

dents in the engineering courses and in medicine are given the opportunity of doing post-graduate work, for which they receive a nominal salary. Their energies are controlled by the Provincial Board of Health, and their work is mainly directed to research in the operation of purification units and apparatus. The Legislature grants an appropriation each year for this work.

Some few months ago, in order that further advantage might be taken of the control exercised by the Provincial Board of Health and to assist in reporting upon extensions requiring the approval of the Board, standard regulation and application forms were designed in the office of the Board—one for water and one for sewage. These forms were referred to some seven of our representative city engineers for comments before being approved as a Regulation under the Act. In arranging these forms the endeavor has been to ask of the designing engineer such information as should rightly be in his possession when designing work of this character. To careless engineers the information required seems to be rather burdensome, but to those who have introduced an orderly habit into their work it causes no inconvenience whatsoever. It is the intention of the Board to circulate the information received through municipalities, so that in a general way they may be informed of what their neighbors are doing, as well as the current prices obtained for different classes of material. It appears to the writer that the general result of this supervision will be towards the standardization of all work of this class in the province. Such a consummation is one which we all know to be to the utmost advantage of all concerned. Efforts of this kind must needs be slow in their onward march. Advances which threaten to centralize power are not as a rule well received by the uninformed.

PROGRESS IN STEAM TURBINE PRACTICE.

"Engineering" recently printed a letter giving figures of the steam consumption per kilowatt-hour of three turbines installed at different dates in the St. Pancras Borough electric station. The principal figures are as follow:—

	Date installed	Kilo-watts	Full load	3/4 load	1/2 load	1/4 load
Reciprocating engines	1903	450	19.5	21.0	22.6	27.65
Turbo-direct current	1906	1,000	17.0	18.0	19.5	24.5
Turbo, alternating current	1909	2,200	16.15	17.1	18.85	22.8
Ljungstrom turbo-alternating	1914	1,000	12.75	13.57	14.67	17.76
Ljungstrom, guaranteed	5,000	11.8	12.38	13.4	15.9

A PORTABLE WINCH.

The construction of the New York subway necessitated the building of the portable motor-driven winch, which has since demonstrated its usefulness in many other fields. When used for lifting material out of the subway, a trestle or light frame work carrying a sheave is placed directly over the opening. The hoisting rope is passed over the sheave, given two or three turns around the friction drum, the motor started and the slack paid off as the material is hoisted. When used to assist teams in hauling loads up heavy grades, one end of the rope is fastened to the wagon tongue and the other end given several turns around the friction drum. Current is obtained from the 550-volt trolley circuit. The winch is manufactured in two sizes by the Dobbie Foundry and Machine Company, Niagara Falls, N.Y. The small outfit operates at a rope speed of 152, and the large one at 178 feet per minute. Westinghouse Electric compound-wound motors at 5 and 7 1/2 h.p. respectively are used to drive these outfits, which are said to be very light and compact and easily portable.

STRUCTURAL STEEL COST SYSTEM.

By H. Barrett Power.

THERE is probably no word which means more to the modern business man than the word "system." One of his principal problems to-day is to have a proper "cost" system in connection with his business, to enable him to see clearly his profits or losses on various jobs or contracts from time to time.

The following article refers particularly to "Structural Steel Costing," at which the writer has spent several

TIME - SHEET.

NAME *H. Smith* No. *5* DATE *Feb. 17/15*

JOB-Nº	SHOP		FIELD		OPERATION	REMARKS	HRS.	¢	AMT.
	FROM	TO	FROM	TO					
285	7-	12-			P.		5	25	1.25
262	1-	3-			B.S.		2	"	50
276			3-	5-	Placing columns		2	"	50
							9		2.25

Fig. 1.

LABOR-COST-SHEET.

NAME *Thompson & Co.* TIME *Shop*
 ADDRESS *32 Lansing Ave.* CONTRACT-Nº *285*

DATE	WAGON NO.	OPERATION	HRS.	¢	AMT.	DATE	WAGON NO.	OPERATION	HRS.	¢	AMT.	DATE	WAGON NO.	OPERATION	HRS.	¢	AMT.
Feb. 17	5	P.	5	25	1.25												

Binding space

Fig. 2.

MATERIAL-PURCHASE-SHEET.

NAME *Thompson & Co.*
 ADDRESS *32 Lansing Ave.* CONTRACT-Nº *285*

BO'T-FROM	DATE	DESCRIPTION	WEIGHT	¢	AMT.
<i>Barnes & Co.</i>	Feb. 14	12 bars 3/4" φ - 12'-0"	216	1.20	3.67
<i>Bell & Co.</i>	" 17	2 checked pl. 12' x 3/4" - 2'-0"	68	3.55	2.38
					6.05

Binding space

Fig. 3.