

G. B. PENNOCK.
ELECTRIC LIGHTING SYSTEM.

No. 510,188.

Patented Dec. 5, 1893.

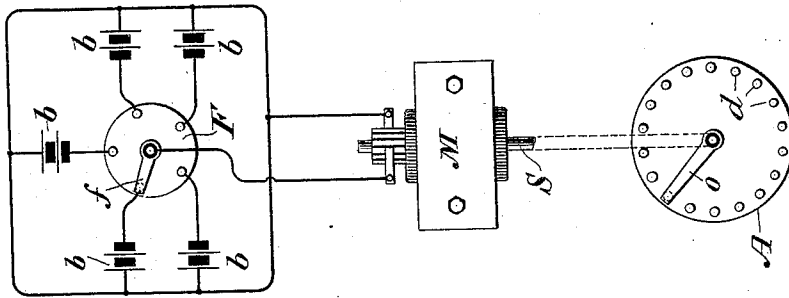


Fig. 2.

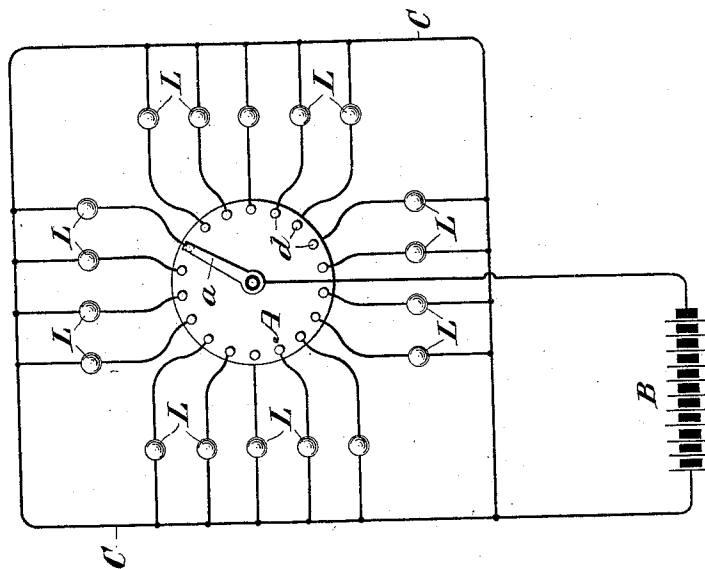


Fig. 1.

Witnesses
C. E. Ashley
John P. Nordstrom

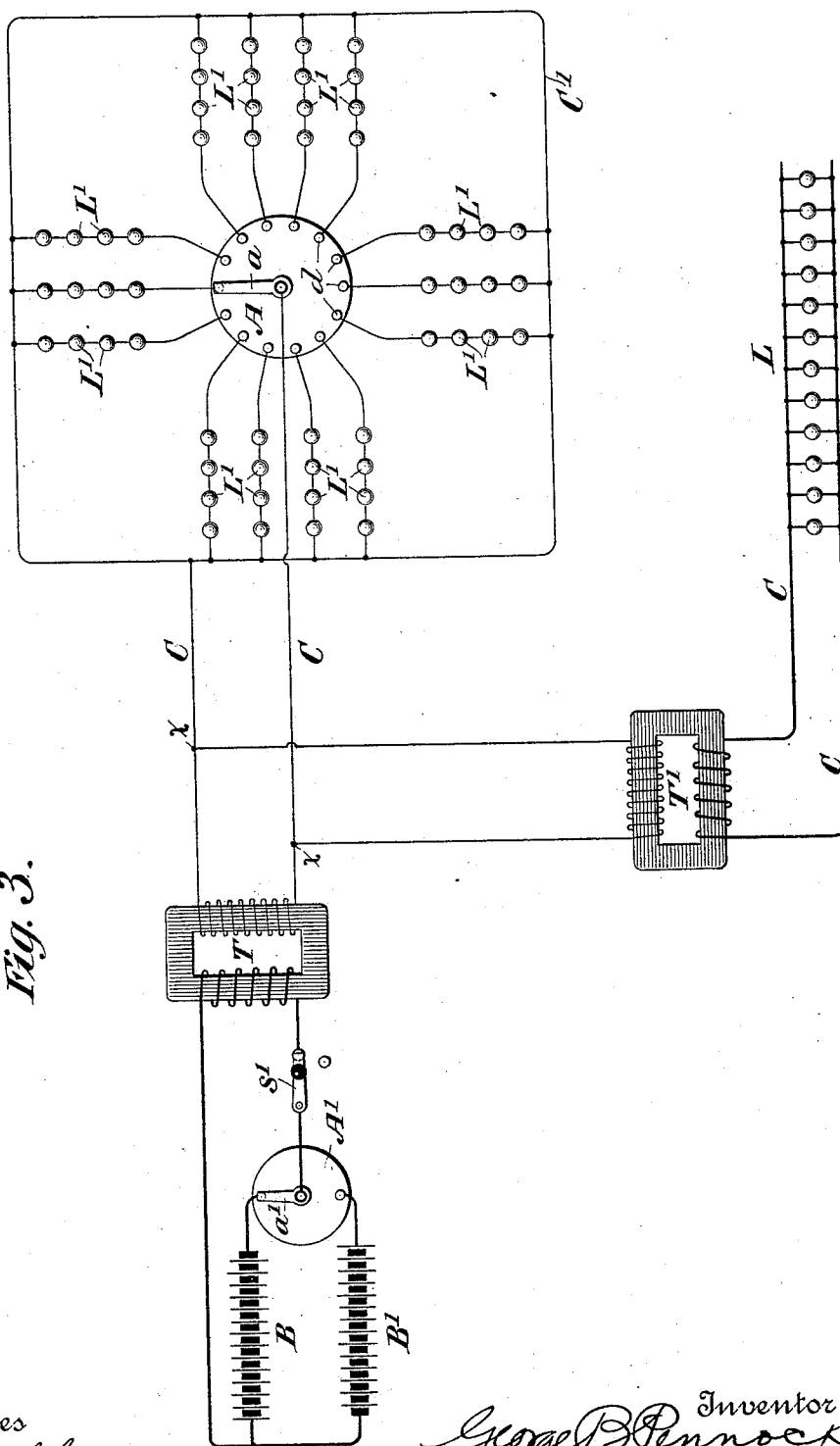
Inventor
George B. Pennock
By his Attorney *J. B. Sabine*

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Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE B. PENNOCK, OF CHICAGO, ILLINOIS.

ELECTRIC-LIGHTING SYSTEM.

SPECIFICATION forming part of Letters Patent No. 510,188, dated December 5, 1893.

Application filed February 20, 1893. Serial No. 462,979. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. PENNOCK, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Electric-Current Distributors, of which the following is a specification.

The object of my invention is to provide a means of distributing an electric current from the same source of supply to a number of distinct and independent electric circuits, for the purpose of supplying lamps, motors, &c., with currents of the necessary electro motive force, so that no matter what change is made in one circuit it will have no effect in or on any of the other circuits and no matter at what potential the current is kept in one circuit an altogether different potential can be kept in the other circuits depending altogether on the resistance of each individual circuit. I attain this object, first, by means of a rapidly rotating mechanism arranged to send a current of electricity through a number of different circuits in rapid succession, combined with any source of electric power but preferably with a primary battery or batteries; combined with transformers, thus being able to furnish high potential currents for series circuits and low potential currents for multiple arc circuits at one and the same time from the same source of supply.

I show in the accompanying drawings, which are made a part of this specification, different ways of combining circuits in order to accomplish this object, and in which—

Figure 1 shows the rotating or distributing device, a number of lamp circuits connected to a primary battery, one pole of which is shown as connected to the rotary arm, and the other to the general return circuit. Fig. 2 shows the rotary arm of the distributor connected to the shaft of a small motor which in turn is connected to and controlled by means of primary batteries that are thrown in or out of circuit by means of an automatic battery changer, for which I was granted Patent No. 422,438 on March 4, 1890. Fig. 3 gives a good illustration of the practicability of supplying a number of series and multiple arc circuits from the same batteries by means of the arrangement of distribution shown in Fig. 1 com-

bined with transformers arranged to change from large quantity and low potential to high potential and small quantity, and vice versa. 55

Again referring to Fig. 1, *a* represents a rapidly rotated metal arm arranged to come in contact in rapid succession with a number of metal disks or segments *d d* arranged in a circle on a fire-proof non-metallic plate *A* such as slate, marble or similar substance. In this figure are also shown a number of electric lamp circuits, one end of each circuit connected to one of the segments *d*, and the other end to a general return wire. The battery *B* is connected, as shown, one pole to the general return wire and the other to the rotating arm. Now, by rotating the arm *a* very rapidly a current of electricity is kept flowing through the different circuits without any appreciable break, and, as the circuits are completely independent of each other, the resistance and current in each circuit can be regulated to suit its individual requirements irrespective of the others and the throwing on or off the lamps in one or more of the circuits will have no effect on the lamps in the remaining circuits. 60 65 70 75

In Fig. 2 arm *a* is shown as connected to shaft *S* of the small electric motor *M* which is arranged to rotate arm *a* with the necessary speed. Motor *M* is in turn controlled by batteries *b b* which are turned on or off, as desired, by automatic battery controller *F* (covered by former patent). 80 85

The more difficult problem and the one I claim I have solved is that of supplying lamps in both series and multiple arc circuits from the same battery or source of electric power, by taking two batteries *B* and *B'* of low potential and different polarity and by connecting them to the rapid alternator *A'* and sending a current of low potential but large quantity through the low resistance side of transformer *T* where it is changed to a high potential and small quantity and thus furnished to alternator *A* to supply the series circuits. Now, to supply the multiple arc circuits I connect the high resistance coil of a second transformer *T'* to circuit *C'* at *x* and by connecting the low resistance coil of this transformer to a second circuit, am enabled to supply the lamps arranged in multiple arc with the necessary low potential current. Switch 90 95 100

S' is intended to break the battery circuit when desired.

It has been ascertained by practice that, while it takes more than twice as much current through the rapid distributor, as when the lamps are connected direct to the battery, to bring the lamps to the same candle power, yet when the lamps once reach the desired candle power, any number of circuits can be attached to the distributor without in any way affecting the source of supply or the current in the other circuits, providing always that the distributor is maintained at the necessary speed.

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

1. The batteries B and B' and rapid alternator A' in combination with transformers T and T', rapid distributor A and lamp circuits C and C', all substantially as, and for the purpose, set forth.

2. The batteries B, and B', the rapid alternator, A', and the transformers T and T', in combination with rapid distributor A, and lamp circuits C, and C', all substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 8th day of February, A. D. 1893.

GEORGE B. PENNOCK.

Witnesses:

ALBERT STIFFERS,
L. A. MCCARTHY.