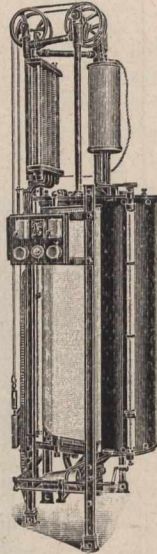


CONTINUOUS ROTARY ELECTRIC BLUE PRINT MACHINE.

This machine consists chiefly of a vertical semi-cylindrical sheet of glass, over which the tracings slide, and an arc lamp, which is made to travel up and down the axis of the cylinder. As will be gathered from the cut, the sheet of glass is supported by a light metal framework, and its cylindrical form completed by a sheet-iron guard. At each of the vertical edges of the glass a small roller is fixed. An endless band of canvas, of a width equal to the height of the glass, passes from one roller round the back of the glass to the other roller, thence back to the first. The two folds of canvas are kept clear at a proper tension by two idle rollers at the back. A small electric motor drives the rollers, and thus causes the canvas to slide over the glass. The tracings, with the printing paper behind them, are slipped in between the canvas and glass on the right of the machine, and, being dragged round by the canvas, are delivered from the opposite side with the exposure completed. An arrangement of speed cones is used to regulate the rate at which the canvas travels. Two light rollers are fixed to the front of the machine to wind long tracings from and on to as they emerge again.



From the above description it will be seen that, apart from the width of the tracing, the capacity of the machine is unlimited. Prints of great length, such as those used for railway work or in shipyards, can be taken by it as easily as smaller ones, and only require a proportionately longer time.

Ferro-Prussiate (blue) prints can be passed through at the rate of 3 lineal feet per minute. Ferro-Gallic (black) prints take about twice as long. A machine for copying tracings 40 inches wide, occupies a floor space about 2 feet 3 inches square, is about 8 feet high, and uses about 2 B.O.T. units of electricity per hour. It will turn out about 650 square feet of blue prints per hour, and the lamp will run at least a day without attention.

This machine is made in various sizes, up to 54 inches wide, and is manufactured by Leonard Shaw, 39 Victoria Street, Westminster, S. W., England.

GERMAN GOVERNMENT TESTING ESTABLISHMENT.

The Chief Engineer and Surveyor of Lloyd's Register of Shipping has recently paid a visit to the German Government testing establishment at Berlin, and the observations contained in his report are of sufficient interest to call for public attention. The only establishment in England to approach the one at Berlin is the National Physical Laboratory, but useful though this latter is, it does not come near the German establishment in results. There is no doubt that much of the expansion of German industries is due to the assistance given by this national institution. It is equipped with a very powerful testing machine for making tensile or compressive tests up to 500 tons, and there are also numerous other testing machines in constant use each having some special purpose. Among them is a set of twenty machines for testing the effect of fatigue or oft-repeated stresses on different materials. In some of these machines as many as three separate samples can be treated simultaneously. In most of them the tests are made at the normal temperature, but in other the test pieces are enclosed in asbestos lined chambers electrically heated to definite temperatures to ascertain the effect of high temperature upon the mechanical qualities of the materials under investigation. The speed at which the stresses are applied and released is controlled by electrical methods. As an example of the usefulness of this institution, it may be mentioned that the cement industry, which has recently enormously developed in Germany, owes much of its success to researches made at this establishment.

BOOK REVIEWS.

Proceedings of American Water-Works Association for 1907.—

By J. M. Diven, Secretary-Treasurer, Charleston, S.C. Size, 6 x 9, pp. 580. Price, \$4.

The proceedings of the 27th annual convention of the American Water-Works Association, held at Toronto, June 17th to 21st, has been published in bound form by the secretary of the Association. The work comprises a great deal of information obtainable from no other source than through the Association, and is representative of waterworks development all over America. The knowledge of proper handling of the source of water supply is becoming of growing importance, and no better or conveniently arranged information could be found than in the report of this Association. The papers read are well illustrated, and the whole work has been compiled so as to make an exceedingly useful and instructive volume, and a work of reference of value to any waterworks engineer.

Reinforced Concrete in Factory Construction.—Published by the Atlas Portland Cement Company, 30 Broad Street, New York. Size, 7 x 9, pp. 246.

This book contains details of concrete factory construction, and many careful descriptions of typical examples of concrete buildings selected from various sections of the country and erected by representative builders. It contains many valuable suggestions to the factory owner who contemplates building in reinforced concrete, as well as containing many practical details of value to architects, engineers, and builders. In the first chapter, a brief review of the qualities of reinforced concrete in comparison with other materials for factory building is considered, followed by chapters giving in considerable detail the general principles of design, with information in regard to methods of construction. In the third chapter the selection of aggregates is dealt with. The ten chapters following describe in full some one shop, factory, or warehouse of reinforced concrete, selected with a view of presenting a variety of the more usual types of construction. Chapter fourteen outlines, with illustrations, many of the styles and systems of reinforcement in common use in building construction, as well as referring to examples of concrete block walls, surface finish, and concrete pile foundations and tanks. All the illustrations have been prepared especially for this book, and the details and figure dimensions are so given as to be of considerable assistance and use as regard the new construction work.

Engine Room Chemistry.—By August H. Gill, Associate Professor Technical Analysis at the Massachusetts Institute of Technology; publishers, Hill Publishing Company, 505 Pearl Street, New York. Size 5 x 7, pp. 198. Price, \$1.

This book, the substance of which has appeared serially in "Power," has been prepared for the engineer and engine man to gain familiarity with the properties and behavior of the substances, such as fuel, water and oil, etc., in which he is naturally interested. A great many suggestions are given which are of considerable assistance in connection with fuels and fluids having a bearing on the subject. The book has been specially prepared to make a careful study of the applications of fuel, water and lubricants possible to the engine man, which cannot but result in increased economy in their use. The subject is treated in the following order following the introductory chapter: Apparatus and chemicals; fuels and their analysis; the regulation of combustion; water, boiler scale, pitting and corrosion; mineral oils; animal and vegetable oils; conclusion and appendix is added.

The fifty-fifth annual meeting of the American Society of Civil Engineers will be held at the house of the Society, No. 220 West 57th Street, New York, on Wednesday and Thursday, January 15th and 16th, 1908. The business meeting will be called to order at ten o'clock on Wednesday morning. The annual reports will be read; officers for the ensuing year elected; members of the Nominating Committee appointed; proposed amendment to the constitution and report of the Special Committee on Rail Sections presented for action, and other business transacted.