

operate the mines and mills of the former company, while pushing the property of the latter. The Anglo-American Iron Company, he says, could earn \$300,000 a year, and he asks the judgment in behalf of all the shareholders, except the defendant directors.

MEASURES AND RULES.*

BY P. TROWERN.

Before I enter on fractions or decimals I would like to tell you how the mechanics' rule was brought into use (our foot rule I mean). A long time ago measurements of land were made by a person stepping it, one foot before the other in a straight line, which were called so many steps by the land surveyor, and the small pieces were measured by their feet, the heel of one foot touching the toes of the other, which made it so many steps, and feet disputes soon arose between the people and the surveyors so that the Government had to make laws for the people, and in 1760 a number of men's feet were measured, and they came to the decision that a step should agree with 3 feet, called a yard, and that a foot should be divided into 12 equal parts, called inches, so you see the yard became a unit, and a foot was $\frac{1}{3}$ of a yard, a fraction or piece, and the inch, $\frac{1}{12}$ of a foot, became a fraction, or a small part of the 36 inch yard, a gold rod was made and marked off in feet and inches as a standard belonging to the Government in England. All countries do not agree with regard to the length of the foot; 46 French feet is equal to 49 English, 35 German feet are equal to 57 French; the Russian foot is equal to the English foot, the old Turin foot was equal to 20 inches, and the inch was divided into 12 parts; in all the Prussian States the length of the foot differed; the inch in England and Canada is divided into 8 parts to commemorate or keep before our eyes or knowledge the very useful and mechanical members of our bodies, our two hands and arms, our two legs and feet, equal 4 or $\frac{1}{2}$ inch, and our two eyes and our two ears make the 8 parts, or the vulgar fractions; this word was not then used as it is now, but to show the parts of the whole unit, the yard. The French said that we have as great a national right to show our love and respect to our five fingers and toes as to any other part of our body, which induced them to divide their foot into 10 parts, and their inches into 10 parts; by so doing they brought into general use among themselves the decimals, 5 on one hand and 5 on the other, equal 10, and 10 toes equal 20, and this $20 \times 5 = 100$, which they called a unit; this unit \times by 10 = 1,000, and so on. I will now draw your attention to the fractions of our 12 inch rule, we say so many feet, inches and eighths; what I conceive it to be our duty in this society is to keep before our mind the use of our rule and calculations of our foot rule; if you wish to practise fractions make your calculations with the different fractional parts of it, keeping before you our mechanic's rule as a unit; $\frac{1}{2}$ of 12 inches equals 6, $\frac{1}{4}$ equals 3, $\frac{1}{12}$ equals 1; the division of the 1 inch are vulgar fractions, $\frac{1}{2}$ of an inch equals 4.3, $\frac{1}{4}$ equals 2.3 and $\frac{1}{2}$ equal to 1 of the 8 parts the inch is divided into, or if you wish to divide it more, 1-16, 1-32 and so on, and to have mixed fractions you may say 1 foot 3 inches and $\frac{7}{8}$ and a 1-32; and if you wish to add a number of them together it is easily done.

In 1788 the French people asked their Government to have a standard by which all their weights and measures might be made and compared. A number of scientific men were called together to devise a standard, which they did by taking a fourth part of a meridian of circumference of the earth. This fourth part of the line was divided into 10,000,000 equal parts, and each part was called a metre, which is equal to about 39 English inches; this metre is divided by 10, and called a decimetre, and by 100 and called a centimetre, by 1,000 and called a millimetre. To obtain the other measures a cubical box was made, exactly on each of its sides 1-100 part of a metre, or one centimetre; this was filled with water at its greatest density, and the weight of this water was called a gramme; a gramme was divided by 100, and it was called a centigramme.

*From a paper read before No. 1 C. A. S. E.

METAL IMPORTS FROM GREAT BRITAIN.

The following are the sterling values of the imports from Great Britain of interest to the metal trades for the month of December, and the twelve months ending December, 1898-99.

	Month of Dec.		The year to December.	
	1898.	1899.	1898.	1899.
Hardware	£1,278	£2,299	£21,578	£21,69
Cutlery	2,831	4,102	51,374	53,795
Pig iron	42	2,043	11,043	38,366
Bar, etc.	1,429	1,133	10,478	34,061
Railroad	12	100	9,195	152,981
Hoops, sheets, etc.	1,627	1,282	63,605	111,653
Galvanized sheets	623	322	65,176	69,515
Tin plates	13,090	14,043	168,627	249,513
Cast, wrought, etc., iron	2,182	5,892	26,820	67,783
Old (for re-manufacture)	—	683	4,324	8,408
Steel	2,282	17,149	48,844	157,504
Lead	1,041	1,277	36,092	44,855
Tin, unwrought	759	1,979	16,601	25,922
Alkali	1,705	2,332	50,028	44,556
Cement	487	449	25,595	38,749

ONE FIRST-CLASS MARINE BOILER

Light feet long, 4 feet 8 inches wide, 26 23 tubes, 6 feet long. Allowed 115 lbs. steam. Been in use 4 years. DAVIS DRY DOCK CO., Kingston. 2-1

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Canadian Patent Rights in Meter for Recording the Volume of Water and Power used by hydraulic power plants. Correspondence solicited.

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A good Water Power, 300 horse, situated one half mile from railway, every facility for making siding to power. Address

J. D. THEUNISSON, Cookshire, Que.

Bridge Tenders Wanted.

Sealed Tenders (marked tenders for bridge) for the superstructure of a steel bridge over the South Nation River at Leamington, on the boundary line between Prescott and Russell, Ont., will be received by the undersigned up to the 20th January next, inclusive (1900).

Separate Tenders for the construction of the abutments of said bridge will be received by the undersigned up to said 20th day of January next, inclusive.

Plans and specifications of said bridge (iron work and masonry) may be seen and further information obtained, at the office of the undersigned, in the Court House in the Village of L'Orignal.

The lowest or any tender not necessarily accepted.

E. ABBOT JOHNSON,
Clerk United Counties of Prescott and Russell.

L'Orignal, December 12th, 1899.



ST. LAWRENCE CANALS

NOTICE TO ENGINE AND BOILER MAKERS.

Sealed Tenders addressed to the undersigned and endorsed "Tender for Engines and Boilers" will be received at this office until sixteen o'clock on Monday, 5th February 1900, for the construction &c of two non-condensing marine engines and a Clyde boiler.

Specification of the work can be seen at the office of the Chief Engineer of the Department of Railways and Canals at Ottawa, and at the Superintendent Engineer's Office, Cornwall, where forms of tenders can be obtained on and after Saturday, 20th January, 1900.

In the case of firms there must be attached the actual signatures of the full name, the nature of the occupation and place of residence of each member of the same, and, further, an accepted bank cheque for the sum of \$500 must accompany the tender; this accepted cheque must be endorsed over to the Minister of Railways and Canals, and will be forfeited if the party tendering declines entering into contract for work at the rates and terms stated in the offer submitted. The accepted cheque thus sent in will be returned to the respective parties whose tenders are not accepted.

The lowest or any tender not necessarily accepted.

By order,

L. K. JONES
Secretary

Department of Railways and Canals,
Ottawa, 15th January, 1900.

Newspapers inserting this advertisement without authority from the Department will not be paid for it.