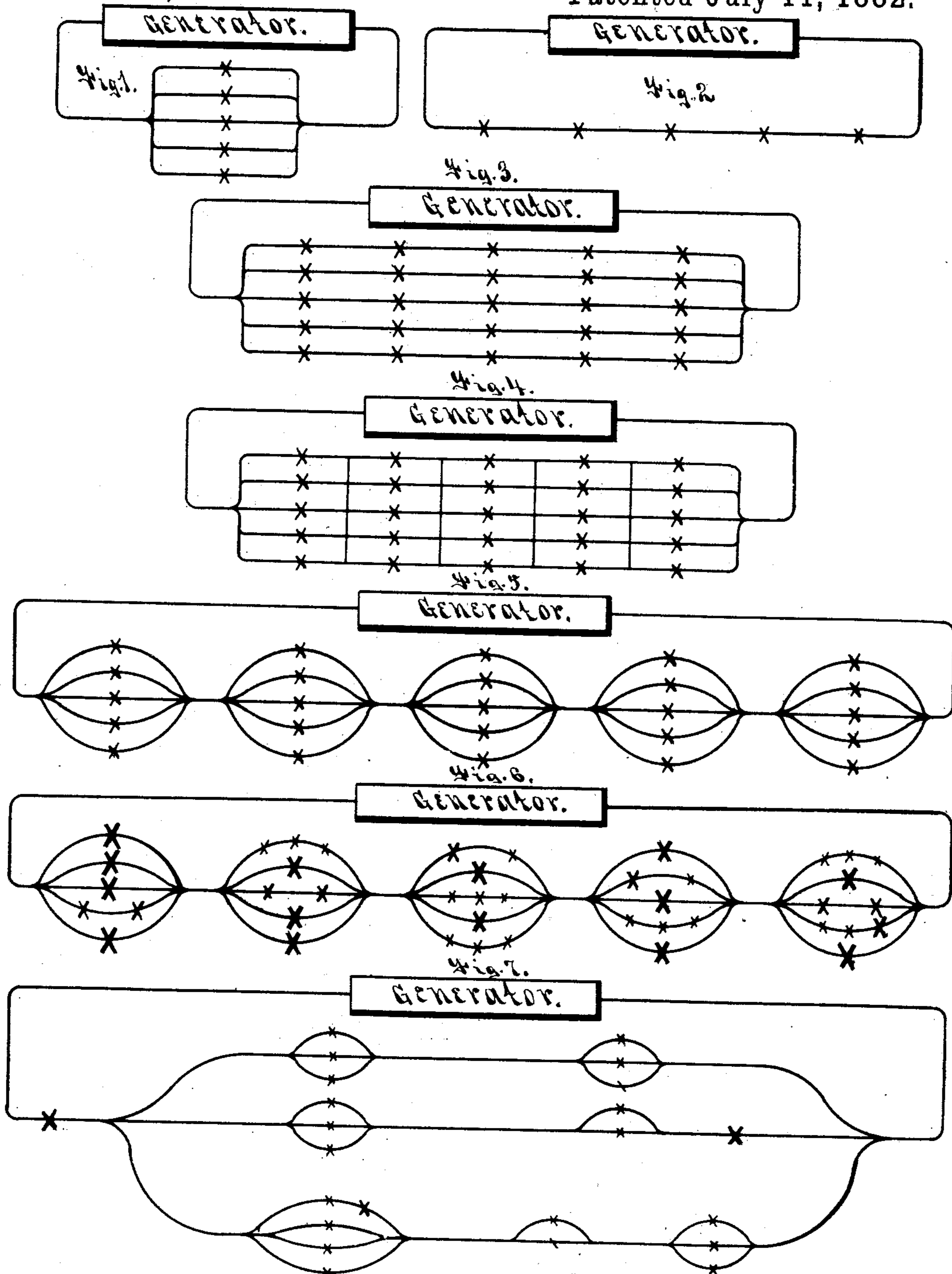


(No Model.)

C. F. BRUSH.
ELECTRIC CIRCUIT SYSTEM.

No. 261,077.

Patented July 11, 1882.



WITNESSES

X x Indicate points of application of current.

INVENTOR

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UNITED STATES PATENT OFFICE.

CHARLES F. BRUSH, OF CLEVELAND, OHIO.

ELECTRIC-CIRCUIT SYSTEM.

SPECIFICATION forming part of Letters Patent No. 261,077, dated July 11, 1882.

Application filed June 4, 1880. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. BRUSH, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Electric-Circuit Systems; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to a system of electric circuits for electric-lighting and electric-engineering purposes.

Figure 1 of the drawings indicates a common method of dividing an electric current so as to utilize its energy simultaneously at several points. Fig. 2 illustrates another well-known method of arriving at the same result. Fig. 3 shows a well-known combination of the two preceding methods. Fig. 4 shows the arrangement of circuits constituting my invention. Fig. 5 shows an arrangement of circuits equivalent to that in Fig. 4. Fig. 6 shows two or more minor applications of current at one or several principal points. Fig. 7 indicates how my invention may be modified and indefinitely extended.

The well-known method shown in Fig. 1 of dividing an electric current so as to utilize its energy simultaneously at several points possesses the advantage that if one or more of the branches of the electric circuit become broken the remaining branches remain intact, while it has the disadvantage of requiring a current of comparatively-low electro-motive force and large volume, necessitating large conductors and entailing much loss of energy when the points of application are far removed from the source of current. The plan shown in Fig. 2 has the merit of requiring a current of comparatively-high electro-motive force and small volume, capable of traversing long conductors of small size with comparatively little loss of energy, while it entails the disadvantage that if the circuit is broken at one of the points of application of the current the latter is interrupted at all points.

Fig. 3 shows a combination of the methods already described, consisting of a multiplication of the second method. This plan is evi-

dently a compromise between the advantages and disadvantages of the two former ones, and is superior to either. It is the one commonly employed in telegraphy, where several lines, each operating several instruments or electric engines, are worked by a single battery.

My invention consists in the improvement of the third method described, whereby the full advantage of the first method is secured to it.

Fig. 4 illustrates my arrangement of circuits for and of points of application of an electric current. This system is evidently a multiplication of the first method; but it possesses advantages not heretofore obtained in any system of circuits. By this method currents of high electro-motive force and of consequent easy transportation may be utilized simultaneously at many points, while the interruption of the current at any one or several of these points (provided they be not all in any one vertical series of points, indicated in the diagram Fig. 4, which is a remote contingency) will not materially affect the current at any other point.

Fig. 5 shows my invention in more intelligible form and as practically employed.

The current may be utilized at any of its points of application in the development of light, heat, chemical action, motive power, or any purpose for which a current is desired; and it may be employed for different purposes at different points, or for several different purposes at any or each of its principal points of application. Such an arrangement as last indicated is shown in Fig. 6, wherein two or more minor applications of the current are made in one or several of its branches. Obviously the total consumption or utilization of current need not be the same in all branches of the circuit, but may differ widely at different points.

As already indicated, Fig. 7 shows how my invention may be modified and extended indefinitely.

My system of electric circuits may be employed in the distribution of electricity for lighting or other purposes in rooms, buildings, blocks of buildings, streets, and whole cities. By its means portions of the same current may be independently and simultaneously employed, for the same or different purposes, in

many different and widely-separated localities.

What I claim is—

1. A system for transmitting electric currents to translating devices, consisting essentially in an electrical conductor divided along its length into two or more series of paths or branches, each path or branch of each series being electrically connected at opposite ends with the main conductor and translating devices interposed in said branch circuits, substantially as set forth.

2. A system for transmitting electric currents to translating devices arranged in mul-

tiple-arc series, consisting of a single conductor split or divided into two or more branches electrically connected at their ends with the main conductor and electrically connected with each other at one or more intermediate points, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES F. BRUSH.

Witnesses:

LEVERETT L. LEGGETT,
JNO. CROWELL, Jr.