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CONTENTS.

| | |
|---|-----|
| Book Reviews: | |
| Gear Cutting in Theory and Practice | 677 |
| Roads and Pavements | 677 |
| Poor's Manual of Railroads for 1914 | 677 |
| Industrial Training and Technical Education | 677 |
| Canadian Patent Law and Practice | 678 |
| The Gyroscope | 678 |
| Egyptian Irrigation | 679 |
| Outlines of Railway Economics | 679 |
| Suspension Bridges | 680 |
| Publications Received | 681 |
| Catalogues Received | 681 |

BOOK REVIEWS.

Gear Cutting in Theory and Practice.—By Jas. G. Horner, A.M.I.Mech.E., published by Emmott & Co., Limited, Manchester and London, as one of their "Mechanical World Series;" 391 x xii. pp.; 367 illustrations; size 6 x 9 in.; cloth; price \$2 net.

This is a very useful book for the mechanical engineer and shop man. It is practically devoid of technical formulae, the author endeavoring to incorporate the later developments of the art in a reasonably comprehensive manner rather than to enter into a necessarily long theory of design of gear teeth. The association of practice with principles has evidently been his aim throughout and in this he has for the most part succeeded. His illustrations are many and are well chosen, and his writing is of a readily understandable nature.

The book comprises 18 chapters in four sections, the first of which covers the principles of design; the second, methods of gear cutting; the third, machines, including cutters, planers, milling machines, etc. Section 4, deals with materials, manufacture and strength of gears. An appendix consists of very useful tables for mechanical engineering.

There are several instances where the author does not make himself clear. In one or two cases his terminology is undoubtedly at variance with that which is almost universally accepted. These slips are unimportant, however, and are not misleading to the man familiar with the machinery of gears or the principles of their design. To counteract them he will find a great deal of very useful information with which to supplement his previous knowledge by the later developments in engineering practice.

Roads and Pavements.—By Ira O. Baker, C.E., M.Am.Soc.-C.E., Professor of Civil Engineering, University of Illinois. Published by John Wiley and Sons, New York, Canadian Selling Agents, Renouf Publishing Company, Montreal; 698 pp.; 171 illustrations; size 6 x 9 in.; cloth; price \$5.

The second edition of Dr. Baker's treatise on Roads and Pavements is an enlargement upon the previous edition, but the incorporation into it of an additional chapter of over 40 pages on the subject of automobile roads and concrete

pavements, and by the bringing up-to-date of the original edition, which will be remembered as having been accepted 10 years ago as an excellent treatise on this subject. In the new edition the concise but comprehensive style of the author is evident throughout. Part 1, deals with country roads, their location, economics of various kinds. It comprises seven chapters. Part 2, contains 14 chapters on street pavements covering economics, design, drainage, foundation, more important kinds and the comparison of them. A chapter is also devoted to sidewalks. In the newly added chapter mentioned above appears a summary of the modern and changed practices which the advent of the motor vehicle has necessitated. It discusses effect of automobiles upon roads; method of suppressing dust; methods of forming a protective covering; construction of bituminous macadam roads and of concrete roads. In the latter various specifications have been summarized. The whole chapter is well condensed and orderly, and adds materially to the value of the book.

Poor's Manual of Railroads for 1914.—Published by Poor's Railroad Manual Company, 535 Pearl Street, New York; 2,052 pp. of text; size 7 x 9 in. This is the 47th annual number of Poor's Standard Manual. It is devoted entirely to steam railroad securities, and is published separately, Poor's Manuals of Public Utilities and of Industrials respectively to be published at a later date.

The special feature this year is the information part given in the manual showing whether or not interest on railroad bonds is payable without deduction for the United States income tax. It contains other new features, including about 500 new comparative and analytical tables, all contributed to assist the investor in forming an opinion of the value of railroad securities. It is needless to say that this manual is the most reliable and carefully compiled work of its kind on the subject of American roads.

Industrial Training and Technical Education. Part 4, of the report of the Royal Commission on Industrial Training and Technical Education, Jas. W. Robertson, Chairman, 770 pp.; 6 x 9 in.; cloth.

This part of the report deals with the inquiry in Canada. The provinces are taken separately. An outline of the educational system of each, provisions for technical instruction, a summary of testimony as to industrial workers, steel, iron and coal, agriculture and agricultural education are divisions typical of the classification of the inquiry.

Canadian Patent Law and Practice.—By Harold Fisher, B.A., LL.B., and Russel S. Smart, B.A., M.E., with an appendix on Canadian Patent Office Practice, by W. J. Lynch, I.S.O.; published by Canada Law Book Company, Limited, Toronto; 478-xxxii. pp.; 6 in. x 9 in., half leather binding; price, \$7.50.

There are many ways in which this book will be found of distinct value by not only patent attorneys and solicitors, but by engineers who have frequent occasion to investigate patent claims or regulations respecting them.