

A. SCHREIBER.

Improvement in Electro-Magnetic Motors.

No. 131,377.

Patented Sep. 17, 1872.

Fig. 3.

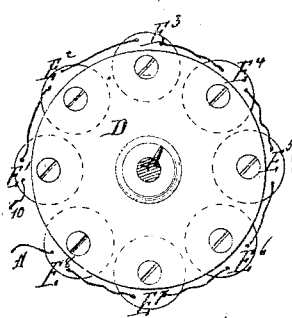


Fig. 1.

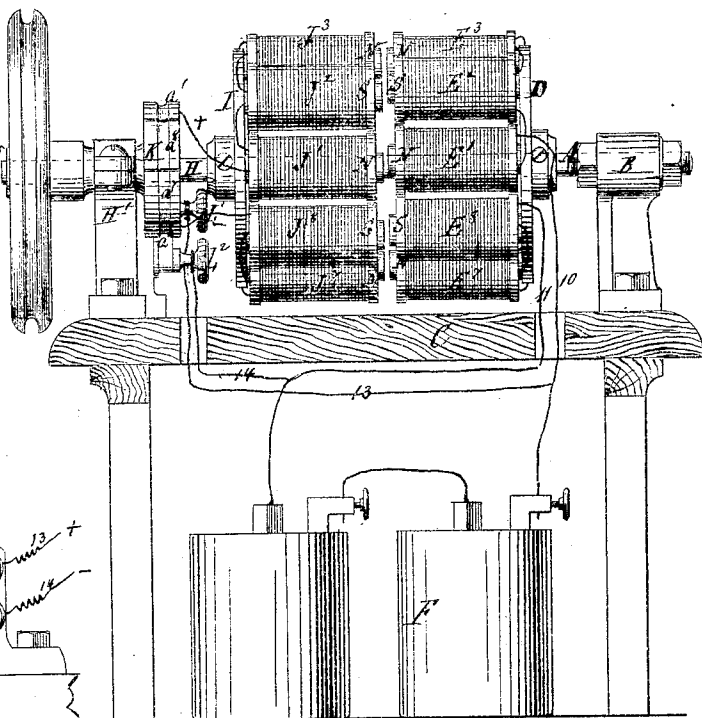


Fig. 4.

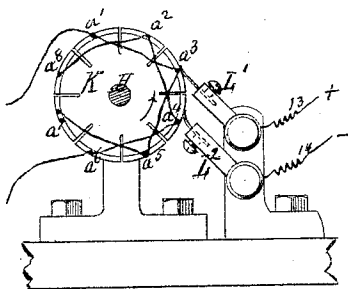
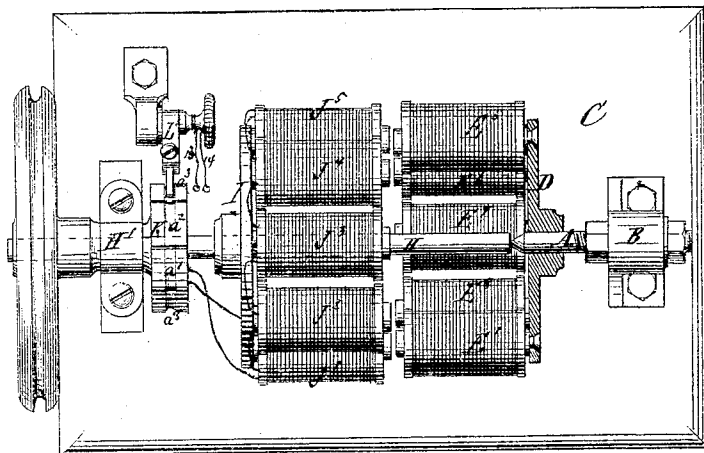


Fig. 2.



Witnesses.

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IMPROVEMENT IN ELECTRO-MAGNETIC MOTORS.

Specification forming part of Letters Patent No. **131,377**, dated September 17, 1872; antedated September 9, 1872.

To all to whom it may concern:

Be it known that I, ADOLPH SCHREIBER, of Brooklyn, E. D., in the county of Kings and State of New York, have invented a new and Improved Electro-Magnetic Motor; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a side view of this invention. Fig. 2 is a plan or top view of the same. Fig. 3 is an end view of one set of electro-magnets, showing their connection with each other. Fig. 4 is a transverse section of my apparatus showing the commutator.

Similar letters indicate corresponding parts.

This invention consists in the combination of two sets of electro-magnets with each other and with a commutator, one set of electro-magnets being mounted on a stationary pin opposite the other set, which is mounted on a revolving shaft, on which is also secured the commutator in such a manner that when currents of electricity are passed through both sets of electro-magnets, and the movable electro-magnets are so placed as to bring their poles opposite to the homonymous poles of the stationary electro-magnets, then, by the repulsion of the homonymous poles and by the attraction of the heteronymous poles, the movable electro-magnets are caused to revolve, and as the polarity of these electro-magnets is constantly changed by the commutator, a continuous revolving motion is imparted to the shaft carrying the movable electro-magnets. By connecting both sets of electro-magnets to one and the same battery the power of the motor is materially increased.

In the drawing the letter A designates a pin, which is secured in a standard, B, rising from a table, C, and on this pin is firmly secured a disk, D, on which are fastened a series of electro-magnets at equal distances apart. (See Fig. 3.) In the drawing I have shown eight electro-magnets, which I have designated by the letters E¹ E² E³ . . . E⁸, but the number of the electro-magnets may be greater or smaller, according to the diameter of the disk D and to the power desired. One end of the helix of the electro-magnet E¹ connects by a wire, 10,

with one—say the positive—pole of a galvanic battery, F, while the other end of said helix connects with the helix of the electro-magnet E², which connects with the helix of the next electro-magnet E³, and so on, while the end of the helix of the last electro-magnet E⁸ connects by a wire, 11, with the negative pole of the battery. By these means the poles of the electro-magnets E¹, E², E³, and E⁷ will be north, and those of the electro-magnets E⁴, E⁵, E⁶, and E⁸ will be south, as indicated by the letters N and S, marked, respectively, on said electro-magnets in Fig. 1. The end of the pin A is sharp pointed to catch in a hole bored in the center of a shaft, H, which is mounted in a standard, H', rising from the table C, so that it revolves freely in its bearings. On this shaft is mounted a disk, I, carrying a series of electro-magnets J¹ J² J³ . . . J⁸, which correspond in number and position to the electro-magnets E¹ . . . E⁸, and the helices of all of which are connected together, with the exception of those of the electro-magnets J¹ and J⁸, which are connected at one of their ends each to one of the sections of the commutator K. This commutator consists of a disk of wood or other non-conducting material, surrounded by a strip of metal, which is divided in a number of sections, a¹ a² a³ . . . a⁸, corresponding to the electro-magnets J¹ . . . J⁸, the sections a¹, a³, a⁵, and a⁷ being in metallic contact, (see Fig. 4,) and also connected to the end of the helix J¹, while the sections, a², a⁴, a⁶, and a⁸ are also in metallic contact with each other and connected with the helix J⁸. On the circumference of the commutator K bear two springs L¹ L², the spring L¹ being connected by a wire, 13, with the positive, and the spring L² by a wire, 14, with the negative pole of the battery. If the shaft H occupies the position shown in the drawing the poles of the electro-magnets J¹, J³, J⁵, and J⁷ are north, and those of the electro-magnets J², J⁴, J⁶, and J⁸ are south, and the homonymous poles of the electro-magnets E¹ . . . E⁸ repel those of the electro-magnets J¹ . . . J⁸, causing the shaft H to revolve. As soon as the commutator spring L¹ passes on the segment a⁴ and the spring L² on the segment a⁵, the current through the electro-magnets J¹ . . . J⁸ is reversed, and by the time the electro-magnets J², J⁴, J⁶, and J⁸ have advanced to the positions previously occupied by the electro-magnets J¹, J³, J⁵, and J⁷, the poles

have changed, those of the former to north and those of the latter to south. The motion of the shaft H, therefore, will continue without interruption. The pin A, which supports the electro-magnets E¹...E⁸, can be turned in its standard, and it will readily be seen that, by turning the same so that the electro-magnets E², E⁴, E⁶, and E⁸ will come in the position previously occupied by the electro-magnets E¹, E³, E⁵, and E⁷ the motion of the shaft H will be stopped, for in this case the south poles of the electro-magnets E¹...E⁸ would stand opposite the north poles of the electro-magnets J¹...J⁸, and vice versa; but, by turning the pin A to an intermediate position, the motion of the shaft H will only be retarded without being stopped entirely, and I am thus enabled to regulate the speed of my machine in a very simple manner and with the greatest nicety. It will be noticed that both sets of electro-magnets E¹...E⁸ and J¹...J⁸ are connected to the poles of one and the same battery, for I have found that, by using one and the same battery for both sets of electro-magnets, the power of my machine is materially increased. This phenomenon I am unable to explain, but

the fact is undoubted, and I expect, by further experiments, to detect or explain the cause producing this effect.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of two sets of electro-magnets with each other and with a commutator, one set of electro-magnets being mounted on a stationary pin opposite the other set, which is mounted on a revolving shaft, also carrying the commutator, substantially in the manner herein shown and described.

2. The method of regulating the speed of the machine by turning the stationary electro-magnets, substantially as set forth.

3. The combination of one single battery with two sets of electro-magnets, one stationary and the other movable, and with a commutator, substantially as described.

This specification signed by me this 19th day of February, 1872.

DR. ADOLPH SCHREIBER.

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.