

As it is evident that industrial art must form one of the essential features of a new system of education, the prime element of that system naturally becomes that of

INDUSTRIAL DRAWING,

which is the most essential single element required in all industrial pursuits. Neither architecture, sculpture nor painting can get on without drawing; drawing not only expedites construction in all cases, but oftentimes construction is absolutely impossible without it. In order to obtain the greatest expedition and economy there must not only be professional draughtsmen to make original drawings, but workmen must know at least enough of the principles on which drawings are made, to be able to work from them understandingly and without constant supervision. As a result of the value of the art to many, we give the following extract from a work on drawing adopted by the Board of Education in England:

"In almost all trades, decorative art in some way makes its presence felt; but in some, as we are all aware, it is present in a marked degree. In these branches of business, more especially, the power of drawing is of great value. Many persons are not aware at what disadvantage we are placed, nationally, by this past neglect of the art-power, which it is not unreasonable to suppose is latent amongst us. The following quotations from a Blue Book, compiled on the Government inquiry, in 1864, into the working of the Schools of Art throughout the country, may not be without interest. One of the leading Manchester calico manufacturers, during the course of his examination, says: 'I have made a calculation, which I believe to be within the mark. I believe the amount paid by calico printers alone, at this very time, is enormous. I may state at once that I know twelve houses that pay from £25,000 to £30,000 a year for designs. I believe the entire payment now in the trade, in French designs alone, is upwards of £50,000 a-year. We get much better designs in Paris: unless it were so, we should not go there, of course.' One of the chief manufacturers in the Staffordshire china trade, in answer to the question—'Are your best designers now foreign or English?' replies—'Our best painters, with the exception of one, are foreigners; and I may state, also, that our best modeller is a foreigner. In France and Germany, technical art training has been in full practice for a great many years, with what valuable results the foregoing extract will show.'

It is therefore clear that, in elevating the tastes of the people, you inevitably elevate the manufactures, increase their value to the country, and give full employment to the people.

Dried Eggs.—A large establishment has been opened in St. Louis for drying eggs. It is in full operation, and hundreds of thousands of dozens are going into its insatiable maw. The eggs are carefully "candled" by hand—that is, examined by light to ascertain whether good or not—and are then thrown into an immense receptacle, where they are broken, and by a centrifugal operation the white and yolk are separated from the shell very much as liquid honey is separated from the comb. The liquid is then dried by heat, by patent process, and the dried article is left, resembling sugar; and it is put in barrels and is ready for transportation anywhere. This dried article has been taken twice across the equator in ships, and then made into omelet, and compared with omelet made from fresh eggs in the same manner, and the best judges could not detect the difference between the two. Is this not an age of wonders? Milk made solid, cider made solid, apple butter made into bricks! What next? —*The Age of Steel*, ii, 16.

To the Editor of the CANADIAN MECHANICS' MAGAZINE.

HAMILTON, February, 1878.

SIR,—

An invention of a novel and ingenious kind has just been put into use in this city by Mr. J. H. Kelly, of the Mona Iron Works here, for the purpose of utilizing waste coal or screenings of every description without the use of a fan or blower. The invention consists of an apparatus constructed like the petticoat or blow pipe arrangement used in a locomotive smoke box and under the smoke pipe or funnel, but inverted. This apparatus is supplied with steam from the boiler through a small pipe in first cone or petticoat, not more than 1-16th diameter; after these there are a succession of cones, five in number, of continual increasing diameter through which the combined current of air-steam passes, forming a powerful blast which can be changed by more or less steam if desired. This blast is conveyed under the grates which are placed over an air-tight ash pot and forced through the fire, which, in this case, was composed of hard coal screenings, previously lighted by a wood fire. The screenings which are sold here, in the yard, at 50 cents per ton—by aid of the apparatus give off a large amount of heat and blaze up with powerful blue flame, the intensity of which is regulated by the amount of steam introduced with air. The boiler to which it is applied is about 20 horse-power, and runs a fifteen horse-power engine driving the numerous tools in the machine shop of the Mona Iron Works, also heating the various work-shops by ranges of steam pipes, and working a powerful steam hammer in the forging shop. All this work is done for the whole day of 10 hours with under 600lbs. of this waste material, the steam being steadier and in greater quantity than it ever was previously with the best steam coal. An experiment was tried this afternoon in the presence of a number of gentlemen showing the value of this invention. At 15 minutes to 4 o'clock three small shovelfuls of hard coal screenings was put into the furnace, the steam being at 50lbs. above the atmosphere. The whole of the machinery was kept in motion and run until 5.15, or for one and a half hours, the steam at the time of stopping being 82lbs. above the atmosphere. The cost of the screenings in one day of 10 hours being under 20 cents, which has been pronounced as the cheapest steam power known. This apparatus utilizes millions of tons of refuse which are heaped in immense mountains around all the anthracite coal districts. Immediately on its being known in this city that the success of this device being assured, the whole of the screenings here was bought. It has now doubled in value, being worth one dollar a ton; at this price, with this apparatus, it is less than 1-5th of the cost of steam coal. One curious feature of the matter is that a very much less weight of screenings answers the purpose than is required of the best steam coal. This is explained by Mr. Kelly as being due to the decomposition of steam. Mr. Kelly is manager of the Mona Iron Works here, and is a man of marked ability, having originated many valuable inventions—his automatic condensing engines, without an air pump, being known far and wide.

AN ENGINEER.

Wonderfully Rich Gold Mine in New Zealand.

—The mail delivered during the week brings intelligence of one of the greatest discoveries yet made in the province. The discovery is at the Moanatairi Mine, in the Thames gold field, not a great distance from the celebrated "Caledonia" Mine, which in two years returned half a million sterling from a depth of 50 fms. The Moanatairi Mine was productive to a depth of about 200 feet, when the lode became very poor. The company, nevertheless, decided to carry on operations although at a great loss; and, after working for over two years, struck the lode again nearly 100 feet deeper, when it was found to be from 8 feet to 10 feet wide, and almost solid gold. The returns since have been enormous—for the fortnight ending March 3, 709 ozs.; March 17, 4,913 ozs.; March 31, 16,662 ozs. Making a total of 22,284 ozs., of the value of 70,000l. The yield for the last week of the above return was 10,295 ozs., and the profit for the fortnight reached the amazing sum of 83,000l.