

CANADIAN INDUSTRIES.

THE JOSEPH HALL WORKS—OSHAWA.

The town of Oshawa long since became an important manufacturing centre, and, although its industries suffered heavily during the protracted period of commercial depression, they are now running with their old-time vigour and experiencing the benefit, in common with the rest of the country, of the era of renewed prosperity which has now fairly set in, and which we hope has "come to stay."

The subject of the present sketch, the "Joseph Hall Manufacturing Company," takes a leading place amongst the manufacturing enterprises of the Dominion, and in 1876 employed no less than about four hundred hands, all skilled mechanics being then at the height of its prosperity. The period of "hard times" we have since passed through and from which we have but lately emerged, did not leave this industry unscathed. It, along with many others, was crippled for a time, but is now rapidly pushing ahead and resuming its former prestige, as a walk through the workshops sufficiently shows that from the amount of work in hand, the present large force of men must shortly be increased to keep pace with orders coming in. The works came into the hands of the present Company in 1870, they buying out the interest of the late Joseph Hall, and electing as their President Mr. F. W. Glen, who still holds that responsible position.

From the time of organization to 1876, they were running very strongly both in general machinery and agricultural implements, but in that year sold their hay-rake, grain-drill and broadcast seeder business to the Mason Manufacturing Company, and their general machine trade to the McGill Mfg. Co., the latter, however, being ultimately re-bought. The grounds of the various works at present comprise about five acres, the larger part of which is covered by substantial workshops, storehouses, stables, &c., the rest being used in storing lumber, moulding-flasks, &c. The first building entered was the

MOULDING SHOP,

built of brick, 200 ft. x 65, and one storey high. Close to the wall, about half way from either end, is the cupola furnace, in which the metal is melted. Two immense cranes, of twenty and twelve tons respective capacity, are so placed that the ladles of molten metal from the cupola can be conveyed to any part of the shop to be run into the moulds. At the time of our visit a cast had just been made of a 72 inch Lefel double turbine water-wheel, which, when completed, will weigh twelve tons. At the northern end is an outhouse called the

MILLING SHOP,

in which the castings as they come from the moulds are cleaned by being placed in revolving cylinders with small pieces of scrap, which removes all sand and scale by friction. Those intended for the machine shop are afterwards dipped in vitriol to leave a thoroughly clean skin, so as not to damage the machine tools. The next entered was the

BLACKSMITH SHOP,

in which are seventeen forges, two trip-hammers, two heavy drop-hammers, and large punching shears which will cut through a

bar of iron one inch thick. A noticeable feature here observed is the forging of the guards for reaper knives, they being made of a solid piece of wrought iron, whereas in other factories malleable iron castings are used. One of the greatest improvements in their celebrated "Champion Reaper" is this guard, which is chilled on the outside, making it as hard as cast steel, the inside, however, still retaining its elasticity. The next building visited was the

GENERAL MACHINE SHOP.

which is 350 ft. long by 70 wide, with a wing 100 x 70 extending at right angles, the whole built of brick, and 3 storeys high. The scene here presented to view is one of great activity, the numerous machines in operation, the whizzing of the belts, the grinding of tools, noise of the hammers, all combine to make a seeming confusion, which, however, when one gets accustomed to the sight and sound, is in reality the most perfect order.

Near the northern entrance, convenient to the moulding shop, is an immense "Sitting Bull" lathe for turning the heaviest casting. It weighs twelve tons, and can take in a casting fifteen feet in diameter. At present it is engaged in turning a curb for the seventy-two inch water wheel, part of which we before saw in the moulding shop. Another machine, more noticeable among the many others from its great size, was the "Monarch" lathe, which has a swing of fifty-two inches, and can take in an eighteen-foot shaft.

These, and nearly all the other machines here, were made on the premises, and show a high standard of workmanship and mechanical ingenuity, one special feature being that the teeth in all gears are cut out of the solid metal, giving them a far greater mathematical exactness and durability than when cast. Some of the ordered work we passed in various stages of completion were a forty-eight-inch water wheel for Nova Scotia, making the fourth shipped to that Province during the past month; several portable "Champion" Threshing Machine Engines, Leather Splitter for Hopewell, Nova Scotia, two Shingle Machines, their respective destinations being Prescott and Quebec, knife-grinders, etc.

In this department are also manufactured Gordon, Washington, and Taylor printing presses, stationary steam engines of all sizes up to 150 horse power, circular and gang saw rigs, water works machinery, &c. It may here be mentioned that this firm put in the whole of the Ottawa Water Works machinery, plant, &c., and also completely furnished Mr. H. H. Cook's saw mill, one of the largest in the country, with three Steam Engines, seven Boilers, four Gang Saws, a Slabber, and a Stock Saw, besides a large amount of miscellaneous machinery, such as pulleys, shafting, &c.

In an annexe of this building is a Tool Shop, in which are made, repaired, and stored all turning tools, taps, dies, and smaller mechanical appliances that easily go astray. As an instance of the perfect order prevailing throughout the works, it is sufficient to state that no employee is admitted to this room, on any pretext but has to summon the foreman by ringing a bell, who hands him the article required through a wicket, and then makes an entry of who received it in a book kept for that purpose. The

AGRICULTURAL IMPLEMENT SHOP

is a continuation of the general machine room, and is 100 feet