

the United States should now promptly exercise all lawful powers to protect and defend their own trans-continental lines against this Canadian competition. But it is when it takes a political view of the C. P. R. that the *Sun* waxes most bitter; it objects to the fact that this line makes a military highway along the United States northern frontier to England's colonies in the Pacific, and between her fortifications at Halifax, Quebec and Esquimalt. The Canadian Pacific Railway, it goes on to say, was built to strengthen and prolong British power upon this continent, and also to aid England in securing as much as possible of the traffic between the Pacific Ocean and Europe. Our bonding system directly aids her at the expense of our own people. The Canadian Pacific Railway Company is the most arrogant anti-American corporation upon this continent. By continuing the bonding system we are practically aiding the Government of Canada and Great Britain to destroy American investments in trans-continental railways.

SOME Canadian may compete for, and possibly win, one of the prizes offered by the *Société Française* during the next three or four years. A prize of \$2,280 will be made in 1898 for the discovery that is most useful to French industry. A prize of the same amount is given every three years by the society (the next award will be made in 1895) to the person making the most useful industrial discovery. The Henry Giffard prize of \$1,140 is awarded every six years (the next award will be in 1896) for services of signal value to French industry. The Metzen's prize of \$95 is awarded every three years (the next award will be in 1896) to the discoverer of a valuable chemical or physical application in electricity, ballistics or hygiene. The special prizes for 1894 are \$380 for a motor whose weight is not less than 50 kilogrammes per horse power; a prize of \$570 for an apparatus that shall decrease materially the smoke of furnaces, especially those under boilers; a prize of \$190 for a heavy oil engine; a prize of \$570 for a steam engine consuming at the maximum speed, under average load, seven kilogrammes of steam per horse power per hour; a prize of \$570 for the discovery of a substance that can be substituted completely for gutta-percha in at least one of its applications, or for work that will continue to develop the production or improve the cultivation of the gum. The following prizes are to be awarded in 1895: A prize of \$380 for a small motor designed for use in a shop located in a house; a prize of \$380 for the preparation industrially of ozone and means for its application; a prize of \$380 for an apparatus or a process which shall make it possible to measure or determine the insulation of the different parts of an electric installation while the current is on; a prize of \$570 for investigations which shall contribute to the discovery and application of the best means in domestic and general product for the purification of drinking water. Competitors must submit their proofs by the 31st of the December preceding the year on which the prize will be awarded.

Two fine steamers have just been built for the Northern Steamship Co., plying between Buffalo and Duluth, in connection with the Great Northern Railway. Some peculiarities are evident in the design of the hulls, these being constructed around the shafts in such a way as to give not only great strength to the vessels' after-body, but also to form as little resistance as possible, and also allow the water to pass freely to the wheels. The ships are fitted with Belleville boilers,

which were chosen owing to their light weight and ability to carry high pressure, for these steamers are intended to be the greyhounds of the lakes. One of these Great Lake steamers, the "Northwest," was launched on the 6th of January, in "lake-fashion." The location of the Cleveland yard, where the vessel was built, is such that the vessel had to be slid a distance of 60 feet and then dropped about five feet before touching the water. The effect of the sudden plunging into the lake of such an immense weight, about 4,200,000 pounds, was said to be quite startling, the water forming a huge wave, and rocking the vessel two and fro with some degree of violence.

FERDINAND SCHLESINGER thinks the iron interests of Lake Superior have not so much to fear from the importation of Cuban ore as they have from the development of Canadian deposits along the north shore of Lake Superior, which would be sure to follow the removal of duty. The *Marine Review* deems Mr. Schlesinger to be entirely correct. There are certainly immense quantities of good ore in the Canadian territory above Duluth, which has not been mined on account of the duty, and strangely enough, adds our contemporary, "this feature of the ore tariff question has been overlooked, while the argument against imported Cuban ore is open to the criticism that the long rail haul from the seaboard would prevent competition with Lake Superior ores west of the Alleghenies."

In the Exchequer Court recently an important judgment was given affecting the Canadian patent law. It was in the case of the *Queen v. Laforce*. The latter was granted letters patent for an improvement on pneumatic tires. Thomas Jeffrey, of Chicago, whose patent in Canada was dated two months later than Laforce's, but who had it patented in the United States prior to Laforce's, claimed that Laforce's patent should be set aside, as he (Jeffrey) was the inventor. Judgment was given in favor of Laforce, with costs.

A REPRESENTATIVE OF THE CANADIAN ENGINEER recently witnessed some tests made by Prof. Bovey, at McGill College, upon the strength of some samples of machine steel, and of some oak from Ottawa. The steel, which was in the form of a round bar 1 inch in diameter, broke at a tensile strain of 99,600 pounds, the yielding point (that at which the metal begins to elongate) being 47,600 pounds. The timber, which measured 4.55 inches square, bent and split up under a strain of 98,100 pounds.

A MINING and metallurgical exhibition is to be held in Santiago, Chili, beginning next September. It will include motive power, electricity, and general mining machinery. The cost of transporting exhibits, as well as men in charge thereof, will be defrayed, we understand, by the Chilian Government. Further information may be obtained of G. B. Day, Imperial Buildings, Montreal, the Consul-General for Chili.

A FLASH light on a new principle by Prof. Schevin is said to have been adopted by the German admiralty. The light is produced by running finely powdered magnesium through a bensoletted air flame. The flashes are stated to be visible even by day at over six miles distance. The light is equal to 400,000 candles, and will be especially useful in foggy weather.

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