

sharpest blades are very quickly dulled in cutting cork? A. The elastic nature of cork makes it necessary to draw out in cutting cork, which is not usual in cutting wood. The draw cut tends to dull the edge of sharp cutting tools very quickly when cutting any kind of material.

NEW BOOKS ETC.,

GAS AND OIL ENGINE MANAGEMENT. By M. Powis Bale, M. I. Mech. E., A. M.I.C.E. New York: J. B. Lippincott Company. 1903. Pp. 110. Price \$1.50.

The author of this handbook has previously published two similar books for steam engine users, which have been very successful; and what counts for more, he has had fifteen years' experience with gas engines. The handbook gives a good many practical points regarding the care and operation of stationary gas and oil engines, and it also contains useful tables giving the calorific value of the various fuels ordinarily employed.

L'INDUSTRIA FRIGORIFERA. By Pasquale Ulivi. Milan: Ulrico Hoepli. 1904. 18mo. Pp. 168. Illustrated. Price 40 cents.

This small volume describes in detail the various methods used in producing cold and artificial ice for refrigerating purposes. The liquefaction of air and various gases is also treated quite thoroughly, and the different processes are described. The book also contains sixteen tables of value bearing on the subject treated.

EASY LESSONS IN ARCHITECTURE. By Thomas Mitchell. New York: The Industrial Publication Company. 1904. 12mo. Pp. 92. Numerous illustrations. Price 50 cents.

This little volume is intended to give rudimentary instruction in architecture to all interested in studying that most fascinating art. Each chapter consists of a number of questions and answers on some particular style or branch of architecture from the earliest times down to the present. The arrangement of the text in classified questions and answers puts it in very concise form, and makes the contents of the book easy to grasp and to remember. The present, or second, edition has been especially arranged for American readers. It will be found most useful to all who wish to know something of the main principles of architecture.

MARY OF MAGDALA. An Historical and Romantic Drama in Five Acts. The Original in German Prose by Paul Heyse. The Translation freely adapted and written in English Verse by William Winter. New York: The Macmillan Company. 1903.

We shall not quarrel with Mr. Winter for having done Heyse's religious drama into English blank verse. His rendering undoubtedly gains in dignity thereby. But we do seriously object to his having presented us with an expurgated version, when no expurgation was necessary. Winter's Mary is not Heyse's Mary. The German dramatist painted a strong picture of a woman exultantly sinful at first, bitterly penitent at the last. The American translator robs her of every trait of wickedness, and allows her to weep through four acts, with nothing to weep for. Confessedly ignorant of any knowledge of German, Mr. Winter presumptuously proclaims Heyse's text devoid of poetical or spiritual merit. Those who are blessed with a more intimate acquaintance with Heyse's splendid prose than is Mr. Winter, and who have not based their views on a "rough, literal translation," will find the original a more virile play, with stronger dramatic contrasts, than Mr. Winter would have us believe.

PUBLICATIONS OF THE MISSISSIPPI HISTORICAL SOCIETY. Edited by Franklin L. Riley, Secretary. Vol. VII. Oxford, Miss.: The Mississippi Historical Society. 1903. 8vo. Pp. 531.

The present volume is composed of a number of papers dealing with different phases of State history, and will certainly prove of interest to the historian and to residents of the State of Mississippi. There is an excellent chapter on the Mississippi floods by Dr. John W. Monette, and another chapter is on "The Progress of Navigation and Commerce on the Waters of the Mississippi River and the Great Lakes from 1700 to 1846."

LUFTVERUNREINIGUNG UND VENTILATION. Mit besonderer Rücksicht auf Industrie und Gewerbe. Von Dr. Josef Rambousek. With 48 illustrations and a table. Vienna and Leipzig: A. Hartleben. 1904. 8vo. Pp. 260.

The author starts out with an elementary discussion of ventilation principles, presenting a theory of ventilation and something of the technology of ventilation. In this particular part of the work the chief sources of impurity discussed are the exhalations of the human body. For this reason the earlier divisions of the book are confined to a discussion of the ventilation of dwellings, schools, churches, theatres, and the like. The second division, on the other hand, is devoted to a treatment of the ventilation of industrial buildings, such as factories impregnated with gases and dust. It is here that the author has given striking evidence of original investigation, for which reason these chapters constitute the most valuable portion of this treatise.

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DIE PRAXIS UND BETRIEBSKONTROLLE DER SCHWEFELSAEURE-FABRIKATION. Fueden Chemiker, Meister, Kammerfueherer, etc. Von Dr. S. Meirzinski. With 19 illustrations. Vienna and Leipzig: A. Hartleben. 1904. 16mo. Pp. 256. Price \$1.50.

This work may be considered a practical text-book on the manufacture of sulphuric acid. Under the heading "Chemical Control of Manufacture" only such processes are discussed which are actually in use in laboratories. These processes are so thoroughly and clearly described that even the unpracticed chemist may follow the steps described.

EVAPORATING, CONDENSING, AND COOLING APPARATUS. By E. Hausbrand. Translated by A. C. Wright, M.A., B.Sc. London: Scott, Greenwood & Co. New York: D. Van Nostrand Company. 1903. 8vo. Pp. 400. Price \$5 net.

It would be difficult to find a subject where the literature is as inadequate as that relating to evaporating and condensing apparatus, and the author has done a signal service to mechanical engineering in the production of the present book, which is an excellent one. That this book was needed is shown by the fact that the first German edition was exhausted in a very short time. The whole treatment of the subject is most scholarly. We regret that lack of space prevents our publishing at least an abstract of contents.

INDEX OF INVENTIONS For which Letters Patent of the United States were Issued for the Week Ending March 29, 1904.

AND EACH BEARING THAT DATE [See note at end of list about copies of these patents.]

Table listing inventions with patent numbers and dates. Includes items like Absorption apparatus, chemical, H. G. Schanche; Advertising card, W. T. & M. J. Sullivan; Aerial apparatus, J. Kaiser; Air brake mechanism, compound, E. G. Shortt; Alpha-xanthraquinone, making, Schmiel & Tust; Annealing steel, L. D. Davis; Atomizer, J. P. Farmer; Automatic gate, J. Ashton; Automatic switch, S. C. Tussing; Awl, pocket sewing, J. L. Davidson; Ax, J. E. Leathers; Axle box fastener, car, F. G. Koehler; Axle lubricator, C. J. Stone; Bag holder or rack and printing device, combination, W. A. O'Kane; Baling press, continuous, B. H. Linthicum; Band cutter and feeder, C. H. Hill; Bandage, suspensory, E. R. Drake; Barrel soaking apparatus, B. Banner; Bath tub, H. P. Colle; Bath tub, electric, J. Zwiebel; Batteries, current selector for charging secondary, M. R. Hutchison; Battery storage, protective sheath or envelop; Bearing, roller, R. F. Bower; Bearing spacer, wall, A. P. Smith, Jr.; Bearing, vertical shaft, E. M. Sanger; Bed attachment, E. E. Robertson; Bed bottom, spring, S. H. Anderson; Bed, folding or cabinet, H. Paschian; Beerwort distributor, R. Mally; Bell, W. W. Dean; Belt fastener, lady's, H. H. Taylor; Belt shifter, E. Kuthe; Belt shifter, H. J. Hoegh; Bench, See Washbench; Binder, J. O. Deckert; Binder, temporary, M. P. Exline; Bird trap, C. W. Gillis; Blinds, shutters, doors, etc. fastener for, G. Darling; Boat, submarine, S. Lake; Boiler furnace, steam, L. G. M. West; Boiler glass water gage, steam, G. S. Neely; Boiler headers, forming, J. P. Sneedon; Boiler water column, steam, G. H. Holland; Book and copy holder, stenographer's note, E. Sexton; Book marker and leaf holder, combined, C. L. Hrauda; Bottle closure, K. H. Cressman; Bottling machine, H. W. Colby; Brake, F. Stoltzenburg; Brake adjuster, R. E. Beatty; Braking system, C. J. Stelmets; Brazing cast iron, J. E. Tichon; Brazing compound, J. E. Tichon; Brick making machine, J. H. Venables; Bridge, J. Tomlinson; Brush, S. Zacek; Brush attachment, tooth, A. A. Petersen; Brush, fountain, H. A. Doten; Bucket, clam shell, W. K. Munroe; Bung mallet, J. M. Dieterle; Bunker, bin, etc., W. B. Napier; Bureau and wall trunk, combined, J. C. Lynch; Butter and making same, milk product resembling, J. H. Campbell; Button attaching machine, H. Kengood; Button, cuff, J. Pejchar; Buttoner, E. B. Kleinsmith; Cabinet, N. A. McDonald; Calculating machine, A. C. Jackson; Camera support, W. G. Geier; Camera swing back, photographic, H. W. Locke; Can, See Oil can; Can opener, R. P. Norton; Candle and shade holder, A. W. Hoffman; Candle molding machine, S. H. Leavenworth; Car brake, H. Jones; Car coupling, J. Meehan; Car coupling, auxiliary, J. W. Smith; Car coupling safety attachment, E. R. Trammell; Car coupling stirrup and centering device, railway, W. G. Cory; Car fender, A. E. McLean; Car fender, Heron & Crowley; Car fender, F. A. Schaaf; Car operating mechanism, dumping, S. J. Johnson; Car ventilators, hood or injector for, H. B. Rowland; Car window, street, H. Witte; Cars on sidings, means for holding, H. Smelser; Cars, stanchion and strip for loading lumber, poles, etc., upon flat, H. D. Hunt; Carpet stretcher, E. J. Stawar; Carpet surface, machine for trimming pile, B. S. Smith; Carpet sweeper, E. O. Murdick.

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