

the interest of the engineering profession and railroad company in making them as comprehensive as possible. In all, eight locomotives, of widely varying character and design, were tested, and the results are embodied in the present volume. After a description of the general exhibit of the company, the testing plant is described and illustrated in great detail, working drawings being given of all the parts. Then follow chapters on the formation of the advisory committee, and on the plan, scope, and method of recording the tests. Each of the eight locomotives is taken up in its turn, detailed working drawings being given of each one, and a mass of tables and diagrams which, considering the high professional skill with which the data have been gathered, are unique in the history of the locomotive. This work will prove invaluable to everyone who has to do with the design and operation of the steam locomotive.

ALTERNATING CURRENTS: THEIR THEORY, GENERATION, AND TRANSFORMATION. By Alfred Day, D.Sc., M.I.E.E. New York: The D. Van Nostrand Company, 1906. 8vo.; pp. 291. Price, \$2.50.

In the present volume Mr. Day has attempted to give a general account of the principles, construction, and use of alternating current measuring instruments, generators, motors, and transforming machinery. A great deal of attention has been given to methods of testing. The book is clearly and concisely written and many matters which are not generally understood, or which are of too recent origin to have found their way into text books, are thoroughly gone into. The book is very practical in character. It is illustrated by no less than 178 diagrams. All types of alternating current motors and dynamos, as well as the latest form of motor operating upon either direct or alternating current, are described with the aid of the diagrams. The book goes into the theory and practice of alternating current machinery in a most thorough manner.

THE MOST POPULAR HOME SONGS. New York: Hinds, Noble & Eldredge, 1906. Price, 50 cents.

This is a very complete collection of secular and religious songs which have been popular in this country at all periods of its history. Besides well-known English and American songs, some of those of other nations are included.

YEAR BOOK OF THE PENNSYLVANIA SOCIETY, 1905. Edited by Barr Ferree, secretary. New York: The Pennsylvania Society, 1905. 8vo.; pp. 208.

The Pennsylvania Society was organized seven years ago with the purpose of collecting historical material relating to the State of Pennsylvania and keeping its memory alive. The present volume is the fifth year book issued by the society. It contains much historical matter of interest chiefly to Pennsylvanians and is illustrated with half-tone plates of old houses, historical events, etc. A full report of the sixth annual dinner of the society, which commemorated the 117th anniversary of the ratification of the Constitution of the United States by the Pennsylvania Convention, and which was given in honor of Senator Philander C. Knox, is fully reported in this volume.

FAULTY DICTION, OR ERRORS IN THE USE OF THE ENGLISH LANGUAGE AND HOW TO CORRECT THEM. By Thomas H. Russell, LL.D., editor-in-chief of Webster's Imperial Dictionary. Chicago: George W. Ogilvie & Co., 1905. Pp. 150; bound in leather. Price, 50 cents.

This small vest-pocket aid to the use of correct English will be found both interesting and useful to all those who desire to speak correctly. The words are arranged in alphabetical order. The errors which are discussed are those of grammar, construction, or faulty rhetoric, and unauthorized words. The correct pronunciation of words which are sometimes mispronounced is also given in many instances.

VIOLINS AND OTHER STRING INSTRUMENTS, AND HOW TO MAKE THEM. Edited by Paul N. Hasluck. Philadelphia: David McKay, 1906. 16mo.; pp. 160. Price, 50 cents.

This book is compiled by the editor from the columns of Work. It contains explicit directions for the making of violins, violoncellos, mandolins, guitars, banjos, zithers, and dulcimers. The introductory chapter treats of the materials and tools required in making these instruments, while other chapters are devoted to the making of violin molds, the varnishing and finishing of violins, Japanese one-string violins, and a double-bass violin. The book contains much valuable information condensed in a small space.

HANDBOOK ON REINFORCED CONCRETE. By F. D. Warren. New York: D. Van Nostrand Company, 1906. 12mo.; pp. 271. Price, \$2.50.

This handy little volume is intended as a reference book for architects, engineers and contractors who have to do with the designing of concrete structures. The work treats of a general form of design rather than any one particular system. The treatment of the many phases entering the design has been carried out upon well known formulae based upon the theory of elasticity, and not upon empirical

formulae based upon experiments wholly. Sufficient tests were made, however, to determine the co-efficients and constants needed. The book is in four parts, the first of which gives a concise resumé of the subject from a practical standpoint and tells of the difficulties met with in practice and the remedies for the same. The second part contains a series of tests which justify the use of constants and co-efficients employed in preparing the tables in Part III. These tables should give the designer all the necessary information for ordinary use. It does not cover the more intricate designs, however. Part IV treats of the design of truss roofs from a practical standpoint.

INDEX OF INVENTIONS

For which Letters Patent of the

United States were Issued

for the Week Ending

March 13, 1906.

AND EACH BEARING THAT DATE

[See note at end of list about copies of these patents.]

Table listing inventions with names and patent numbers. Includes items like 'Acid from air, making nitric, A. & H.', 'Agitating device, W. B. Devereux', 'Air brake appliance, H. C. Luck', etc.

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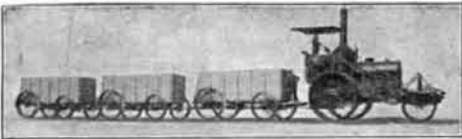
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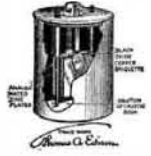
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ELECTRIC LIGHTING FOR AMATEURS. How a small and simple experimental installation can be set up at home. SCIENTIFIC AMERICAN SUPPLEMENT 1551.

CHEMICAL AFFINITY. Simply explained by SIR OLIVER LODGE. SCIENTIFIC AMERICAN SUPPLEMENT 1547.

CASE-HARDENING. By DAVID FLATHER. SCIENTIFIC AMERICAN SUPPLEMENT 1547.

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CONCRETE. A general article on its merits and defects. SCIENTIFIC AMERICAN SUPPLEMENT 1543.

REINFORCED CONCRETE. Some of its Principles and Applications with practical illustrations. SCIENTIFIC AMERICAN SUPPLEMENTS 1547, 1548, 1551.

ELECTRONS AND THE ELECTRONIC THEORY. Are discussed by SIR OLIVER LODGE in SCIENTIFIC AMERICAN SUPPLEMENTS 1428, 1429, 1430, 1431, 1432, 1433, 1434.

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HOW TO CONSTRUCT AN EFFICIENT WIRELESS TELEGRAPH APPARATUS AT SMALL COST is told in SCIENTIFIC AMERICAN SUPPLEMENT 1363.

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THE INTERNAL WORK OF THE WIND. By S. P. LANGLEY. A painstaking discussion by the leading authority on Aerodynamics, of a subject of value to all interested in airships. SCIENTIFIC AMERICAN SUPPLEMENTS 946 and 947.

LANGLEY'S AERODROME. Fully described and illustrated in SCIENTIFIC AMERICAN SUPPLEMENTS 1404, 1405 and 1546.

STEAM TURBINES. Their Construction, Operation and Commercial Application. SCIENTIFIC AMERICAN SUPPLEMENTS 1306, 1307, 1308, 1422, 1400, 1447, 1370, 1372, 1521. The articles have all been prepared by experts in steam engineering.

PORTLAND CEMENT MAKING is described in excellent articles contained in SCIENTIFIC AMERICAN SUPPLEMENTS 1433, 1465, 1466, 1510, 1511.

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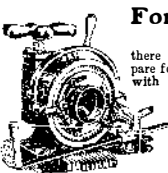
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