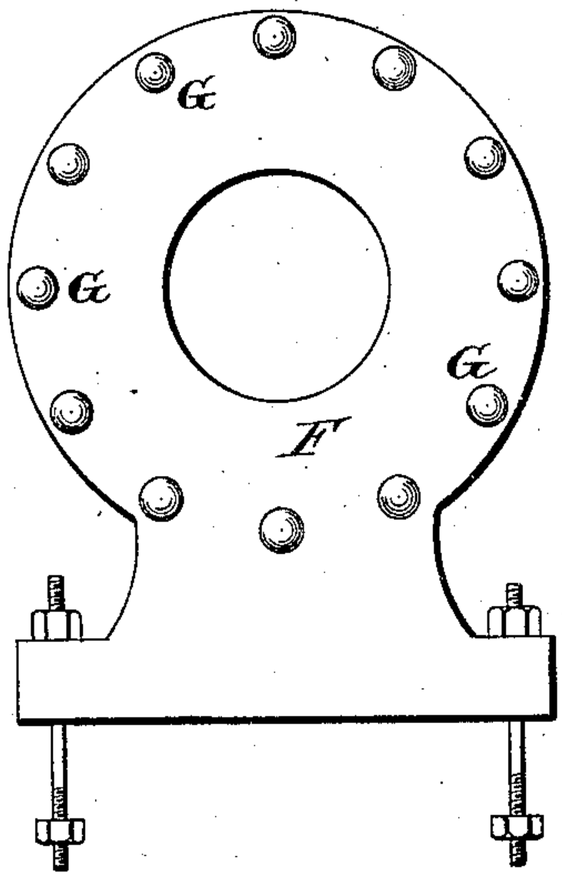
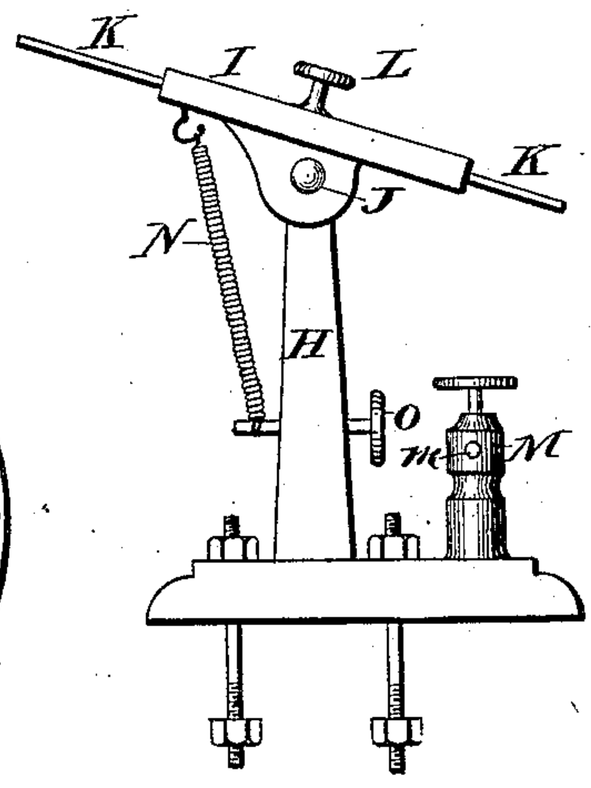


Fig. 4.



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APPARATUS FOR DISTRIBUTING ELECTRICAL CURRENTS.

SPECIFICATION forming part of Letters Patent No. 297,072, dated April 15, 1884.

Application filed April 12, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. DURBROW, a citizen of the United States, residing at the city of Portland, in the county of Multnomah and State of Oregon, have invented a certain new and useful Machine for Distributing Electricity, of which the following is a specification.

My invention relates to a machine for distributing electricity, which will be operated by suitable motive power, and specially adapted to be used with systems of electric lighting by incandescence or otherwise, and it can be used in connection with telegraphing, telephoning, or in any of the uses to which electricity is applied.

The peculiar feature of the machine is that a current can be divided up into as many circuits as there are contact-points on the machine, and operated all at the same time, or singly, or any certain number, without interfering with or diminishing the power of the other circuits, and maintaining a steady continuous current in each individual circuit.

Q Q are the projecting ends of the contact-points, to which the circuit-wires are to be attached.

In the accompanying drawings, forming part of this specification, Figure 1 is a view in perspective of my invention, showing the entire machine. Fig. 2 is an end view of one of the revolving disks. Fig. 3 is a similar view of the mounted disks, and Fig. 4 is a view in perspective of the standards and brushes.

A represents a platform or table upon which the machine is built, made of wood or any other insulating material.

B B are two standards securely fastened to the platform A by suitable means, their upper ends being provided with journal-boxes *b b*. In these boxes *b b* is located shaft C, revolving therein; and D is a drive or band pulley keyed or suitably fastened upon shaft C, and may be of any desired circumference, according to the rate of speed desired. Shaft C is prevented moving endwise in the boxes *b b* by means of collars *c c*, formed upon it.

On each end of shaft C are securely fastened disks E E, made of hard rubber, wood, or other insulating material, and varying in diameter in accordance with the number of contact-points upon the mounted disks, hereinafter referred to. They are constructed of a suitable thickness, the proportions depending upon the number of contact-points used with the machine. These disks E E are carefully fastened on the shaft C by key or other suitable device, and they are turned off with the shaft, so as to run perfectly true with it. Upon the periphery of each of these disks E E are placed brass rings *e e*, of suitable thickness, and the same width as disks E E, and they are turned off with the shaft C, in order to run perfectly true with it.

On top of and around brass rings *e e* are placed copper rings *e' e'*, one on each disk E E, of suitable thickness, and of the same width as disks E E. They are securely fastened to the brass rings *e e* by machine-screws. They are also turned (as the brass rings *e e* are) to run true with the shaft. Onto these rings *e e e' e'* are fastened two springs, *f f'*, one on each disk E. These springs *f f'* are in good electrical contact with the copper and brass rings, and are so bent as to press firmly on and cover one or more of the contact-points G G at the same time. The disks E E are so set on shafts C that the springs *f f'* are directly opposite each other on the same side of shaft C.

In front of disks E E there are firmly fixed to the platform A two mounted disks, of hard rubber, wood, or other suitable material, F F, as shown in Figs. 1 and 3 of drawings. Upon these disks F F are inserted the contact-points G G', their number being two or more. That, however, depends altogether upon the number of circuits to be run with the machine. These contact-points G G' are placed at even distances apart on the two disks F F, on circles of equal radius, and are so set on the platform A that contact-point G will be directly opposite contact-point G', and so on around the series, so that when spring *f* is in contact with the contact-point G the spring *f'* will be in contact with the contact-point G'.

On the platform A, in front of each disk E E, is a distributing-brush, K, as shown in Figs. 1 and 4. These brushes are securely fastened to the platform A, but very carefully insulated from it. Each brush consists of a cast-iron or brass standard, H, (see Figs. 1

and 4,) of such height that the brush K can easily rest on copper rings c' c', and should be of the same width. On top of this standard H is a brush-holder, I, made of brass or other good metallic conductor, and turning on a steel pivot at J, allowing the brush K to move in a circle. The brush K is preferably made of copper wire, and securely clamped in brush-holder I by means of the clamping-screws L.

M is the binding-post, through the aperture *m* in which is conducted the negative or positive wire of a generator of electricity.

Attached to brush-holder I is a spiral spring, N, which is attached at its lower end upon thumb-screw O.

P is the thumb-screw which is in the binding-post M to hold the generator-wire. The wires forming the contact-points will be made of brass or other metal.

The operation of my machine is as follows: The two wires from the source of the electric current are brought to the binding-posts M M on the two distributing-brushes K K. The circuits to be run by the machine are taken from the contact-points G G′ on the mounted disks F F′. Each circuit should start from one contact-point on one of the mounted disks F F′ and end in the contact-point directly opposite on the other standard. On each circuit are placed the electric lamps or other instruments intended to be run by the current. These circuits are artificially adjusted by means of rheostats, so as to have practically the same resistance, and hence make the current about equal in all the circuits. All the circuits may be worked at one time, or they may be worked singly; or any number may be worked up to the capacity of the machine. Motion is given to the shaft C by means of a belt running on pulley D from any steady source of power. The shaft C is run at different speeds, depending on the size of machine, but should run fast enough to prevent any apparent unsteadiness of the current arising from the rapid breaks in case the spring should touch only one contact-point. The distributing-brushes K K should press firmly on the copper rings c' c'. The course of the current would be as follows: from the source of the electricity to one binding-post M on standard H of distributing-brush K, thence to the copper ring on disk, thence to the contact-point which the contact-spring touches, and from there to the line-circuit. Making the circuit of the line, it returns to contact-point directly opposite to the one it started from, thence to contact-spring, to copper ring, to distributing-brush, to binding-post, to the starting point. Now, if the shaft C is revolved fast enough, the current will pass, if all the circuits are closed, successively through all of them without any perceptible unsteadiness. If only part of the circuits are closed, the current will pass through those circuits and no effect will be produced on the others. The circuits may be broken or connected at will by a key operating on the connecting-wire which connects with the contact-point.

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

1. In a machine for distributing electricity, the disks E E, provided with rings *e e e′ e′* and springs *f f′*, rotating on a shaft, in combination with mounted disks F F′ and contact-points G G′, whereby an electric current can be divided up into as many circuits as there are contact-points, operating as shown, and for the purpose described.

2. In combination with platform A, standards B B *b b*, shaft C, having thereon disks E E *e e e′ e′*, provided with springs *f f′*, and mounted disks F F′, having contact-points G G′, distributing-brushes K K, pressing upon disks E E, and suitably mounted in standards H H′, and adapted to be held firmly against disks E E by spiral springs N, for the purpose set forth.

3. In combination, disks E E, rotating upon shaft C and suitably connected, standards H H, brush-holders I, and distributing-brushes K K, adapted to receive and transmit an electric current from binding-post M to the contact-points G G′ upon disks F, for the purpose set forth.

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