capital of $200,000. The property of the company consists of 6,000 acres of hardwood, the mining rights on the Grant Bros., farm at the very door of the works, besides limestone deposits in abundance. The buildings comprise office, engine house, stock house and casting house. The hoist tower, which is 70 feet high, has double elevators. The furnace stack is 50 feet high with 11 feet bosh. There are 20 kilns used for making the charcoal. The output is about 15 tons per day, while the quality of the iron is all that could be desired. E. A. Sjostedt is the manager, and D. R. Grant secretary of the company.

We have the assurance from several prominent manufacturers, both in this province and in Ontario, that the iron produced at Ferrona and at Bridgeville is better for the purposes of their business than any Scotch or American iron brought into the country. As we increase in population ; as our industries are advanced, and as our national resources become known and appreciated, new industries will be added and those already established will increase in importance.

JAMES H. MUNRO.

NEW GLASGOW, N.S., Sept. 30, 1893.

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HALIFAX, N. S., Oct. 12th, 1893.

*Editor* THE CANADIAN MANUFACTURER :

SIR,—Under the caption of "St. John, N.B.," in your last issue, you have inferentially, and I am quite sure only through ignorance, done "sleepy" (?) old Halifax a great injustice.

The old town is called "sleepy, slow, dead, dry rotted," etc., only by those who are interested in having the world think her so, but that does not worry us greatly, as when intelligent people really desire to know what Halifax actually is, they look up statistics and find from cold figures that she is the financial and commercial metropolis of the Maritime Provinces, with a greater volume of business, a larger and more active banking capital, reaching not only all over the Lower Provinces but to Montreal and Winnipeg, Minneapolis and Chicago, far and away ahead of any rival in post office, customs house, money order and shipping business. But when we find intelligent journalists gravely assuring their readers that "St. John, N.B., is the only Canadian port open all the year round," then Haligonians feel that a little missionary work among the aforesaid I. J.'s will not be out of place.

Halifax is a Canadian port, Halifax harbor does not freeze, does not need dredging, is easy of access at all states of the tide for vessels drawing fifty feet of water when they are built, ergo, is open all the year round. See !

SOMNIFEROUS.

N.B.—Any further information cheerfully furnished. S.

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IF the boiler is new, or has never been tested, the heating surface is the best guide to a knowledge of what it will be capable of doing. If the boiler is well designed or properly set, two pounds of water should be evaporated for each square foot of heating surface, so that, on the Centennial committee's basis, fifteen square feet of heating surface should be allowed per horse power of a boiler. the external surface of that portion of the shell which is exposed to the fire should be estimated, and to this, expressed in square feet, should be added the area of the tubes, and of such portions of the heads as are exposed to the direct heat. The sum should then be divided by fifteen, and the result is the nominal horse-power of the boiler. This rule is not absolute, but like all other rules it has exceptions. With the most approved settings, and with well managed fires, the evaporation is greater than that estimated above, and we find that in such cases twelve square feet of heating surface will evaporate the quantity of water required for a horse-power. In some exceptional cases the requisite heating surface is even less than 12 square feet, but we do not use less than twelve unless we have satisfied ourselves, by careful experiment upon similar boilers, similarly set, that we may do so fairly. On the other hand, if the boiler or the setting is poorly designed, or the draught more imperfect, or the fires badly handled, more than fifteen square feet may be required. There is no such thing possible as an absolute rule for the horse-power of a boiler, and the rule we have above merely represents, what, in our experience, a given boiler, well designed, may be expected to do under ordinary circumstances.

THE Thomson Electric Welding Co., Lynn, Mass., has, it is stated, just secured control of an electric loom which will revolutionize the present manner of weaving all kinds of textile fabrics, and the cost of labor will be much cheaper by the new method. The loom will be run by electricity, and will weave fabrics from the coarsest carpet to the finest linen. There is no noise perceptible when the machine is in operation, as each shuttle and moving parts work independently. The present power looms operate at the rate of 140 to 180 picks per minute, while the electric loom picks 250 to 300 a minute.

A NEW valve worked by electricity from any point desired is designed especially for application to steam engines, but can be used to shut off water, gas, etc., as well. When applied to a steam engine it is placed on the supply pipe near the throttle, and connected by electric wires with any part of a factory, so that one push of the button instantly closes the valve and stops the engine. The principle upon which the valve is worked is that of utilizing the steam pressure in the pipe as the motive power to work the valve after being released by the electric current. The valve consists of a piston enclosed in a shell in the form of a cross, and directly across the steam way through the supply pipe. When open it gives direct passage for steam and stands in equilibrium with the steam on both sides. Consequently it does not move, but on the electric current being applied a small exhaust valve is opened at one end, throwing the valve out of equilibrium, moving the piston and the shut off valve across to its seat directly athwart the steam way, and closing it, thus stopping the steam supply. It is very simple in construction and is not liable to get out of order, and does its work perfectly.

THE common water pump of to-day is but an improvement on a Grecian invention which first came into general use during the reign of the Ptolemies, Philadelphes and Energetes, 275 to 221 B. C. The name, which is very similar in all languages, is derived from the Greek word "pempo," to send or throw. The most ancient description we have of the water pump is by Hero of Alexander. There is no authentic account of its general use outside of Egypt previous to its introduction into the German provinces at about the opening of the sixteenth century. Pumps with plungers and pistons were invented by Morland, an Englishman, in 1674 ; the double acting pump by De la Hire, the French academician, some twenty years later.

To make boats of paper, a wooden model is prepared in exact form of the desired boat, on which the paper is moulded, sheet after sheet being superposed until the desired thickness is obtained. In process of construction nine thicknesses of strong manilla paper are laid on, making a thickness of about one-eighth of an inch. The lines of the boat are carefully drawn full size, and the paper—which comes from the mills in rolls—is cut to the full size desired for covering the entire length and breadth of the boat, so as to have no joints whatever. For racing-shells the best manilla paper is used, but for gigs, dingeys, canoes, and skiffs, paper made from undressed linen is used. In manufacturing the racing-shells the first sheet is damped, laid smoothly on the model, and securely fastened in place by tacking it to certain rough strips attached to its upper face. Other sheets are now superposed and suitably cemented together, the number depending upon the size of the boat and the stiffness required. Should the surface of the model be concave in parts—as in the run of boats with square sterns, for instance—the paper is made to conform to these surfaces by suitable convex molds, which also hold the paper in place until dry. It will then retain the desired form. The model, with its enveloping coat of paper, is removed to the drying room. As the paper skin dries, all wrinkles disappear, and it gradually assumes the desired shape. Finally, when all moisture has been evaporated, it is taken from the mold an exact counterpart of the model desired, exceedingly stiff, perfectly symmetrical, and seamless. The boat, as it then appears, is waterproofed, the frames and fittings completed, and the boat varnished. The advantages possessed by these boats over those constructed of wood are strength, stiffness, durability ; and, being without joint, lap, or seam, they do not admit of leaking by strain or shrinkage. They do not crack or split, never shrink, and paper being one of the best non-conductors, no ordinary degree of heat or cold affects them, thus rendering them admirably adapted for use in all climates.

FOR sometime past, Mr. E. B. Wall, superintendent of motive power of the South-west system of Pennsylvania lines west of Pittsburg, has been using oil furnaces at his blacksmith shop at Columbus. These furnaces are 5ft. by 9ft. and are designed for heavy work, and have proved so successful, and well adapted for the work required of them, that others are being installed in other shops of the same system. One feature of this furnace that may surprise those who have not had much to do with oil furnaces of such size, is the absence of any stack or other means for carrying off the product of combustion. It has been found by actual experiment that when a stack is placed on such furnaces, the temperature cannot be maintained to as high a point as desired. Without a stack it is evident that the flames and products of combustion have a tendency to creep out wherever there is an opening. For this reason the doors in the front of the furnace are carefully fitted, and it is found necessary to protect the buckstaffs in the immediate