

DYNAMO-ELECTRIC MACHINES.

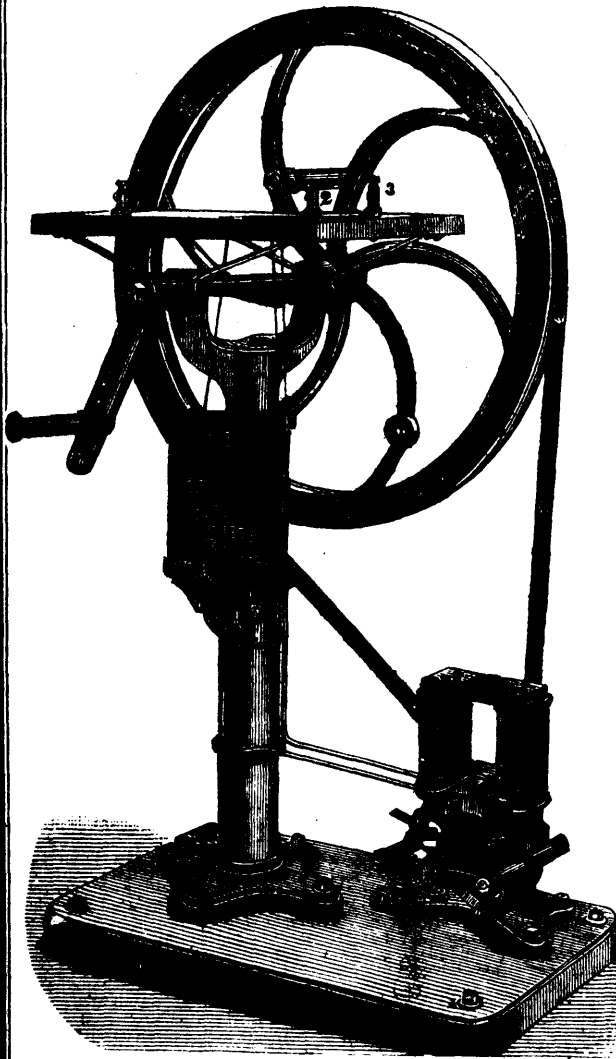


FIG. 1.

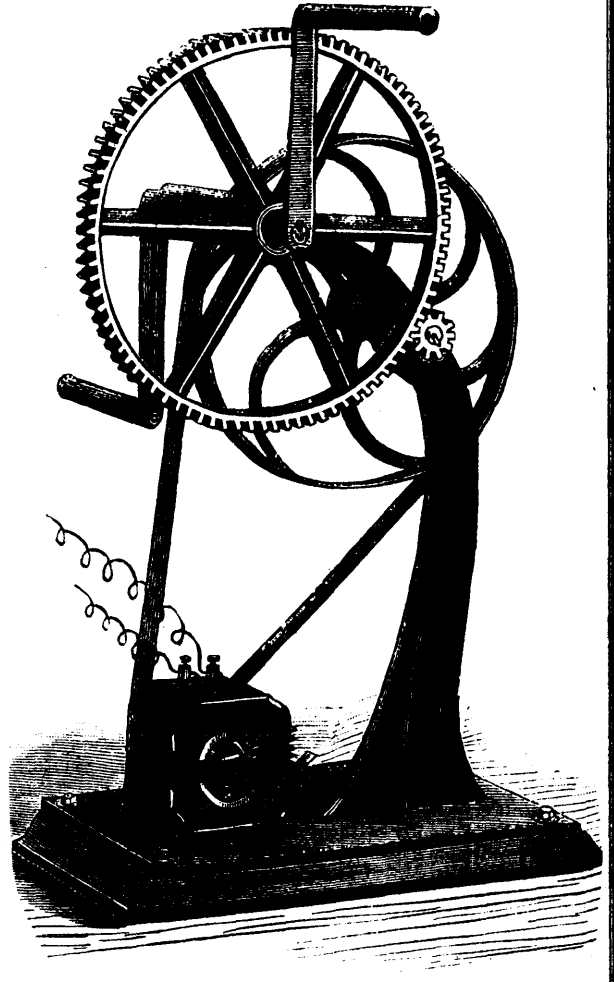


FIG. 2.

A paper by Mr. A. V. Abbott on "Some improvements in testing machines" was read by the author, and illustrated by a stereopticon. A 200,000 pound testing machine was first described, its general construction providing for weighing the forces applied by means of platform forms and levers somewhat similar to those used in ordinary scale work with special arrangements to reduce friction. To secure the direction of the pressure upon the test pieces in the axis of the machine, both ends of the piece are connected with segments of spheres moving freely in spherical sockets which take the proper position upon the first application of the stress. Arrangements are also made by means of wedges, to grip and hold uniformly the ends of the test pieces. The machine is arranged to test in tension, compression, for transverse stress, for shearing, bulging and torsion. In the machine illustrated, the action of applying stress is automatic and at the same time the same power gives an autographic record of the stress applied, and of any variations which may occur during the continuance

of the stress, and with an instantaneous autographic record of the result at the conclusion of the test. The stresses are applied by means of weights which slide upon two parallel lever beams, the one registering up to 10,000 pounds, and the other up to 200,000. By means of a remarkably ingenious electrical attachment, connected with clock work, the movement of these weights is continuous and automatic, and the registering apparatus is also controlled by the same electric current. It is impossible in this abstract, and without the aid of a diagram to fairly describe the details of these movements, but they seem to be very complete and accurate. Diagrams automatically made by the machine were exhibited and described.

A number of broken pieces of steel were exhibited, and also specimens of woods which had been tested in various ways. Machines of smaller power were also described, and a number of cements were broken upon a small automatic machine which was exhibited.

The discussion of the paper was postponed to a subsequent meeting.