

Book Reviews.

MACHINE DESIGN; HOISTS, DERRICKS and Cranes. By H. D. Hess, M.E., Professor of Machine Design, Cornell University. 368 pages, 6½ by 9½ ins., 336 illustrations. Published by J. B. Lippincott Co., Philadelphia, Pa. Price, \$5 net.

Many and varied are the works to be found on machine design, but a new and practically untouched field has been treated upon in this latest book on the subject, for the matter of crane design in the past has been left, for the most part, to the development of the individual designer. This will be realized by all of that vast body of construction engineers who have required from time to time to design or replace a crane for special work. While dealing principally on crane design, the book has been written with the object of making the information contained of value to all machine designers, for after all the fundamentals of design are the same for all work. The attractive feature of the work is the manner in which practical problems are considered, and the design completely evolved from the fundamental principles, enabling the student to apply the information with which he is equipped, the author realizing that the principal difficulty with the study of machine design lies in the inability of the student to properly apply the information gained in his study of the subject. The book commences at the bottom in a logical manner, dealing first thoroughly with the common materials of construction, noting, in a practical manner, the considerations underlying the selection of the material to be used. From that basis the subject is developed. The book is divided into 12 parts as follows:—Introduction, Frames and Girders, Brakes and Clutches, Winches and Hoists, Pillar Cranes, Jib Cranes, Under Braced Jib Crane, Inverted Post Crane, Wall Crane, Overhead Electric Travelling Cranes, Hoisting Engines and Locomotive Cranes. The subject of cranes is thus approached from all angles, and should prove of particular value to all structural designers, as well as designers of machines.

THEORY OF MECHANICS. R. W. Angus, Professor of Mechanical Engineering, University of Toronto. 6¾ x 9¼ ins.; 238 pages; 147 illustrations. Published by Engineering Society, University of Toronto. Price, \$3.

This book is written primarily for the student, the theory underlying machine design alone being touched upon, and in a very thorough manner, the design being considered a separate matter as far as the basic principles of mechanics are concerned. In a general way, the book follows the course of lectures given in the University of Toronto's mechanical engineering department, and as such, represents years of preparation and simplification of explanations, making the work of particular value to all who are desirous of delving into the subject unaided by teachers, the matter laid down in the book being particularly lucid. There are 25 chapters as follows:—The Nature of the Machine, Motion in Machines, Velocity Diagrams, The Motion Diagram, Toothed Gearing, Bevel and Spiral Gearing, Trains of Gearing, Cams, Forces Acting in Machines, Crank Effort and Turning Moment Diagrams, The Efficiency of Machines, Governors, Speed Fluctuations in Machinery, the Proper Weight of Fly Wheels, and Accelerations in Machinery. Most of the treatment followed in the book is that conventionally adopted in most treatises, with the exception of the matter on motion in mechanisms, which is treated by a method called the "phoro-

graph," an improvement on the virtual centre method, invented by Prof. Rosebrugh of the same university. The principal criticism on the book lies in the illustrations, which are crudely gotten up. Printed on heavily coated paper the book would otherwise be a work of art, and it seems unfortunate that it should be marred in such a manner. Fortunately, the value of the work as a text book is in no way decreased thereby.

Among the Express Companies.

The Canadian Northern Ex. Co. has opened offices at Decker, Grays, and Grosse Isle, Man.; and at Macrorie and St. Gregor, Sask.

The Board of Railway Commissioners has approved the British American Ex. Co's standard mileage tariff of maximum tolls for freight classified as merchandise, C.R. C.I., to become effective, Jan. 1.

The Board of Railway Commissioners has rescinded its order 16896, June 24, 1912, which defined the express delivery and collection limits for Montreal, and has established new delivery and collection limits covering Montreal, Westmount and Maisonneuve.

D. I. Roberts, heretofore General Manager and General Freight and Passenger Agent, Quebec, Montreal and Southern Ry., and Napierville Jet. Ry., and General Canadian Passenger Agent, Delaware and Hudson Co., Montreal, is reported to have been appointed President, United States Ex. Co.

The Canadian Northern Ex. Co. has closed its office at Bala Park, Ont., for the season. Shipments for Muskoka lakes points which bill on Port Carling during the winter are being handled via Bala Road and stage since Dec. 1. An office has been opened at Mafeking, Man., and the office at Birch River, Man., has been closed.

The Board of Railway Commissioners has passed orders establishing collecting and delivery limits as follows:—For Canadian Express Co., in Sackville and Sussex, N.B.; for Dominion Express Co., in Windsor and Yarmouth, N.S.; Sackville, Sussex and Woodstock, N.B.; McLeod, Alta.; for Halifax and South Western Ry's. express department, in Yarmouth, N.S.

The Minister of Railways has announced that arrangements have been made whereby the Dominion Ex. Co. will place its service on the Intercolonial Ry. and the Prince Edward Island Ry., and all Government railway branches, from Jan. 1, in addition to the service given by the Canadian Ex. Co., which has hitherto operated exclusively, over the Government lines.

W. W. Kemp, agent, Canadian Ex. Co., Portland, Me., has retired from the service after 50 years' continuous service with the company, under the provisions of the pension rules. The whole of his service has been at Portland, and he was appointed agent there, Mar. 26, 1903. John Pullen, President, wrote him recently conveying the company's thanks for faithful and efficient work.

The Dominion Ex. Co. has moved its shipping department in Winnipeg from the old quarters at the C.P.R. station to the new express building on the west side of Main street. The public entrance is at 714 Main street, and the team entrance at the head of King street, near the C.P.R. tracks. The company's business office will continue to be maintained at 212 Bannatyne avenue.

In the Divisional Court at Toronto, Nov. 15, judgment was given in the case of Wilkinson vs. Canadian Express Co., on an appeal by plaintiff from the judgment of

Winchester, S. J., of the County of York, of Sept. 12, 1912, in an action to recover \$500 for the value of a magic lantern and slides alleged to have been lost by defendants in transit and for damages. At the trial judgment was awarded plaintiff for \$50 with costs up to payment into court and no set-off allowed to defendant. The Divisional Court gave the following judgment on the appeal:—The plaintiff is not within the special contract at all. The company is liable in our view for the full value of the goods. There is nothing to prevent the express company agreeing to pay twice the value of the goods carried, the order of the Railway Board notwithstanding. In this case what the company did was to take the plaintiff's goods as a common carrier and lost them without limiting its liability to him. The evidence justifies a verdict for \$280, and we think plaintiff should have judgment for that sum, with costs here and below.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers to distinctly understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

THE CANADIAN WESTINGHOUSE CO. has declared a bonus of 2% in addition to the regular quarterly dividend of 1¼%, making a total distribution of 9% for 1912.

FRANKLIN RAILWAY SUPPLY CO., New York City, announces that Alan Lichtenhein, son of the late A. Lichtenhein, has entered its service and will look after its Canadian interests, as his father did up to the time of his recent fatal illness.

THE AMERICAN VANADIUM CO. Announces that on 30 Pacific type locomotives being built for the C.P.R. by the Montreal Locomotive Works the following parts will be made of Vanadium steel: main driving axles, piston rods, main crank pins and main frames. These locomotives will have a total weight of 220,000 lbs.

THE STANDARD UNDERGROUND Cable Co. of Canada, Ltd., Hamilton, Ont., has issued a booklet, "Sterling Rubber Insulated Wire and Cable," which will be sent on application to anyone interested. It explains the company's position as manufacturer of standard products, the company having been established so that the increasing Canadian business of the Standard Underground Cable Company, Pittsburgh, Pa., might be handled with economy and dispatch. Full particulars are given of the sterling rubber insulated wire made by the Canadian company in Hamilton, which is guaranteed as being identical in quality with that made by the U.S. company.

THE JOLIETTE STEEL CORPORATION, Ltd., has been formed with an authorized capital of \$2,000,000, to take over the Joliette Steel & Iron Foundry, Ltd., at process converter steel castings, etc. The process converter steel castings, &c. The building of the new plant, which will have a capacity of four times the present one, will be started in February or March. The C.P.R. has put in a half mile spur to the site and there is also a good connection with the Canadian Northern Ry. Shawinigan electric power will be used. S. Visot, manager of the Joliette Steel and Iron Foundry Co., will be manager of the new company.