

NEW BOOKS, ETC.

LES MOTEURS A ESSENCE POUR AUTOMOBILES. By L. Marchis, Professor of Physics in the University of Bordeaux. Paris: Published by Vve. Ch. Dunod. 1904. 8vo. Pp. 470, 231 cuts. Price \$3.30.

This book is based on lectures given by the author at the University of Bordeaux, before audiences composed chiefly of engineers; but the work is not too technical for the average automobilist, and contains much that is useful to him. An introduction gives the early history of the automobile, and contains tables of speeds made in long-distance racing from the beginning of this sport. The first chapter treats of the various forms of hydro-carbon explosion motors used on automobiles, and of the means employed for studying them and measuring their power. Other chapters are devoted to methods of cooling, mechanically-operated and automatic inlet valves, governing, ignition systems, carbureters, mufflers, and methods of properly balancing motors, with the mechanical principles involved. One of the most important chapters contains rules of construction and operation to be followed in order to avoid fires. This book contains a great deal of valuable information, especially for all interested in the theories met with in automobile construction.

DIE KITTE UND KLEBMITTEL. Ausführliche Anleitung zur Darstellung aller Arten von Kitten und Klebmitteln fuer Glas, Porzellan, Metalle, Leder, Eisen, Stein, Holz, Wasserleitungs- und Dampfroehren. Von Sigmund Lehner. Sixth revised edition. Vienna and Leipzig: A. Hartleben. 1904. 16mo. Pp. 136. Price \$1.00.

We have already reviewed the earlier editions of this work on adhesives, at some length, for which reason it is hardly necessary to enter into a second discussion. It should be observed, however, that some portions of the work have been considerably amplified, notably the chapters on gas and water piping. There is hardly a single industry which does not employ an adhesive of some form in its processes. In this book will be found formulas and methods of applying cements, and the like, for glass, iron, porcelain, stone, wood, leather, and almost every material used in common life.

IRON, STEEL, AND OTHER ALLOYS. By Henry Marion Howe, Professor of Metallurgy in Columbia University in the City of New York. Boston: Sauveur & Whiting, 1903. Pp. xviii, 457. 8vo. Price \$5.00.

Alloys are most important in the arts, and we always welcome any addition to the literature of this branch of metallurgy. The present work deals with cooling curves, freezing point curves, the constitution of binary alloys which form no definite chemical compound, variations in electrical conductivity and other properties of series of alloys, the metallography of iron and steel, the heat treatment of steel and cast iron, the phase rule, progress in the manufacture of iron and steel between 1880 and 1900, the blast furnace and metallurgical gas furnaces. The book is a most helpful one to all serious students of metallurgy, and we have no hesitation in recommending it to our readers.

A TEXTBOOK OF ELECTRICAL MACHINERY. Vol. I. Electrical, Magnetic, and Electrostatic Circuits. By Harris J. Ryan, M.E., Henry H. Norris, M.E., and George L. Hoxie, M.M.E., Ph.D. New York: John Wiley & Sons. 1903. 8vo. Pp. 258. Price \$2.50.

The form of the material in this volume is the result of several years of experience in its use as a text for the instruction of classes in Cornell University. The book has been designed as a distinctly engineering text, not as a work on physics or applied mathematics. It is a book which will be found of great value to those who have mastered a fair amount of mathematics. It is illustrated by 134 figures, and is admirably printed.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending March 22, 1904.

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

Table listing inventions and their patent numbers, including items like 'Account register and desk slide', 'Acid, making nitric', 'Acid, manufacture of sulfuric', etc.

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Large table listing various inventions and their patent numbers, including items like 'Baling fibrous material', 'Ball catcher', 'Bank, I. H. Torjesen', etc.