

This firm—one of the largest concerns in Canada—are manufacturers of cut nails, horse shoes, railway spikes, tacks, small nails, bolts, nuts, rivets, etc.

Our *Little Ones*, the juvenile magazine heretofore praised in this journal, continues to make us its regular monthly visits, and each visit is more interesting than the preceding ones. The January number is filled with the very best and most entertaining Christmas and New Year stories, and the pictures illustrative of them are just too pretty. It is just the thing for the nursery and fireside, and the price—\$1.50 a year—places it within reach of all who have children and desire to contribute to their pleasure. Russell Publishing Company, Boston, Mass.

The Polson Iron Works Company have under construction at their ship yards at Owen Sound, Ont., a large steel barge to be called the *Seguin*, the contract for which has been given by the Parry Sound Lumber Company. This vessel is to be completed by the opening of navigation, and the steel ribs of the frame are already in position, and the work will be rapidly advanced on the hull. This barge is 215 feet long over all, with 34 feet beam. She will be driven by triple expansion engines of 17, 28 and 46-inch cylinders and 30-inch stroke. There will be two 10½ by 10 feet boilers, which will be worked by 160 pounds steam working pressure. It is believed that this will be one of the finest barges on the upper lakes.

The *National Magazine* for January announces two new and valuable departments—"Biblical Literature" and "Pedagogy"—with Rev. J. C. Quinn, Ph.D., and J. S. Mills, A.M., President of Western College, as editors. Agricultural readers will be especially interested in the new "Institute of Agriculture" described in this number—a part of the University Extension System of the National University of Chicago, whose non-resident or correspondence undergraduate and post-graduate courses have met with such favor. Other articles are by Prof. E. A. Birge, of the University of Wisconsin, and eminent specialists. Published at 147 Throop street, Chicago, Ill. Subscription, \$1.00 per year. Sample copy, 10 cents. Three cash prizes of \$50 each for the best essays on "Our Common Schools," "Study of the Bible," "How to Keep Young Men on the Farm," are announced.

Outing for January, 1890, is a most excellent number. The illustrations are superb, and the reading matter very good. We note "Wabun Anung," a tale of hunting in the Great Lake region, illustrated by Henry Sandham. "The Merits and Defects of the National Guard," illustrated, by Lieut. W. R. Hamilton, is an important contribution to the literature of the American militia. "Brant Shooting on Smith's Island," by Alexander Hunter, tells sportsmen where good shooting may be had at this season of the year. "Alligator Shooting in Florida," by J. M. Murphy, graphically describes a different kind of sport. A most readable and instructive paper is that by W. I. Lincoln Adams, on "Instantaneous Photography." This article is richly illustrated. One of the most interesting papers in the number is C. H. Shinn's "Wintering in California," with numerous illustrations. We notice further "Haak Fishing off Ireland's Eye," "Catching Frost Fish with a Shot Gun," "Ice Yachting," "Gymnastics for Ladies," and a most excellent paper on "Skating." The Editorial Department and Records are, as usual, replete with information on sporting events. Now is the time to subscribe for this excellent periodical. All newsdealers and postmasters act as agents.

THE Christmas number of the *Dominion Illustrated* cannot, of course, be expected to differ so materially from its other issues, as the special holiday numbers of ordinary papers. Every week it comes out in a form which, with slight modification, might be called by the name of Christmas, or Easter, or Carnival, summer or winter. The handsome and appropriate illustrations of the Christmas issue show, nevertheless, that the publishers have not been oblivious of the hallowed and ever-welcome season. A fine double-page reproduction of Le Rolle's "Gloria in Excelcis"; an engraving of Raphael's "Sistine Madonna," and a pretty little holiday cartoon, "Family Cares," are among its timely specialties. Of portraits there are three—those of the Deputy Minister of Finance, Mr. Courtney; of the newly appointed Judge O'Brian, of L'Orignal, and of the late Nathaniel Pettes, ex-M.P. A beautiful scene, St. Mark's church and cemetery, Niagara; a group comprising the instructor and officers of the Montreal High School Cadets, and an engraving of a fine painting, by Mr. J. C. Pinhey, of Montreal, entitled "The Early Christian Martyr," complete the number. This excellent periodical is just now closing the third half year of its existence. All Canadians should have it, and now is the time to subscribe.

THE Polson Iron Works Company, of Toronto, who recently established an extensive ship yard at Owen Sound, Ont., for building iron and steam sailing vessels, successfully launched their

second steamer on December 19th. She was called the *Canadian*, and was built for the Canadian Pacific Railway Company, the previous vessel built in these works being the steamer *Manitoba*, for the same Company. She is to be employed in ferrying Canadian Pacific railroad trains between Windsor, Ont., and Detroit, Mich. The *Canadian* is 295 feet long, that is 5 feet shorter than the *Manitoba*, and she is 73 feet in width over the guards. She will be built with double tracks on her decks, and will carry 14 cars each trip. She will be driven by two single acting independent condensing engines, with cylinders 50 inches in diameter, and 114 inch stroke. These will be worked from four boilers, 13 feet three inches in diameter by 14 feet in length, carrying a pressure of 94 pounds. The engines will develop 3000 horse power, by long odds the most powerful piece of marine mechanism on the lakes. She is a side wheeler. The wheels will be constructed of heavy oak cased in steel, and strong enough to crush any ice that may be encountered in the Detroit river. The vessel has been constructed under the superintendence of Mr. E. Trist, one of the best known ship-builders on the Clyde, who also built the *Manitoba*, and each of these vessels attest to his manifest fitness for the position he occupies. The plans were drawn by Mr. R. Logan, naval architect. The engine and boilers were built at the works in Toronto. The Polson Company will immediately begin the construction of a sister ship to the *Canadian*, and like her in all respects.

RAILWAY PROGRESS.

THE *Chicago Railway Age* has secured an interesting relic of the infancy of the railroad in the shape of "A Practical Treatise on Railroads and Carriages," published in New York in 1825. In it is given a description of the engines, cars, track and roadway of the few experimental lines then in operation. The Hetton Railway, which boasted the extreme length of 7½ miles, is the subject of the writer's first description, and we learn that on this line a train of 17 wagons "impelled by a locomotive high-pressure engine, called by the people there an 'iron horse' was said to attain 'the velocity of 3½ to 4 miles per hour.' This engine it seems weighed no less than eight tons; it had a boiler 4 feet in diameter, with a chimney 12 feet high. The diameter of the pistons was nine inches, and the stroke two feet; the steam pressure was 40 to 50 pounds. The wheels of the 'engine carriage' were two feet three inches in diameter, and their axles were connected by an endless chain working into a wheel on each axle. The boiler was supported on a carriage 'by four floating pistons, which answered the purpose of springs, equalizing the pressure on the wheels and softening the jerks of the carriage.' The train of 17 wagons weighed, when loaded, 64 tons, and when empty, 18½ tons. The rails were no less than 3 feet 11 inches long by 2½ wide, and weighed at first 61 pounds, though it was subsequently found advisable to increase them to 72 pounds. A startling innovation, however, had already begun, for it seems that some malleable iron rails 15 feet long, 3½ inches deep, 2½ inches in breadth at top, and weighing 28 pounds per yard, had already been proposed.

The author then describes the Blenkinsop engine of 1811, which had wheels "working into the teeth of the railway by a toothed wheel on the same axle," this engine being able to handle 30 coal wagons "each weighing more than three tons and moved at the rate of about 3½ miles per hour." The "extensive railway from Stockton to Darlington by the collieries," comprising with track completed and in operation, no less than 32 miles, is described as giving an encouraging example of what the steam railway can do, but the author, bold as was his advocacy of this almost untried means of propulsion, feels obliged to declare that "an engine running at a greater rate than about six miles per hour would need to be raised, so as to remove the possibility of overrunning people, or of dashing against other articles."

NICKEL STEEL.

IN the proceedings of the Iron and Steel Institute at the meeting held in London, in May last, a paper was read by Mr. James Riley, of Glasgow, on alloys of nickel and steel. Mr. Riley is one of the practical men in one of the largest steel works in Great Britain, and he undertook certain experiments with various alloys of nickel and iron, at the request of the party in France who had taken out a patent for the process. It is to this same Mr. Riley that the people of Great Britain owe their thanks for being able to produce mild steel in the construction of mercantile ships, and no doubt it was the reputation so gained that led to his being selected above all other metallurgists in Great Britain by Mons. Marbeau, the patentee, to conduct the tests. The contents of nickel in the steel varied in proportions of one to nearly 50 per cent., and the results obtained