

to Great Britain is about 15 per cent., being in value \$623,616, Newfoundland, Germany, the Sandwich Islands, Australia, the Argentine Republic, the East and West Indies coming next as purchasers in succession. In order of value, the items exported are coal, gold, phosphates, iron and steel, silver, asbestos, gypsum, copper, lime and cement, stone and marble, manganese ore, grindstones, &c.

The value of imports of mineral substances or products is placed at \$27,166,966 for the year. The principal items are approximated thus:

Iron, pig and other, and steel	.....	\$11,000,000
Coal	.....	9,547,000
Glass and glassware	.....	1,234,000
Tin and manufactures of	.....	938,000
Brass	.....	501,000
Copper	.....	316,000
Lead	.....	257,000
Paints	.....	534,000
Petroleum	.....	435,000
Salt	.....	286,000
Precious stones	.....	259,000
Earthenware	.....	208,000
Portland cement	.....	169,000

#### SELLING GOODS IN WAREHOUSE.

It is not now discovered for the first time that the expenses incurred in selling goods by travellers on the road are in many cases far beyond due proportion to the profits made upon them. The pressure of such expenses, while it falls most heavily upon the houses whose sales are limited in yearly aggregate, is felt by every class of whole sale dealers to be onerous. We believe it to be true of every line of business that there is too much pressure used to force goods upon customers. As an importer puts it, "the unwilling buyer is coaxed and wheedled, or bullied and worried to buy, while the willing—and sometimes tricky—buyer is loaded up with foolish readiness." It is doubtless true that whole-sale merchants here and there make an honest effort to restrain this excessive forcing of merchandise upon retailers to an extent beyond their power to sell or to pay for. But it is next to impossible for isolated houses to combat with success a tendency so wide-spread. We are interested to hear of the plan pursued by a house in the book and and stationery trade, to overcome the annoying increase of expense connected with selling goods on the road. The Toronto News Company makes an offer to its customers, of this nature: Do not buy your goods from our travellers in advance of your requirements, but come into Toronto and visit our warehouse. To those who do this we will give a discount equal to the traveller's expenses. Considering the desirability of getting customers into warehouse, the plan outlined is one that might be copied with advantage.

#### CANADIAN COTTON MILLS.

The cotton industry in Canada is now a by no means inconsiderable one. There are twenty-three mills, with 11,000 looms, and more than half a million spindles. We find in the *Canadian Textile Directory* some interesting statistics about them.

The oldest among them is the Lybster mill at Merritton, near St. Catharines, Ont.,

which was built by Gordon & Mackay in 1860, and next in age, we believe, is the New Brunswick cotton mills, built by Messrs. Wm. Parks & Son in the following year. This was the only cotton mill in the Maritime Provinces until about 1882, from which year dates the erection of the Nova Scotia mill at Halifax, the Windsor, N. S., mill, and that at Moncton, N.B. Mr. Gibson's fine mill at Marysville was opened about 1886, the Yarmouth duck factory in 1884, and the St. Croix mill about the same time, all since the new protective tariff. Among the larger mills of Ontario and Quebec, those of the Stormont Company and the Canada Cotton Company date from 1872, the Hochelaga and the Merchants' from ten years later, while in the meantime, such was the spur that the National Policy gave to this industry, there had come into existence mills at Hamilton, Kingston, Brantford, and Dundas in Ontario, and at Coaticook, Chambly, and Valleyfield in Quebec, the last a large bleachery as well. Since then, namely in 1884, came the Merritton mill, then the enlargement of the Hochelaga, and latest of all the Magog print works, which have also, we believe, been enlarged. The aggregate number of looms in all these twenty-three mills is 11,370, and of spindles 529,100. The number of looms in the eight Maritime Province mills is 2,930, in the eight Ontario mills 3,103, and in the seven Quebec mills 5,338.

There are several cotton batting mills, yarn and warp factories in both Ontario and Quebec, but these do not appear in the list of cotton mills proper which we append. It is from the directory mentioned, and gives the location and capacity of the several cotton mills in the Dominion:

NEW BRUNSWICK.			
Name.	Looms.	Spindles.	
New Brunswick Cotton mills	100	15,000	
St. John Cotton mills	260	12,000	
Moncton	244	10,000	
Gibson	600	22,000	
St. Croix	957	30,000	
Total	2,161	89,000	
NOVA SCOTIA.			
Nova Scotia Cotton mills	450	20,000	
Windsor	270	11,000	
Yarmouth " Duck	48	4,500	
Total	768	35,500	
ONTARIO.			
Lybster	260	12,000	
Craven, Brantford	250	10,000	
Canada (Cornwall)	812	50,000	
Stormont	650	27,000	
Dundas	508	16,300	
Hamilton	65	6,000	
Kingston	310	11,000	
Merritton	248	12,000	
Total	3,103	144,000	
QUEBEC.			
Chambly	200	7,000	
Coaticook	250	12,000	
Magog (prints)	600	40,000	
Hochelaga	1,738	95,000	
"	500	25,000	
Merchants	700	27,000	
Valleyfield	1,400	54,300	
Total	5,338	260,300	
RECAPITULATION.			
	Mills.	Looms.	Spindles.
New Brunswick	5	2,161	89,000.
Nova Scotia	3	768	35,500.
Quebec	7	5,338	260,300.
Ontario	8	3,103	144,300.
Grand total	23	11,370	529,100.

#### EXPANSION ENGINES.

The question is asked by a thoughtful subscriber who has been reading of the improvement made of late years in the speed of ocean vessels: "Will you explain to a plain man what is the peculiarity of these compound or expansion engines we hear so much about? How have they 'affected the carrying trade of the world,' as I read not long since in a notice of the late William Elder, the Clyde shipbuilder, whose statue was unveiled at Govan the other day?"

Our correspondent's question is a very natural one, and the subject has doubtless puzzled more than him. The meaning of the term compound engine is an engine with more than one cylinder. What is designated the double or triple expansion engine, is one in which there are several cylinders, the pistons of which act upon the same shaft, and in which the same steam is used twice or thrice in succession, each time in a state of greater expansion. Thus, taking an ordinary case, a steam-engine with three cylinders of different sizes: steam is fed to the first and smallest of these at 100 pounds pressure, it does its work upon the first piston and is then passed into the second cylinder, where it takes effect at a lower pressure upon the piston and is then in turn ejected, to be used the third time in the last and largest cylinder. The great advantage here lies in the saving effected by the use of the same steam "expansively," that is, at different degrees of pressure in successive cylinders. Less steam is needed to do the same work and less fuel is required to produce steam.

A comparative statement of the saving effected is given in a recent number of the *Iron Trade Review*. That journal makes extracts from a description by Mr. W. Parker, Chief Engineer of Lloyds', concerning the comparative merits of compound and triple expansion engines, in marine service, as follows:

"Two large passenger steamers of over 4,500 gross tonnage, having engines of about 6,000 indicated horse power, built of the same dimensions, from the same lines, with similar propellers, are exactly alike in every respect except so far as their machinery is concerned, one working at a pressure of 145 lbs. per square inch, whilst the other vessel is fitted with ordinary compound engines, working at a pressure of 96 lbs. per square inch. Both vessels are engaged in the same trade, and steam at the same rate of speed, viz.: 12 knots per hour. The latter vessel on the round voyage, of 84 days, burns 1,200 tons more coal than the former.

"The performances of the next two vessels I am about to quote do not compare on a question of decreased consumption, but on one of enhanced carrying capacity, with an equal speed, and the same consumption of coal. The first vessel has a gross tonnage of about 2,220 tons, and is a modern type of ship. She is fitted with ordinary compound engines, working at a pressure of 90 lbs. per square inch, and carries when fully loaded 8,000 tons of cargo, including bunker coal. She steams