

NEW BOOKS, ETC.

FUNDAMENTAL PRINCIPLES OF CHEMISTRY. An Introduction to All Textbooks of Chemistry. By Wilhelm Ostwald. Translation by Harry W. Morse. New York: Longmans, Green & Co., 1909. 8vo.; pp. 349.

Prof. Ostwald's name is one to conjure with in almost every branch of science and in chemistry particularly. It would be difficult indeed to mention a chemist who has contributed more to the advancement of his science in our time, or one who occupies a more eminent position as a teacher. In this book Prof. Ostwald has presented with remarkable ingenuity and simplicity the actual fundamental principles of the science of chemistry, their meaning and connection, and stripped them so far as possible of irrelevant additions. The book may be regarded as an attempt to work out chemistry under the form of a rational scientific system without bringing in the properties of individual substances. Hence, it has been necessary to restate elementary principles in a new light, and to bring out many new connections in regions hitherto untouched. That is why this work will be found different in its treatment from any other work on chemistry that has ever been written. The pedagogic value of the preceding can be judged only by the instructor of chemistry. But to anyone familiar at all with chemistry, its merit must be apparent from an impartial consideration of the book.

A HAND BOOK OF PRACTICAL CALCULATION AND APPLICATION OF REINFORCED CONCRETE. Kahn System Standards. Compiled and published by the Engineering Department of the Trussed Concrete Steel Company. 12mo.; 126 pp.

The rapid growth of reinforced concrete construction makes necessary a hand book on design, similar to those in use for the ordinary classes of building material. The object of this hand book is to present to the designer tables and information in such form as to be made immediately available for use in actual designs, and at the same time to have these tables founded on scientific formulæ approved by our best engineering practice. The work as presented deals mainly with the Kahn trussed bar. The Kahn system of reinforced concrete, however, uses in its application several other types of reinforcement, including rib metal, hy-rib, cup bars, column hooping, rib lath, and rib studs.

HOW TO OBSERVE AND RECORD THE WEATHER.

(Continued from page 412.)

mounted very nearly horizontally. These two instruments are usually supported as they appear in Fig. 3.

The minimum is read and then "set" by raising it gently until the index slides to the surface of the alcohol (Fig. 5). The maximum must be lowered to a vertical position before it is read (Fig. 4). After this reading is taken and recorded, the thermometer is then "set" by gently swinging it up and down, until that amount of mercury is shaken back into the bulb that represents the difference in temperature between the maximum and the present, if any. When no more mercury can be returned to the bulb, the thermometer is allowed to hang vertically, and a second reading is taken. The mercury now gives the temperature at the time of reading; and this reading is recorded as "set maximum." In other words, the maximum thermometer serves in place of two thermometers. First, it records the highest temperatures during the twenty-four hours; and secondly, when it is set, it gives the temperature at 7 P. M.—the time of reading.

EXPOSURE.—The marked variation between the readings obtained from thermometers owned by private persons and Weather Bureau thermometers is due much more frequently to the difference in the manner of exposing them than to difference in quality, accuracy, or cost price. Thermometers exposed against buildings, on verandas, in windows, cannot often be trusted to give even approximately the true temperature of the atmosphere. For the air is not a stationary body, but is a continuously inter-twisting, expanding, and contracting gas perpetually seeking an equilibrium, which is seldom even momentarily gained, than it is instantly lost. All gross inaccuracies attending exposure of thermometers are overcome by the shelter adopted by the Weather Bureau and provided to all observers (Fig. 9).

The outside dimensions are 42 inches long by 36 inches wide by 36 inches least height, and a second roof, 6 inches above, has two ends open. The air has free ac-

cess to the interior, for the four sides of the shelter are louvered; that is, composed of shutters. These shutters overlap, and have a pitch which enables them to shed water, and intercept also the rays of the sun, even when level at sunrise or sunset.

Shelters ought to be placed in a large open space, or upon a house top or other high building, where the circulation of the air is unimpeded. Correct temperatures are recorded only when the air flows freely round the shelter as well as through it. When the shelter cannot be situated in an open area, it may be set up on the north side of a building, with a space not less than four inches intervening.

Sunshine does not give the average temperature of the air, but the highest; and so a thermometer, hung in the sun, falsifies or greatly exaggerates. If the temperature is 87, a thermometer in the sun will run up to 100 or more. The confiding observer, suddenly aware how hot it apparently is, grows faint from the imaginary heat, runs for a fan, and rapidly raises his bodily temperature by his vigorous gesticulations trying to cool himself.

Instruments that measure the depth of the fall of rain are neither well known by sight, nor is the method by which they record the rainfall very familiar.

Fig. 7 shows the essential parts of a rain gage, which are a receiver, a measuring tube, and an overflow. The rain is caught by the receiver, the bottom of which is funnel shaped, and falls into the measuring tube. Should the amount that falls be excessive, and more than fill the measuring tube, the excess overflows into the outer cylinder. The rain gage is designed to catch the precipitation of rain, and to facilitate the reading of the amount by mechanically magnifying the quantity. The diameter of a Weather Bureau rain gage receiver at the top is 8 inches; the diameter of the measuring tube is 2.53 inches. In consequence of this difference in area, the water in the measuring tube stands ten times deeper than if spread over the area of the receiver; so that a rainfall of one inch in the receiver stands ten inches in the measuring tube. The scale by which the water is measured is graduated in hundredths of an inch; but that inch on the scale is really ten inches long (Fig. 8).

In the normal temperate climate, there are only a few rains in a year when a reading of one inch is observed. A fall of rain amounting to two inches is uncommon; a precipitation recording three or more inches is the exceptional record of a decade or two. Some rains, attended by strong wind, vivid lightning, and apparently heavy downpouring of sheeted rain, give a reading as low as twenty-five to sixty or seventy hundredths of an inch; while other rains, not so accompanied by electric phenomena and aerial disturbances, occasionally give a reading of an inch or more. Only an experienced observer is competent to make a fairly close guess of the amount of precipitation; and at best his guess is subject to the errors that so commonly invalidate all suppositions.

Snowfall is caught in the large cylinder (Continued on page 419.)

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending November 23, 1909,

AND EACH BEARING THAT DATE

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

Table listing inventions with dates and page numbers, including items like 'Adding machine, C. N. McFarland' and 'Adjustable chair, R. Ramsey'.

'Star' Foot and Power Lathes advertisement. Features an image of a lathe and text: 'FOR FINE, ACCURATE WORK. SENECA FALLS MFG. CO. 695 Water Street, Seneca Falls, N. Y., U. S. A.'

Engine and Foot Lathes advertisement. Text: 'MACHINE SHOP OUTFITS, TOOLS AND SUPPLIES, BEST MATERIALS, BEST WORKMANSHIP, CATALOGUE FREE. SEBASTIAN LATHE CO., 120 Culvert St., Cincinnati, O.'

Incorporate Your PATENTS and BUSINESS in ARIZONA. Text: 'Stoddard Incorporating Company, Box 8000 Phoenix, Arizona. Laws most liberal. Expense the least. Hold meetings, transact business anywhere. Blanks, By-Laws and forms for making stock full-paid for cash, property or services, free. President Stoddard, FORMER SECRETARY OF ARIZONA, resident agent for many thousand companies. Reference: Any bank in Arizona.'

THIS GRINDER advertisement. Text: 'Has no pumps, no valves. No piping required to supply it with water. Always ready for use. Simplest in construction, most efficient in operation. Price will interest you. W. F. & J. O. BARNES CO., Established 1872, 1999 Ruby St., Rockford, Ill.'

DIE MODELS SPECIAL WORK TOOLS MACHINERY advertisement. Text: 'NATIONAL STAMPING AND ELECTRIC WORKS, 216-226 S. Jefferson Street, Chicago, Ill.'

MARSTON'S Patent Hand Foot & Power Circular & Band Saws advertisement. Text: 'Send for Catalogue J. M. MARSTON & CO., 247 Ruggles St., BOSTON, MASS. 34-inch Band Saw'.

WORLD'S ELECTRICAL EXHIBITION JANUARY 15 TO 29 1910 advertisement. Text: 'Arrange to visit Chicago at this time and see everything new and wonderful in the field of Electrical Science, Invention and Industry. Manufacturers should reserve space now. ELECTRICAL TRADES EXPOSITION CO., Chicago, U. S. A.'

A Home-Made 100-Mile Wireless Telegraph Set advertisement. Text: 'Read SCIENTIFIC AMERICAN SUPPLEMENT 1635 for a thorough, clear description, by A. Frederick Collins, of the construction of a 100-mile wireless telegraph outfit. Numerous adequate diagrams accompany the text. Price 10 cents by mail. Order from your newsdealer or from MUNN & CO., Inc., 361 Broadway, New York'.

Two Good Books for Steel Workers advertisement. Text: 'Hardening, Tempering, Annealing and Forging of Steel. By JOSEPH V. WOODWORTH. Size 6 1/2 x 9 1/2 inches. 288 pages. 201 illustrations. Price \$2.50 postpaid.'

The American Steel Worker advertisement. Text: 'By E. R. MARKHAM. Size 5 1/2 x 8 inches. 367 pages. 163 illustrations. Price \$2.50 postpaid. THIS is a standard work on selecting, annealing, hardening and tempering all grades of steel, by an acknowledged authority. The author has had twenty-five years' practical experience in steel-working, during which time he has collected much of the material for this book. Careful instructions are given for every detail of every tool. Among the subjects treated are, the selection of steel to meet various requirements; how to tell steel when you see it; reasons for different steels; how to treat steel in the making of small tools, taps, reamers, drills, milling cutters; hardening and tempering dies; pack-hardening; case-hardening; annealing; heating apparatus; mixtures and baths, the best kind, and why; and in fact everything that a steel-worker would want to know is contained in this book.'

OUR SPECIAL OFFER advertisement. Text: 'The price of these books is \$2.50 each, but when the two volumes are ordered from us at one time, we send them prepaid to any address in the world on receipt of \$4.00.'

MUNN & COMPANY, Inc. Publishers advertisement. Text: '361 Broadway, New York. Lists various books and their prices, including 'The American Steel Worker', 'The Home-Made 100-Mile Wireless Telegraph Set', and 'The World's Electrical Exhibition'.

Legal Notices PATENTS advertisement. Text: 'INVENTORS are invited to communicate with Munn & Co., 361 Broadway, New York, or 625 F Street, Washington, D. C., in regard to securing valid patent protection for their inventions. Trade-Marks and Copyrights registered. Design Patents and Foreign Patents secured. A Free Opinion as to the probable patentability of an invention will be readily given to any inventor furnishing us with a model or sketch and a brief description of the device in question. All communications are strictly confidential. Our Hand-Book on Patents will be sent free on request. Ours is the Oldest agency for securing patents; it was established over sixty years ago. MUNN & CO., 361 Broadway, New York Branch Office, 625 F St., Washington, D. C.'

Table listing various patents with descriptions and numbers, such as 'Air brake appliance, safety, T. W. Ash' and 'Bag fastener, E. S. Erickson'.

Classified Advertisements

Advertising in this column is 75 cents a line. No less than four nor more than 10 lines accepted. Count seven words to the line. All orders must be accompanied by a remittance. Further information sent on request.

READ THIS COLUMN CAREFULLY.—You will find inquiries for certain classes of articles numbered in consecutive order. If you manufacture these goods write us at once and we will send you the name and address of the party desiring the information. There is no charge for this service. In every case it is necessary to give the number of the inquiry. Where manufacturers do not respond promptly the inquiry may be repeated.

MUNN & CO., Inc.

BUSINESS OPPORTUNITIES.

WANTED. Manufacturer of enamel ware to manufacture a useful, patented article on royalty basis. Mrs. Sarah W. Hitchcock, 407 E. 3d St., Dixon, Ill.

Inquiry No. 8918.—For manufacturers of "Wyd's Electro-Cat ytic Sparking Plug."

PATENTS FOR SALE.

FOR SALE.—Patent No. 936,000. A spring wheel to substitute the rubber tire wheels actually used for automobiles. Address Luis I. Leon, San Juan, Porto Rico.

Inquiry No. 8957.—Wanted, the manufacturers of the Van Winkle Woods & Sons, and the Weber power meters.

FOR SALE. Patent No. 900,457. An improved lathe rest for holding cylinders while being bored in an engine lathe. For further particulars address A. E. Whiting, Weston, W. Va.

Inquiry No. 8996.—Wanted addresses of manufacturers of machinery for working orange wood manure sticks.

FOR SALE.—Patent No. 901,971. Shock cushioning neck-yoke. Something new, nothing of the kind on the market. Sell outright, reasonable. Address William Kleineschay, Campbellsport, Wisconsin.

Inquiry No. 8990.—For information regarding shoes not made of leather but similar to the same and are as durable.

Do you want to manufacture electric heaters? The best patent that ever was issued in the United States is No. 1,277,272 for sale. Write Moise Landry, Hotel Carolyn, Tullock, Cal.

Inquiry No. 9014.—For manufacturers of machinery, supplies, etc., to equip a small plant for the manufacture of iridium-tipped gold nib making for fountain pens.

FOR SALE.

THE SANBORN BAG LIFTER. A device to assist in handling bags of grain, cement, etc. Saves the fingers and avoids damage to bag. Sample sent free on request. H. & E. Sanborn, Portland, Maine.

Inquiry No. 9016.—Wanted machinery necessary for an installation of a plant for refining salt by a modification of the Bessemer process.

FOR SALE.—Engine lathe, swings 9 1/2 in., takes 26 in. between centers. Complete with full set change gears to cut all size threads, 3 to 48 in. Price only \$43.50. Address L. F. Grammes & Sons, Allentown, Pa.

Inquiry No. 9023.—Wanted, to buy silk machines from re-reeling, twisting, doubling, to the final process of making it into clothes.

FOR SALE.—An Alvin Clark 4-inch Equatorial Telescope, 5 eye pieces, prism, sun glass and tripod. Cost \$325.00. Sherman, 523 East 46th St., Chicago, Ill.

Inquiry No. 9025.—Wanted, address of rubber manufacturers in Germany.

FOR SALE.—Patent 928,216. Improvement on pipe wrench. Simple in construction and automatic. For full information, write A. C. Pearson, Attorney, 37 1/2 Virginia Avenue, Indianapolis, Ind.

Inquiry No. 9028.—Wanted, to buy a washing machine that is run by a coil spring motor.

TYPEWRITERS.

REAL REMINGTON. \$18.75.—One machine only in new localities to secure desirable agent. Special agents prices supplied on all makes of typewriters. 3 ribbons \$1.00. Standard Typewriter Exchange, 23 Park Row, New York.

Inquiry No. 9029.—Wanted, catalogues and all information on machinery for braiding straw in manufacturing straw hats.

MISCELLANEOUS.

"LIGHT, HEAT, MAGNETISM AND ELECTRICITY are all one and the same thing." If you want to know what they are, send fifty cents for a copy of this pamphlet to A. M. Howland, El Paso, Texas.

Inquiry No. 9034.—For manufacturers of machinery that could reduce stumps to kindling wood.

WANTED.—Designs for a successful single pulley drive for adaptation to machinery tools. Address A. E. Anderson, 79 Dearborn Street, Chicago, Ill.

Inquiry No. 9036.—Wanted, the address of the manufacturers of "Cycle Ball Bearings Suspended."

HAIR GROWS when our Vacuum Cap is used a few minutes daily. Sent on 90 days' free trial at our expense. No drugs or electricity. Stops falling hair. Cures dandruff. Postal brings illustrated booklet. Modern Vacuum Cap Co., 656 Barclay Block, Denver, Colo.

Inquiry No. 9038.—Wanted, the address of the Chipman Electric Purifying Co.

LISTS OF MANUFACTURERS.

COMPLETE LISTS of manufacturers in all lines supplied at short notice at moderate rates. Small and special lists compiled to order at various prices. Estimates should be obtained in advance. Address Munn & Co., Inc., List Department, Box 773, New York.

Inquiry No. 9042.—Wanted the address of Farney Safety Razor Co.

A LIST OF 1,500 mining and consulting engineers on cards. A very valuable list for circularizing, etc. Price \$15.00. Address Munn & Co., Inc., List Department, Box 773, New York.

Inquiry No. 9043.—Wanted the address of the manufacturers of mirrors that are transparent when the light in the rear is stronger.

Inquiry No. 9044.—Wanted to buy outfits necessary for agate polishing.

Inquiry No. 9045.—Wanted the address of the International Lumber and Development Co., manufacturers of hardwood.

Inquiry No. 9046.—Wanted, machinery used for the manufacture of all kinds of fruit boxes, baskets and crates.

Inquiry No. 9047.—Wanted, the address of parties who install plants for making oxygen or ozone gas.

Inquiry No. 9048.—Wanted, address of manufacturers of metal table slides for extension tables.

Inquiry No. 9049.—Wanted, to buy rotary brushes suitable for a shoe shining machine.

Inquiry No. 9050.—Wanted, to buy equipment for manufacturing starch and denatured alcohol from potatoes, also manufacturers of equipments for vegetable canneries.

Inquiry No. 9051.—Wanted, to buy machinery for extraction of cotton seed oil on a small scale.

them that sleep will ensue. If so the end of the tray holding his head will rise and that holding his feet will fall, showing that in sleep the blood leaves the brain for the extremities. For a somewhat similar purpose is a large glass jar holding the arm, submerged in water. When any action of the mind causes the blood supply of the arm to increase or decrease—as the vital fluid is attracted toward or repelled by the brain—a marking point resting upon the paper of the moving cylinder above described is raised or lowered. With this has been determined that every emotional excitement speaks in the blood supply of every limb.

How our states of mind unconsciously alter, also our powers of performing muscular work, are nicely demonstrated by a machine attached to the middle finger, generally accepted by physiologists as the index to the body's muscular tone. A vise holds the forearm and hand outstretched, palm upward, upon a table, and the finger is harnessed to a cord hanging over a pulley and suspending a weight. As the finger is bent and straightened it raises and lowers the weight and at the same time a recording point worked by the cord keeps score upon a revolving cylinder. It has been discovered that if the subject concentrates his mind upon the effort of thus contracting his finger frequently and each time raises the weight with his utmost force, his finger will weaken and after a time will scarcely stir the weight. But if he continues to make this effort regardless of the results—without worrying about them—sooner or later the strength of the finger will begin to return and will move the weight almost as much as before. Thus he will continue with alternate periods of fatigue and almost complete recovery—a phenomenon akin to that of the athlete's "second wind." The experiment plainly demonstrates how fear of the results of effort will wear upon the muscles with which the effort is made.

Among the most important of the gages which measure a man-engine's comparative powers of self-direction are those which record the acuteness of the senses—of those telegraph systems over which are dispatched, from the various objects to consciousness, the subtle messages upon which our total impressions of perceived objects are based—the raw material, in fact, out of which our every thought is manufactured.

Acuteness of hearing is tested by a device in which balls of cork fall a certain distance upon a plate of glass, the ear being distant so many inches. At the outset of this test the height from which the balls fall is so slight that the ear does not perceive their impact, but the length of drop is gradually increased until the sound commences to be audible. The acuteness of each ear is measured upon a scale in units of the length of drop at which perception of the sound just barely commences. Then there is a gage measuring the ear's estimate of direction. A graduated horizontal circle surrounds the head and after the subject has been blindfolded a sound is made with a telegraphic sounder moved to the different degrees marked in the circle. The subject's estimates of the direction whence the sound issues are compared with its actual direction.

Acuteness of seeing is measured by devices too numerous for description. One of the most interesting exposes a long black surface across which extend three movable white strips. Two are placed a certain distance apart and the third, moving automatically, is stopped by the subject at the point which he estimates to be exactly between the others. A concealed scale shows his error.

When his acuteness of smell is tested the subject sits before an instrument from which protrude into his nostrils a pair of tubes connecting with a metallic case shielded from his eyes. The examiner fits to the open end of the tubes various cylinders filled with substances of different perfume, whose strength varies

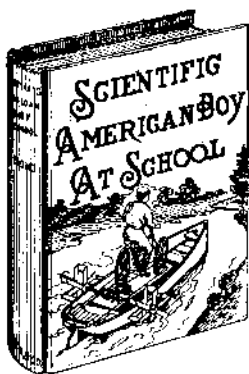
(Concluded on page 423.)

Three New Interesting Books

The Scientific American Boy at School

By A. RUSSELL BOND

12mo. 338 Pages. 314 Illustrations.
Price \$2.00 postpaid.



THIS book is a sequel to "The Scientific American Boy," many thousand copies of which have been sold, and has proven very popular with the boys. The main object of the book is to instruct how to build various devices and apparatus, particularly for outdoor use. The construction of the apparatus, which is fully within the scope of the average boy, is fully described and the instructions are interwoven in an interesting story, a feature which has assisted in making the "Scientific American Boy" so popular with the boys.

It takes up the story of "Bill" and several of his companions at boarding school. They form a mysterious Egyptian society, whose object is to emulate the resourcefulness of the ancients. Their Chief Astrologer and Priest of the Sacred Scarabeus is gifted with unusual powers, but his magic is explained so that others can copy it. Under the directions of the Chief Engineer, dams, bridges, and canal-locks are constructed. The Chief Admiral and Naval Constructor builds many types of boats, some of which are entirely new. The Chief Craftsman and the Chief Artist also have their parts in the work done by the Society, over which Pharaoh and his Grand Vizier have charge. Following is a list of the chapters:

Chapter I, Initiation; Chapter II, Building a Dam; Chapter III, The Skiff; Chapter IV, The Lake House; Chapter V, A Midnight Surprise; Chapter VI, The Modern Order of Ancient Engineers; Chapter VII, A "Pedal Paddle Boat"; Chapter VIII, Surveying; Chapter IX, Sounding the Lake; Chapter X, Signaling Systems; Chapter XI, The Howe Truss Bridge; Chapter XII, The Seismograph; Chapter XIII, The Canal Lock; Chapter XIV, Hunting with a Camera; Chapter XV, The Gliding Machine; Chapter XVI, Camping Ideas; Chapter XVII, The Haunted House; Chapter XVIII, Sun Dials and Clepsydras; Chapter XIX, The Fish-Tail Boat; Chapter XX, Kite Photography; Chapter XXI, Water-Kites and Current Sailing; Chapter XXII, The Wooden Canoe; Chapter XXIII, The Bicycle Sled; Chapter XXIV, Magic; Chapter XXV, The Sailboat; Chapter XXVI, Water Sports, and Chapter XXVII, A Geyser Fountain. Index.

Handy Man's Workshop and Laboratory

Compiled and Edited by A. RUSSELL BOND

12mo. 467 Pages. 370 Illustrations.
Price \$2.00 postpaid.



EVERY practical mechanic, whether amateur or professional, has been confronted many times with unexpected situations calling for the exercise of considerable ingenuity. The resourceful man who has met an issue of this sort successfully seldom, if ever, is averse to making public his methods of procedure. After all he has little to gain by keeping the matter to himself and, appreciating the advice of other practical men in the same line of work, he is only too glad to contribute his own suggestions to the general fund of information.

About a year ago it was decided to open a department in the Scientific American devoted to the interests of the handy man. There was an almost immediate response. Hundreds of valuable suggestions poured in from every part of this country and from abroad as well. Not only amateur mechanics, but professional men as well were eager to recount their experiences in emergencies and offer useful bits of information, ingenious ideas, wrinkles or "kinks," as they are called. Aside from these, many valuable contributions came from men in other walks of life—resourceful men, who showed their aptness at doing things about the house, in the garden, on the farm. The electrician and the man in the physics and chemical laboratory furnished another tributary to the food of ideas. Automobiles, motor cycles, motor boats and the like frequently call for a display of ingenuity among a class of men who otherwise would never touch a tool. These also contributed a large share of suggestions that poured in upon us. It was apparent from the outset that the Handy Man's Workshop Department in the Scientific American would be utterly inadequate for so large a volume of material; but rather than reject any really useful ideas for lack of space, we have collected the worthier suggestions, which we present in the present volume. They have all been classified and arranged in eight chapters, under the following headings:

I, Fitting up a Workshop; II, Shop Kinks; III, Soldering of Metals; IV, The Handy Man in the Factory; V, The Handy Man's Experimental Laboratory; VI, The Handy Man's Electrical Laboratory; VII, The Handy Man About the House; VIII, The Handy Sportsman; IX, Model Toy Flying Machines. Index.

Concrete Pottery and Garden Furniture

By RALPH C. DAVISON

Assistant Secretary Concrete Association of America

12mo. 196 Pages. 140 Illustrations.
Price \$1.50 postpaid.



THIS work should appeal strongly to all those interested in ornamental concrete, as the author has taken up and explained in detail in a most practical manner the various methods of casting concrete in ornamental shapes. The titles of the thirteen chapters which this book contains will give a general idea of the broad character of the work. They are entitled:

I, Making Wire Forms and Frames; II, Covering the Wire Frames and Modeling the Cement Mortar into Form; III, Plaster Molds for Simple Forms; IV, Plaster Molds for Objects Having Curved Outlines; V, Combination of Casting and Modeling—An Egyptian Vase; VI, Glue Molds; VII, Colored Cements and Methods Used for Producing Designs with Same; VIII, Selection of Aggregates; IX, Wooden Molds—Ornamental Flower Pots Modeled by Hand and Inlaid With Colored Tile; X, Concrete Pedestals; XI, Concrete Benches; XII, Concrete Fences; XIII, Miscellaneous, Including Tools, Waterproofing, and reinforcing.

The first two chapters explain a most unique and original method of working pottery which has been developed by the author. The chapter on color work alone is worth many times the cost of the book inasmuch as there is little known on this subject, and there is a large and growing demand for this class of work. The author has taken for granted that the reader knows nothing whatever about the material and has explained each progressive step in the various operations throughout in detail. These directions have been supplemented with half-tones and line illustrations which are so clear that no one can misunderstand them. The amateur craftsman who has been working in clay will especially appreciate the adaptability of concrete for pottery work, inasmuch as it is a cold process throughout, thus doing away with the necessity of kiln firing, which is necessary with the former material. The book is well gotten up, and is printed on heavy glazed paper and abounds in handsome illustrations throughout, which clearly show the unlimited possibilities of ornamentation in concrete.

MUNN & CO., Inc., Publishers, 361 Broadway, New York

