The Canadian Engineer

ESTABLISHED 1893.

ISSUED WEEKLY in the interests of the CIVIL, MECHANICAL, STRUCTURAL, ELECTRICAL, RAILROAD, MARINE AND MINING ENGINEER, THE SURVEYOR, THE MANUFACTURER, AND THE CONTRACTOR.

JAMES J. SALMOND, MANAGING DIRECTOR

T. H. HOGG, B.A.Sc. MANAGING EDITOR — A. E. JENNINGS, ADVERTISING MANAGER — P. G. CHERRY, B.A.Sc. CIRCULATION MANAGER

Present Terms of Subscription, payable in advance

Postpaid to any address in the Postal Union:

One Year	Six Months	Three Months
$3.00 (12s.)	**$1.75** (7s.)	**$1.00** (4s.)

Copies Antedating This Issue by More Than One Month, **25** Cents Each.
Copies Antedating This Issue by More Than Six Months, **50** Cents Each.
ADVERTISING RATES ON APPLICATION.

HEAD OFFICE: 62 Church Street, and Court Street, Toronto, Ont. Telephone Main **7404, 7405** or **7406**, branch exchange connecting all departments. Cable Address: "ENGINEER, Toronto."

Montreal Office: Rooms 617 and 628 Transportation Building, T. C Allum, Editorial Representative, Phone Main 8436.

Winnipeg Office: Room 820, Union Bank Building. Phone M. 2914. G. W. Goodall, Business and Editorial Representative.

London Office: Grand Trunk Building, Cockspur Street, Trafalgar Square. T R. Clougher, Business and Editorial Representative. Telephone 527 Central

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 submitted, for which the necessary extra time should be allowed.

NOTICE TO SUBSCRIBERS

When changing your mailing instructions be sure and give your old address in full as well as your new address.

Printed at the Office of The Monetary Times Printing Company Limited, Toronto, Canada.

Vol. 23. TORONTO, CANADA, NOVEMBER 7, 1912. No. 19

CONTENTS OF THIS ISSUE.

PROTECTION OF CANAL LOCK GATES.

The protection of canal lock gates from possible injury from vessels is most important. Injury to the gates always means delay of less or greater length of time, and delay during navigation season on important traffic routes is most serious. Conditions demand the utmost facility in passing vessels through the canal during the open season.

An accident on the Welland Canal last week makes a total of five to date this season. This accident, which is noted in another column of this week's issue, is very similar to the others which have occurred this season. It caused a delay of some forty-eight hours in the operation of the canal, at the close of the season, when it is most important that the route should be open. The necessity for more adequate protection for the lock gates is very apparent. The Gowan safety device, which was described in a recent issue of *The Canadian Engineer*, has been very successful on the Welland Canal as a protection for vessels striking the gates lightly and forcing them open. This device consists of four very strong cast-steel fingers, two on each leaf of the gate, one towards the top and the other towards the bottom. These fingers project a couple of feet beyond the miter, so that one leaf can be pushed back very nearly the full length of the finger, but still give support to the opposite leaf. As vessels rarely hit the gates with great speed, this device prevents a number of accidents which would otherwise occur.

The number of serious accidents which have occurred this year, however, demonstrates the fact that a more efficient means of protection must be used.

The Panama Canal gates are protected by chain fenders. The function of these fenders is to prevent the lock gates from being rammed by a ship that may approach too near the gates under its own steam, or by escaping from the towing locomotives. In operation the chain is stretched across the lock chamber from the top of the opposing wall; when it is desired to allow a ship to pass the chain is lowered into a groove made for the purpose in the lock floor, and is raised again after the ship has passed. A hydraulically operated system of cylinders holds the ends of the chain. If a vessel should run into the fender, the chain is paid out gradually by an automatic release until the vessel comes to a stop.

It is time that the lock gates of the Welland Canal were equipped with some such protection as this. The capital cost of installing such devices is insignificant as compared with the resulting damage and delay due to these constantly recurring accidents.

ACCIDENTS AND SAFETY PRECAUTIONS.

This week a railroad collision in Ontario accounted for several deaths and a large number of injuries. A prominent citizen in an automobile on his way to the station to meet the hospital train, was sufficiently hurt in a street car collision to prevent him from proceeding on his errand of mercy. These two incidents are passing from memory with the usual few days' wonder, indignation and sympathy. Within a week or so the stories will be buried in official records and newspaper files. Leaving them out of consideration, for the moment, they are still a grim reminder of the toll this country is paying for its craze for speed, its disrespect for human life. Every day brings its tragedies which might have been averted were the desire for haste reduced and the respect for the individual life increased. Is the price we pay for our much-vaunted hustle worth the hustle