

arranged so that it may lift a small armature. Supposing that a dilute acid be poured into one of the arms, will a current flow through the bridge and will it be sufficient to lift the small armature? I intend using a small relay to lift a heavier armature; also a glass vessel for holding the water and carbon electrodes. A. The question you ask regarding a water resistance has only the answer that the current will lift the armature of an electro-magnet if you make it strong enough. The only way to determine the matter is to make the experiment. 2. Can a small dynamo be used for charging a condenser or, in other words, is it possible to charge a Leyden jar to the same capacity as with a frictional electric machine, by a direct continuous current? A. A dynamo will charge a condenser to its own voltage and no higher. It may be 110 volts, or some other voltage. When that is reached the action stops. As a friction machine has many thousands of volts in its spark, it can charge a condenser to a much greater height than a dynamo can do. An alternating current will not charge a condenser; a continuous current will do so.

NEW BOOKS, ETC.

THE WAR IN THE AIR AND PARTICULARLY HOW MR. BERT SMALLWAYS FARED WHILE IT LASTED. By H. G. Wells. New York: The Macmillan Company, 1908. 12mo.; 395 pages. Price, \$1.50.

The author leads up to a peculiar situation in which the cockney hero finds himself marooned on Goat Island with the bridge to the American shore destroyed by the wreckage of a dirigible balloon, and cut off from the main land by the swirling Rapids. The hero, however, succeeds in getting hold of a damaged Japanese "heavier-than-air" machine and escapes. The book is filled with the most romantic, but not altogether impossible incidents. There is no question that the dirigible balloon and the heavier-than-air machine are both destined to play a very important part in the wars of the future. Mr. Wells writes as entertainingly as ever and is never unscientific. It must be said that his knowledge of New York geography is impeccable.

THE TEMPERATURE-ENTROPY DIAGRAM. By Charles W. Berry. New York: John Wiley & Sons, 1908. 12mo.; 300 pages, 109 illustrations. Price, \$2.

In the revised edition of the Temperature-Entropy Diagram a more extended application of the principles of the T-phi-analysis to advanced problems of thermo-dynamics has been made than was possible in the limited scope of the previous edition. The chapter on the flow of fluids has been entirely rewritten and treats at length various irreversible processes. A graphical method of projecting from the p-v into the T-phi-plane has been elaborated for perfect gases and its application illustrated in the chapters on hot-air engines and gas engines. The various factors affecting the cylinder efficiency of both gas and steam-engines have been thoroughly discussed. One chapter has been devoted to the thermodynamics of mixtures of gases and vapors, and another to the description and use of Mollier's total energy-entropy diagram.

THE MECHANICAL ENGINEERING OF STEAM POWER PLANTS. By Frederic Remsen Hutton, E.M., Sc.D. New York: John Wiley & Sons, 1908. 8vo.; 825 pages, 700 illustrations. Price, \$5 net.

A former edition of this book, issued in 1897, embodied the study and experience of the author gathered during the previous twenty years and brought together for teaching purposes. The years since then have been a period of great and rapid progress in the power plant and in all engineering departments contributory thereto; and while the old edition was modernized here and there and year by year, the time had come with the opening decade of the twentieth century that it be rewritten entirely. The present edition is the result of such rewriting. It is a new book so much enlarged that the old plates could not be used, but the size of page has been increased, new illustrations chosen, and many new topics and treatments have been introduced. While the former approved analytical view-point is retained and amplified, there has also been introduced a discussion in many chapters of the principles and data of applied mechanics attaching to the subject in hand. This has been done to enable teachers who desire to enliven the drill in the mathematical classes to find practical problems and applications of interest and future meaning, and to encourage teachers of the applications of theory to find easily the links and bases for such sound applications. The distinction between the applied thermal principles and those derivable from other departments of theory should tend also to clearness and benefit.

ALONG THE RIVIERA, FRANCE AND ITALY. Written and illustrated by Gordon Home. London: J. M. Dent & Co., 1908. New York: The Macmillan Company. 8vo.; pp. 328. Price, \$3 net.

This is a beautifully made book, with most charming colored illustrations. The Riviera may be described as a collection of jewels strung together at irregular intervals on a rough mountain chain. Some are genuine antiques, others are overlaid with modern workmanship, and they vary much in size and

shape, but the mediæval holds good nevertheless. It has been the author's endeavor to describe every place along the whole coast from Marseilles to Pisa, omitting only a few towns close to Genoa which have suffered through the growth of factories and uninteresting houses. There is nothing more delightful than an automobile trip over the perfect roads of the Riviera, and thousands of enthusiasts take this trip each year. The book is beautifully printed and bound and belongs to the series known as "Old World Travel." The aim of this new series is to describe both by pen and brush those parts of the Old World which travelers find most worthy of their attention, and to do for countries and districts what the same publishers' well-known "Mediæval Town" series has done for cities. The various volumes will prove not only welcome to the traveler during his visit, but will serve as pleasant reminders of bygone days, and will also bring the different districts vividly before the minds of those who are unable to leave home. The colored illustrations are in all cases reproduced from drawings actually made on the spot.

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INDEX OF INVENTIONS
For which Letters Patent of the United States were Issued for the Week Ending December 1, 1908.

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

Table listing inventions with their respective patent numbers. Includes items like Acetylene generator, Agricultural implement, Air and gas compressor, etc.

Table listing inventions with their respective patent numbers. Includes items like Car, C. K. Pickles, Car cable grip, tram, H. O. Ofstad, Car door, S. P. Massey, etc.

Table listing inventions with their respective patent numbers. Includes items like Explosive engine, A. F. Towle, Explosive engine, R. A. Maples, Explosive engine, R. A. Maples, etc.