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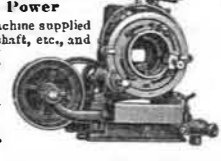
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**NEW BOOKS, ETC.**

**ADDING AND SUBTRACTING SCALE.** By E. F. Chandler. New York: Sold by J. S. Barron. Price, \$1.

This little computing device should be of great value in the drafting room, as it enables one to add fractions and their decimal equivalents without any mental computation. It consists of two disks, one rotatable upon the other, and each provided along its circumference with a ring of fractions running from 1/64 up to 63/64. The figures are so arranged that the sum of any two adjacent fractions on the two rings will be found on the lower ring directly opposite a slot in the upper disk. Conversely, when subtracting, the difference between any fraction on the upper disk and the fraction opposite the slot will be indicated opposite the first fraction on the lower disk. The decimal equivalents are placed radially under each fraction.

**WEIGHT COMPUTER.** New York: Sold by the Edge Computer Sales Agency. Price, \$2.

With a view to facilitating the work of the structural engineer in designing steel structures, a simple calculating device has been invented which will enable him to determine the weights of various structural shapes. The computer consists of two disks, one rotatable above the other, and each provided along the periphery with a logarithmic series of numbers. One scale is provided for plates, and the other for angles. To determine the weight of a plate, the upper disk is turned until the figure corresponding to the thickness of the plate comes opposite the figure corresponding with the width of the plate. The weight for various lengths can then be read on the lower scale. In the same way angle beams can be computed. Other forms can be computed if their weight per foot is known.

**THE AMERICAN NEWSPAPER ANNUAL.** Philadelphia: N. W. Ayer & Son, 1909. 1,350 pages royal octavo; cloth. Price, \$5 net.

No publication better reflects the changes which take place in the newspaper field than The American Newspaper Annual. This book aims to give the facts which an advertiser, or anyone else dealing with newspapers, needs to know, and to bring these facts down to date once each year. The book catalogues 23,894 newspapers, magazines and trade and class publications. A very valuable feature of the book is the circulation figures. When satisfactory signed or sworn statements have been made their figures are given, otherwise the editor of the Annual has estimated the circulation from the facts at his command. Supplementary to the general catalogue are lists of daily papers, magazines, women's publications, mail order publications, agricultural and religious papers, together with all the trade and class publications in their proper groupings. While the book is large and contains a vast amount of information, it is in tabulated form with everything in plain figures, which makes it very easy to get at any information desired.

**THE ZONAL-BELT HYPOTHESIS.** By Joseph T. Wheeler. Philadelphia: J. B. Lippincott Company, 1909. 12mo.; pp. 401. Price, \$2.50.

The author seeks to demonstrate that the earth was at one time girt with belts of planetesimal gaseous matter, somewhat similar to those encircling Saturn. Not only this, but he tries to prove that such belts existed quite recently, within the memory of primitive man, and were the cause of the ice ages. A mass of evidence is presented from the myths of early peoples to show that there is some foundation for such a hypothesis.

**HEAT ENERGY AND FUELS.** By Hans v. Jüptner. Translated by Oskar Nagel, Ph.D. New York: McGraw Publishing Company, 1909. 8vo.; pp. 306; 118 cuts. Price, \$3.

The present volume is one of a group prepared by Prof. Hans von Jüptner on chemical engineering. The volume deals with heat energy and fuels, and contains much new data that should be welcomed by chemists, metallurgists, and engineers. The book has been widely used in Europe as a textbook and hand-book, and it should be valuable here in universities and engineering schools, and among practical engineers as well.

**GUIDE TO SANITARY INSPECTIONS.** By William Paul Gerhard, C.E. Fourth Edition. Entirely Revised and Enlarged. New York: John Wiley & Sons, 1909. 12mo.; pp. 229. Price, \$1.50.

In revising the fourth edition of "A Guide to Sanitary House Inspection," it was deemed advisable to enlarge the scope of the book by adding considerable new matter. The matter of the original book has been thoroughly revised, and there are besides a new chapter on the sanitary inspection of public buildings and another on sanitary surveys of cities and towns. A novel feature is the embodying in the text of a large number of question schedules, relating to the sanitary inspection of city residences, tenement houses, and apartments, country houses, schools, hospitals, theatres, and institutions. The majority of these question schedules have been prepared by the author and have been found useful in his practice as consulting engineer. The chief aim of this little

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- SCIENTIFIC AMERICAN SUPPLEMENT 1538 gives the proportion of gravel and sand to be used in concrete.
- SCIENTIFIC AMERICAN SUPPLEMENTS 1567, 1568, 1569, 1570, and 1571 contain an elaborate discussion by Lieut. Henry J. Jones of the various systems of reinforcing concrete, concrete construction, and their applications. These articles constitute a splendid text book on the subject of reinforced concrete. Nothing better has been published.
- SCIENTIFIC AMERICAN SUPPLEMENT 1597 contains an article by Spencer Newberry in which practical notes on the proper preparation of concrete are given.
- SCIENTIFIC AMERICAN SUPPLEMENTS 1568 and 1569 present a helpful account of the making of concrete blocks by Spencer Newberry.
- SCIENTIFIC AMERICAN SUPPLEMENT 1534 gives a critical review of the engineering value of reinforced concrete.
- SCIENTIFIC AMERICAN SUPPLEMENTS 1547 and 1548 give a resume in which the various systems of reinforced concrete construction are discussed and illustrated.
- SCIENTIFIC AMERICAN SUPPLEMENTS 1564 and 1565 contain an article by Lewis A. Hicks, in which the merits and defects of reinforced concrete are analyzed.
- SCIENTIFIC AMERICAN SUPPLEMENT 1551 contains the principles of reinforced concrete with some practical illustrations by Walter Loring Webb.
- SCIENTIFIC AMERICAN SUPPLEMENT 1573 contains an article by Louis H. Gibson on the principles of success in concrete block manufacture, illustrated.
- SCIENTIFIC AMERICAN SUPPLEMENT 1574 discusses steel for reinforced concrete.
- SCIENTIFIC AMERICAN SUPPLEMENTS 1575, 1576, and 1577 contain a paper by

- Philip L. Wormley, Jr., on cement mortar and concrete, their preparation and use for farm purposes. The paper exhaustively discusses the making of mortar and concrete, depositing of concrete, facing concrete, wood forms, concrete sidewalks, details of construction of reinforced concrete posts, etc.
- SCIENTIFIC AMERICAN SUPPLEMENT 1586 contains a review of concrete mixing machinery by William L. Larkin.
- SCIENTIFIC AMERICAN SUPPLEMENT 1583 gives valuable suggestions on the selection of Portland cement for concrete blocks.
- SCIENTIFIC AMERICAN SUPPLEMENT 1581 splendidly discusses concrete aggregates. A helpful paper.
- SCIENTIFIC AMERICAN SUPPLEMENTS 1595 and 1596 present a thorough discussion of sand for mortar and concrete, by Sanford E. Thomson.
- SCIENTIFIC AMERICAN SUPPLEMENT 1586 contains a paper by William L. Larkin on Concrete Mixing Machinery, in which the leading types of mixers are discussed.
- SCIENTIFIC AMERICAN SUPPLEMENT 1626 publishes a practical paper by Henry H. Quimby on Concrete Surfaces.
- SCIENTIFIC AMERICAN SUPPLEMENT 1624 tells how to select the proportions for concrete and gives helpful suggestions on the Treatment of Concrete Surfaces.
- SCIENTIFIC AMERICAN SUPPLEMENT 1634 discusses Forms for Concrete Construction.
- SCIENTIFIC AMERICAN SUPPLEMENT 1639 contains a paper by Richard K. Meade on the Prevention of Freezing in Concrete by Calcium Chloride.
- In SCIENTIFIC AMERICAN SUPPLEMENT 1605 Mr. Sanford E. Thomson thoroughly discusses the proportioning of Concrete.
- SCIENTIFIC AMERICAN SUPPLEMENT 1578 tells why some fall in the Concrete Block business.
- SCIENTIFIC AMERICAN SUPPLEMENT 1608 contains a discriminating paper by Ross F. Tucker on the Progress and Logical Design of Reinforced Concrete.

Each number of the Supplement costs 10 cents. A set of papers containing all the articles above mentioned will be mailed for \$3.40

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volume is to outline broadly the main features of sanitary inspection work. While one of its aims is to instruct the layman, the householder, the owner of tenements, the principal of a school, the superintendent of a hospital, the manager of a theater, it is believed that the book will be also useful to health and sanitary inspectors, to boards of health, to fire department officials, insurance companies' inspectors, and to architects, civil engineers, and building superintendents in general.

**ALTERNATING-CURRENT MACHINES.** By Samuel Sheldon, A.M., Ph.D., D.Sc., Hobart Mason, B.S., E.E., and Ehrich Hausmann, B.S., E.E. Seventh Edition. New York: D. Van Nostrand & Co., 1909. 12mo.; pp. 353; 236 figures. Price, \$2.50.

This work has been so popular among students in other than electrical courses, that the authors have entirely rewritten it, so as to particularly adapt it to this class of readers. The book will be of value to engineers who are not perfectly familiar with the subject of alternating currents, but who find it necessary in their work to know something about it. Owing to practical experience with students, the authors have found that it is difficult for a young man to understand a subject without being obliged to make numerical computations. For this reason, at the end of each chapter a set of problems is given, particularly adapted to impress the subject matter upon the minds of the students.

**SCIENCE AND IMMORTALITY.** By Sir Oliver Lodge, F.R.S. New York: Moffat Yard & Co., 1909. 12mo.; 294 pp. Price, \$2 net.

In this able and intensely modern volume, the distinguished author sums up the status of science, faith, and theology in their bearings, separately and collectively, upon religion and immortality, and it constitutes, therefore, an extremely valuable contribution to the literature of the present important crisis in modern thought. The subject is treated under these general headings: I. Science and Faith; II. Corporate Worship and Service; III. The Immortality of the Soul; IV. Science and Christianity. This work is one of immense importance in this juncture, presenting fundamental Christian doctrine from the most modern and scientific point of view.

**PHOTOGRAPHY FOR YOUNG PEOPLE.** By Tudor Jenks. New York: Frederick A. Stokes Company, 1908. 12mo.; 328 pp. Price, \$1.50 net.

A book which presents, not only the methods of successful photography, but the reasons underlying the various processes. It gives to the practice of photography an additional fascination, and supplies the young reader with a foundation which enables him to read other photographic literature with profit instead of confusion, and to choose intelligently his camera, lens, or chemicals. Mr. Jenks describes the use of the camera, the working of its various parts, the process of negative development, toning or developing the print, and mounting. He then treats the various phases of photography separately in greater detail: exposure; what to take and how to take it; developers; the theory of development; tank development; printing papers, their working and their comparative value; lenses; and shutters. Two chapters are given to the history of photography, and another to the chemistry of photography.

**THE ARTS AND CRAFTS OF OLDER SPAIN.** By Leonard Williams. Chicago: A. C. McClurg & Co., 1908. Three volumes. 12mo.; 280 pp. each. Price, \$4.50.

In preparing these volumes, it has been the aim of the author to give a clear and fairly complete account of the arts and crafts of older Spain. There is room for a work of this design and scope, and there is really no good reason why so attractive a group of subjects should be so persistently ignored. The first volume deals with gold, silver, and jewel work, iron work, bronzes, and arms. The second volume takes up furniture, ivories, pottery, and glass, while the third volume is devoted entirely to textile fabrics. The volumes are beautifully illustrated by well-executed engravings. The author's account of Spanish pottery is most interesting and valuable. The study of this craft in Spain is far from definite, and therefore researches and discoveries may be hoped for at some future time. The history of Spanish arms has also suffered from unjust neglect. The author has spent several years in preparing these very interesting volumes, which will prove a most welcome addition to any library, whether general or special.

**VECTORS AND VECTOR DIAGRAMS APPLIED TO THE ALTERNATING CURRENT CIRCUIT.** New York: Longmans, Green & Co., 1909. 12mo.; pp. 254; 114 figures. Price, \$2.50.

The use of vector diagrams has become so universal, and is so convenient a method of expressing relationship in alternating-current circuits, that a book on vector algebra is almost a necessity. The present work takes the system worked up by Mr. C. P. Steinmetz, changing it slightly to avoid complexity, and goes into the algebra of the subject. The work presupposes a thorough knowledge on the part of the reader of electrical engineering to the extent reached by a student in his third college year.

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## INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending

April 6, 1909,

AND EACH BEARING THAT DATE

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Boiler-cleaning device, Thomas & Thompson.	917,330
Bolt-breaking machine, stay-, H. L. Hahn.	917,052
Bolt-lock, panic, H. G. Voight.	917,685
Boot and shoe elastic heel, C. M. Jagers.	917,075
Bottle, R. L. Sanders.	917,665
Bottle and stopper therefor, G. Sparano.	917,675
Bottle-cap, H. R. Vanaman.	917,196
Bottle-capping machine, J. A. McAnulty.	917,344
Bottle case, milk-, H. E. Sanders.	917,156
Bottle-filling apparatus, H. E. Sanders.	917,155
Bottle-stopper, G. H. Newey.	917,648
Box coupling, junction, E. S. Morrell.	917,342
Braiding-machine, W. N. Edwards.	917,424
Bread-pans, J. E. Leaman.	917,622
Bread-drill, G. O. Leopold.	917,319
Brick-cutting machine, Ludlam & Bonnot.	917,036
Brick-machine, multimolding two-side-delivery hand, F. H. Foiden.	917,030
Brick masonry, reinforced, N. Ellery.	917,028
Broom-cover, C. Plunkett.	917,486
Broom dust-collecting attachment, C. C. Abbott.	917,701
Brush-holder, E. R. Whitney.	917,223
Brush-holder, A. J. Brown.	917,535
Bucket, clam-shell, E. F. Atherton.	916,965
Bunching-machine, C. L. Combs.	917,549
Burner, F. A. Curtis.	917,261
Butter-fat from milk, apparatus for extracting, Cooke & Forander.	917,008
Button-making machine, S. Reinsberg.	917,487
Cable choker-line, log-hauling, A. Opsal.	917,738
Calculating machine, L. D. Roberts.	917,134
Camera, J. A. Robertson.	917,135
Camera focusing device, R. Kroedel.	917,079
Can blank forming machine, S. & C. H. Hookey.	917,269
Can tapping device, J. M. Early.	917,268
Car automatic curtain hook and release, vestibule, J. McMullen.	917,107
Car axle lubricator, J. C. Nichol.	917,477
Car bearing, J. R. Baker et al.	917,522
Car bodies, metallic end frame for, C. E. Dath.	917,710
Car brake operating apparatus, railway, N. Elliott.	917,569
Car door mechanism, C. A. Lindstrom.	917,321
Car draft gear, railway, H. C. Buhoup.	917,537
Car, dumping, F. Knott.	917,313
Car end construction, passenger, C. A. Lindstrom.	917,085
Car fender, F. G. Austin.	917,520
Car lock and seal, J. MacKenzie.	917,089
Car, passenger, H. Howson.	917,607