

# The Canadian Engineer

ESTABLISHED 1893.

Issued Weekly in the interests of the

CIVIL, MECHANICAL, STRUCTURAL, ELECTRICAL, MARINE AND  
MINING ENGINEER, THE SURVEYOR, THE  
MANUFACTURER, AND THE  
CONTRACTOR.

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Present Terms of Subscription, payable in advance:

Canada and Great Britain:		United States and other Countries:	
One Year	\$3.00	One Year	\$3.50
Six Months	1.75	Six Months	2.00
Three Months	1.00	Three Months	1.25

Copies Antedating This Issue by Two Months or More, 25 Cents.

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Berlin, S.W., 68. Telephone IV., 3198; Telegrams, Advertise, Berlin.Address all communications to the Company and not to individuals.  
Everything affecting the editorial department should be directed to the  
Editor.The Canadian Engineer absorbed The Canadian Cement and Concrete  
Review in 1910.

## NOTICE TO ADVERTISERS.

Changes of advertisement copy should reach the Head Office two  
weeks before the date of publication, except in cases where proofs are to  
be mailed to distant points, for which due time should be allowed.Printed at the Office of The Monetary Times Printing Company,  
Limited, Toronto, Canada.

Vol. 19. TORONTO, CANADA, DEC. 15, 1910. No. 24.

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## THE INDUSTRIAL ENGINEER.

What is an Industrial Engineer? What does he engineer, how does he engineer it, and what results does he obtain? We all know the function of the civil, the mechanical, the electrical or the mining engineer—those men who study and harness for the use of mankind the forces of nature. They are the appliers of "Applied Science." But this does not tell us about this comparatively new species, the "Industrial Engineer." Perhaps a concrete example may best illustrate the functions exercised by him. The following case is chosen from one of many among the records of the firm of industrial engineers, Lockwood, Greene & Co., of Boston, as a typical problem presented by a large manufacturing concern, and illustrates the broad field of endeavor covered by the industrial engineer.

The case in question is that of a large corporation owning three textile mills, which, on account of various factors and on account of peculiar market conditions, had not been earning the dividends which they should for some time. The owners wished to know what could be done in order to put their properties on a firm footing. To do this the engineers approached the problem in the following manner:; First, they obtained by means of a detailed inventory the value of each mill separately. Second, they considered the possibility of the profitable running of the mills as a whole or as separate units. Third, they prepared plans and made recommendations for the reorganization and rearrangement of all the mills, either as separate units or together. Fourth, they submitted an estimate of the cost to put each mill or to put the entire property into first class shape. Fifth, they prepared estimates on the amount of capital required to operate the plant as a whole or each mill as a separate unit. Sixth, they made recommendations as regards the manner of selling the output.

It will be seen from the foregoing that the engineers had to study the problem from four sides; that of the mill architect and designing engineer as regards placing the value on the plant, from that of the operating engineer, from the point of view of the financier, and last, but by no means least, from the point of view of the merchant. From the foregoing we may possibly formulate a more or less accurate idea of the function of the industrial engineer and the broad field of endeavor which he undertakes. He is not only the engineer of the forces of nature, but he must be the engineer of human beings, and in addition he must have a thorough working acquaintance with those intangible but most necessary factors of business, finance and selling. In a word, he may be likened to the coach of the football team, upon whom rests the task of developing team play.

A team may, of course, get together and make a creditable showing without the assistance of a coach, but in competition with the more highly specialized teams, developed through proper coaching, the uncoached team will be at a big disadvantage. In these days of keen competition in business it is only the manufacturer who is operating on the most efficient basis, who has the most effective team play, the most balanced plant, who will in the long run be able to last through the game and come out victorious in the end.