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EDISON DYNAMO ELECTRIC LIGHT MACHINE.

Now that central stations for the lighting of districts are about to be erected in several parts of London, the subject of generators capable of giving powerful currents acquires a new interest, and at the same time the problem of driving them presses for solution. Hitherto a large installation has been little more than an assemblage within one building of several small ones driven from one or two counter-shafts, and thus it has come that such plants have presented an appearance of complication, and have further, from the creaking and rustling of the belts, given the idea that an immense amount of wear and tear was going on. It is quite certain that before large areas, employing many thousands of lights, can be supplied from one source, great alterations both in the sizes of the generators themselves, and in the means of transmission, will have to be made before practical success is attained.

The earliest and most enthusiastic advocate of district lighting was Mr. Edison, and although his anticipations have not been realized with the rapidity he predicted, yet his system is spreading rapidly in the States, where the company engaged in carrying it out has obtained greater experience of town lighting than any firm in this country. Consequently their operations acquire additional interest to English electricians, who, according to *Engineering*, are about to engage in enterprises of a magnitude far beyond their previous experiences; and in view of this we illustrate on this page the latest type of the Edison dynamo machine,

as it appears when designed for feeding 1,200 incandescent lamps from a central station.

The generator is driven directly from the engine without the use of belts or gearing, and consequently revolves at a moderate speed, about 350 revolutions per minute, while

follows the ordinary horizontal Edison type, the armature being formed of copper bars upon a core built up of alternate disks of sheet iron and paper, and the field magnets, of which there are twelve, being placed in a shunt circuit. A small fan delivers a constant stream of air on the center of the armature, where it divides and flows to each end, carrying away the heat generated by the current. Five brushes, each in a separate holder, press upon each side of the commutator, and deliver the current into the two mains, shown at the right of the figure, from whence it is distributed through the network of conductors laid all over the district. The point of contact between the brushes and the commutators can be varied, as the whole system is carried on a pivot coaxial with the armature. Mr. Edison's system provides for the connection of several such machines with one set of mains, and for their regulation according to the demands made upon them.

FIG. 1.

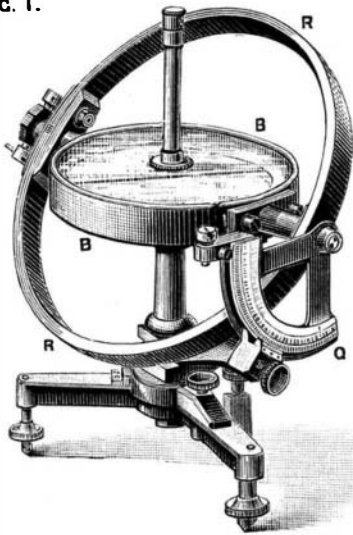


FIG. 2.

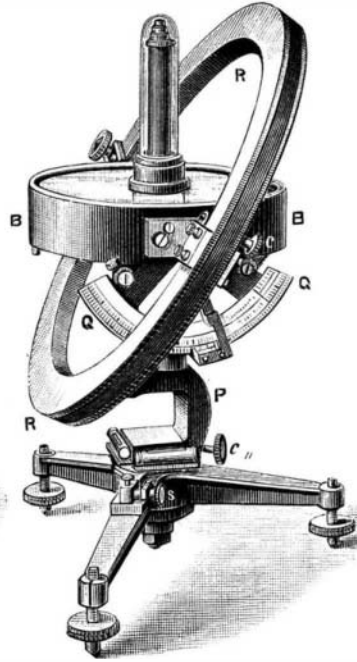
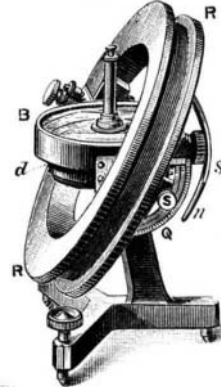


FIG. 3.



THE OBACH GALVANOMETERS.

there is no fear of a stoppage from the failure of the intermediate parts. The engine is of the Porter-Allen type, and indicates about 200 horse power; it is fitted with a Porter governor and an automatic expansion gear, and drives on to a crank pin fitted between two balance disks. The dynamo

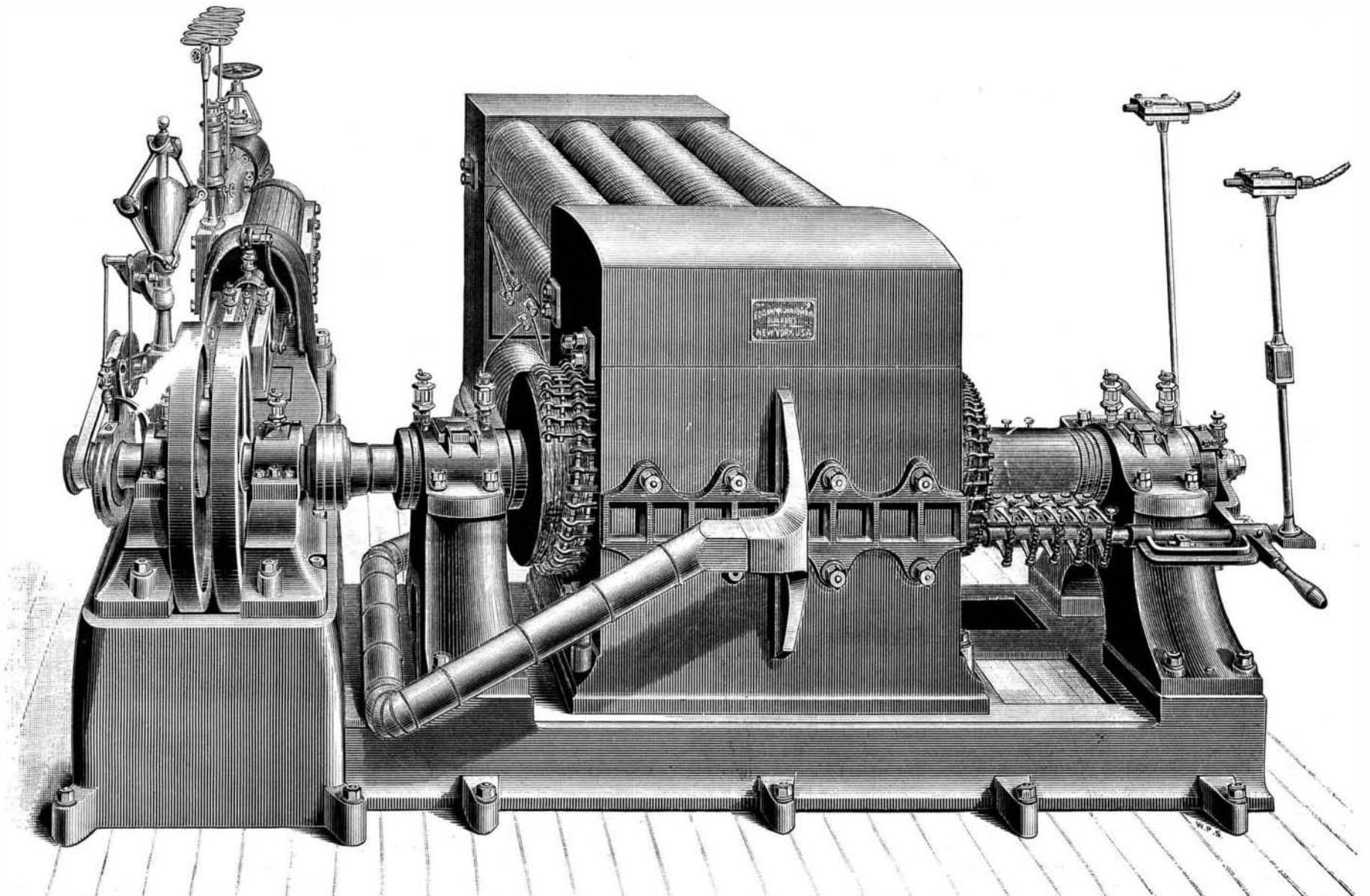
are all based is as follows: If the coil of a tangent galvanometer is made movable around a horizontal axis, a given current produces different deflections according to the inclinations given to the coil. If the angles of the

OBACH'S GALVANOMETERS.

These instruments are made by Messrs. Siemens Brothers and Co. in three different types. Two of them are suitable for measuring both current strength and electromotive force, whereas the other is for current strength alone.

The principle upon which they

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EDISON TWELVE HUNDRED ELECTRIC LIGHT MACHINE.