Erastus Wyman and the Lumber Trade.

Mr. Erastus Wyman—or Sir Erastus Wyman as some Canadians hope by-and-by to hail him—has been down to the Ancient Capital, in Quebec, giving his views on the question of Commercial Union. From a report of his speech, comprising several columns, THE LUMBERMAN has extracted the following views as expressed by him regarding the timber interests.

"In the matter of lumber no greater boom could happen to Canada than to break down the barrier which shuts her out from fair competition with the neighboring Republic. The lumber question in the United States was rapidly assuming great importance. It was alleged by some that within twenty-five years almost the entire stock of available lumber would disappear. The protection which had been afforded to the lumber interest in that country had been practically destruction, because they could in no sense replace the rapidly disappearing forests. The charge against Canadian lumbermen of two dollars a thousand had been a serious impediment, and, if for no other thing, unrestricted Reciprocity should be encouraged. The demand for lumber was likely to be very great. The growth of the great cities absorbed yearly more and more, aside from the treeless prairies, and the activity in providing homes and the necessity for enlarged building operations at almost every point in the neighboring republic made it the very best, as it was the nearest, market for the products of the forests of Quebec. There was not a lumber merchant in the city of Quebec, there was not a holder of lumber land throughout the Dominion, but would be benefited by an open market at a point so contiguous, so cheaply reached, as the points of receipt in the United States. If this was true with regard to lumber, what might not be the result in regard to all manufactures of which wood forms the bulk of the raw material. In the article *of furniture Canada aught to be the greatest producing region* on the Continent. She possesses no less than sixty-nine different varieties of wood, and throughout Quebec there is an infinite supply of the most attractive kinds of wood for interior decoration. The beautiful birdseye maple, the black ash, the oak and basswood, are all in abundant supply. Is there anything in the matter of furniture, the shape or form, taste or color, which the American possesses that the Canadian does not possess? Is there any device in beauty of construction, in strength, in skill, or in excellence, that could not be imitated in Quebec for the supply of the wants of the United States? Plenty of manufactories in the United States employ French Canadians, Germans, and foreign labor, in the production of the most elegant furniture, and it is safe to say to-day that in the large establishments of New York, Boston and Philadelphia, where could be found the most elegant furniture in the world, that seven-tenths of the labor employed is foreign labor, and that twenty-five per cent. of that is French-Canadian labor. The cheapness with which the furniture could be shipped West and distributed throughout the North-Western States and Territories, as compared with the cost of shipment from other Atlantic ports, would give us an enormous advantage at this point, while the cost of labor, of raw material, and the cheapness of power would be an advantage of the greatest possible value. It might not be that in the finest grades of furniture Quebec could compete, although in that it is difficult to see what barrier there is, but for the bulk of the supply of Western needs in furniture Quebec would have a great advantage. If in lumber and in furniture Quebec possessed advantages from her location and abundant supplies of wood, what would prevent her from being the greatest ship-building port of the Continent.

A Monster Raft.

The great raft that was launched at Two Rivers, N. S., November 15th, is 585 feet long, 62 feet wide and 37 feet deep, and weighs 9,000 tons. There were four ways 1,200 feet long, and the raft went slowly at first, but gathering speed ran a thousand feet, until she floated. She made the run in thirty-four seconds without the slightest strain, did not part a single chain nor spring the vast structure an inch. She was taken in tow by the tug Neptune, and the cradle removed at once. The raft draws 19½ feet, or six feet less than was expected. It was in 1883 that Hugh R. Robertson, of Two Rivers, conceived the idea of building a raft somewhat in the form of a ship, composed of logs cut in full lengths and firmly secured by chains. In the following year Mr. Robertson drew a plan of the proposed raft and patented it in the United States, Canada, Great Britain, Norway and Sweden. Early in 1885 Mr. Robertson visited New York and contracted with Wilson Godfrey, of 91 Wall street, for the construction of a raft afloat on the shore of the Bay of Fundy. In November of the same year B. B. Barnhill, of Two Rivers, N. S., contracted to furnish the lumber required for the raft and to build it ready for launching, according to plans and specifications prepared by Mr. Robertson. Mr. Barnhill began at once to prepare a place for the raft near the head of the bay—a place called "Finger Board," about six miles down the bay from the Joggins and about three from Shulee. The spot was admirably adapted for the purpose, and soon workmen were engaged in the construction of the raft. The raft was completed in August, 1886, and was almost as large as the Great Eastern, and full a third heavier. It contained over two million feet of lumber, being over 400 feet in length, 50 in width at the centre and 33 in depth, and 25 in diameter at either end. On the 31st of July, 1886, the first attempt was made to launch the raft, but it did not move. A second attempt was made the following day and the large mass ran down the ways nearly two hundred feet. There it remained, owing to the breaking of the ways. Several other attempts were made to launch the raft but without success. Then Mr. Robertson, who felt satisfied of the practicability of the scheme, decided to tear it apart and rebuild it. This was done and the new raft was finished a few days since. It is much larger than the first structure, being over 500 feet in length and containing about three million feet of timber. Its general form resembles that of a fat cigar, somewhat fastened at its upper and lower sides, with the pointed end cut off. It is one solid mass with the exception of movable interstices necessary in the packing of round lumber, in trees cut as long as they grow, from 30 to nearly 100 feet in length. The timber has been stowed with its small ends generally towards the end of the raft, which helps to give the proper taper, and it is so interlapped that great strength is attained to hinder the structure breaking in two. The patentable point in this system of rafting is the adjustment of the chains which bind the whole together. The main or centre chain runs from one end of the raft to the other, and it is that by which the structure is to be towed. The lateral chains are used to prevent the raft from working apart longitudinally by the action of the waves. The encircling chains are attached to the lateral chains, and are to prevent the raft from flattening out while afloat.

The Hon. William Goold, of Portland, the historian, has unearthed some ancient records showing that the timber raft above referred to has had some predecessors, says the *Industrial Journal*, of Bangor, Me. All of them were successfully launched but came to grief before reaching their destination. In 1792 a raft containing about 1,000 tons of timber was built at Swan island, in the Kenebec, by Dr. Tupper, a somewhat noted eccentric character. It was made by treenailing square timber together in the form of a ship's hull, and was ship rigged, the intention being to send her across to England. At that time no manufactured lumber was admitted into Great Britain; hence the timber in the raft was simply squared with the axe, to make it stow well. The ship or raft lay at Bath for some time, it being difficult to get men to go in her. She finally *went to sea, however, carrying a small vessel on her deck. But* off the Labrador coast her crew got frightened by bad weather and abandoned her. She was afterwards boarded by men from a passing vessel and found to be in good order, and it was suspected that she was deserted without sufficient cause. Two other similar attempts were made from the Kennebec, and both vessels went safely across, but foundered on the English coast, under the same suspicions of fraud as in the case of the Tupper ship. In 1825 the ship Baron of Renfrew was launched at Quebec, having made a previous unsuccessful attempt when she stopped on her ways, owing to the grease being consumed by the friction. She was towed down to the island of Orleans and anchored. Her dimensions are given as follows. Length, 309 feet; breadth, 60, feet; depth, 38 feet internally and 57 feet externally; tonnage, 5,888 tons; draft when launched, 24 feet; cargo on board when launched, 4,000 of timber. She was ship rigged, with four masts, and was perfectly flat bottom, and with a keel of about 12 inches; wall sided, sharp forward and rather lean aft, and looked more like a block of buildings than a ship. She sailed in August 1825, in command of a Scotchman, a half pay lieutenant in the British navy. October 27 the Baron of Renfrew drove on shore on the coast of France, near Calais, and went to pieces. And thus closes the record of ocean timber ships up to the Nova Scotia raft.

The Motive Power of the Future.

It is a recognized fact that the steam engine makes use of only a small fraction of the amount of fuel that is burned to run it. The nature of the machine is such that this fact is a necessary one. The fault does not lie in the workmanship, for the actual loss of power from imperfections in this respect is found (by the indicator) to be only about twelve or fifteen per cent. The cause of the low efficiency lies too deep to be overcome by any mechanical device, and it has often been remarked that the motor of the future must work on an entirely different principle.

Mr. Edison has invented a motor which transforms heat into mechanical energy without the intervention of either boilers, pistons or cylinders, and he is very hopeful of improving it so that it may become of practical use. We have examined drawings of it, however, and have become skeptical. The motor is electrical in nature, and in order to make it run it is necessary to heat and cool a piece of iron very rapidly. We doubt if this can be satisfactorily done.

The hot air engine is very inviting, but men like Ericsson and Siemens, after years of thought, have not brought it into successful competition with steam, although they were well acquainted with the theory of its action, and were vastly better prepared to make experiments than the fathers of the steam engines were.

The wind mill is too uncertain in its action to compete with steam, though the fact that it consumes nothing must become a very weighty consideration in its favor when our coal supply gives out.

The tide mill has never been very widely adopted, and hardly anyone thinks of it seriously as a rival of steam, but it is nevertheless possible to construct one that can produce power enough for the entire United States. A reservoir forty miles square, at or near the head of the Bay of Fundy, where the tides are very great, would contain sufficient water to generate 700,000 horse power for twelve hours; and this might be distributed electrically and sold in every State in the Union. When coal has become scarce the construction of such reservoirs may be attempted, so that power and light and perhaps heat also, generated in Nova Scotia, may be sold all over the continent.

Power obtained in this way would not come from nothing. If a tide plant like that we have suggested is ever constructed, it will lengthen the time of day. It will slow down the earth's rotation just as certainly as a big gear wheel would, if placed on the earth's axis and made to drive machinery; though the effect would be so slight, owing to the immense size of the earth, that the increase in the length of day would not be measurable for thousands of years.

The gas engine has proven itself very convenient in many places, and oil and powder engines are also in use; but all of these use fuel, so that, equally with the steam engine, they fail to solve the great problem that must face the world sooner or later, when the coal is gone. The engine of the future must draw its energy from some of the forces of nature, and it seems that it must be operated by wind, waves or tides, or by rivers, ocean currents or the direct rays of the sun. *Power.*

CHIPS AND SAWDUST.

THE art of paper making has reached a point where a tree may be cut down, made into paper, and turned out as a newspaper, in thirty-six hours.

IT is no use to expect shafting (and especially heavy shafting) to run well when it is crooked or the couplings are out of truth. The power used by this alone often amounts to a serious item of expense.

A BRITISH authority on the circular saw says: When having saws hammered, be sure they are placed in competent hands, we have seen saws that have been hammered by so called experts that might have been better done by a blacksmith's striker.

THERE is a good reason to suppose that there may be, not long hence, a craze for cypress the same as there has been for other woods from time to time. Cypress as a finishing lumber has this advantage over the hardwoods, or even over yellow pine—it is almost as easily worked as white pine.

A REMARKABLE imitation of black walnut has lately been made from poor pine, the quality and appearance of the article being such as almost to defy detection. To accomplish this one part of walnut-peel extract is mixed with six parts of water, and with this solution the wood is coated. When the material is half dry a solution of bichromate of potash with water is rubbed on it, and the made walnut is ready for use.

WOOD decays very rapidly when exposed to the alternate action of air and water, such as in the case of tidal rivers, but this is not the case when it is immersed in deep water or in still water that is not changed. The air contained in such water becomes exhausted of its oxygen, and the process of decay is arrested, or may never take place to any extent. Accordingly, it is found that piles driven in deep water, or in clay or mud, will remain sound for almost an indefinite length of time.

A MAN from Michigan, who was admitted to the Royal palace, at Amsterdam, Holland, passed if he or the newspapers don't lie through a door hung on brass hinges and secured by a brass lock, made in a Massachusetts factory, and saw the following further evidences of the spread of United States art and industry in the old world. A chair from Grand Rapids, Michigan, and a spittoon (he called it a "cuspidor,") from Baltimore, stood near. Over the mantel, which was of American design, hung a landscape by a Philadelphia man, Thos. Moran, and upon it were a Colorado stag vase and a box of Michigan tooth picks.