

## CINCINNATI.

In the city of Cincinnati we are afforded an excellent example of the rapid rise and growth of our Western towns. In the year 1800, four hundred people were settled there, in a small straggling, unpromising village, and surrounded by an uncultivated wilderness.

Great natural advantages attach to the site, which is peculiarly favorable to commerce and health. Lying on a natural plateau nearly twelve miles in circumference, which is surrounded by hills three hundred feet high and through which the Ohio river flows, it affords a large variety of position and scenery, while the situation of the city enables it to collect within itself the raw material of mines and forests, and other productions of a large extent of surrounding country, and to redistribute them after they have undergone the process of manufacture or been otherwise prepared for market.

It was estimated, in 1859, that the river imports and exports must have reached nearly \$100,000,000, and the present increased prosperity of the city is perhaps best evidenced in the number of its public schools, libraries, etc., and the development of a taste for improved architecture, all of which have been much aided by the great liberality of its own private citizens. Among the benefactors are numbered Messrs. Davidson & Probasco, the well known merchants. That they have assisted the advancement of their city with no stinted hands, is proved by the present they have lately made of the magnificent fountain shown in our illustration.

**Wooden Railways**

The substitution of timber for iron permanent way, which constitutes the great feature of the Canadian wooden railways, is due to Mr. J. B. Hulbert, an American engineer. After a short line, 6 miles in length, had been built and worked for a considerable time, another was commenced 47½ miles long, between Carthage (New York) and Harrisville, and was opened for traffic in 1868.

In addition to this, a third line was laid down in Canada, in the province of Quebec, and known as the Quebec and Gosford wooden railway. This line is 26 miles long, but next year its extension for 100 miles is intended. Another, the Sorrel, Drummond, and Arthabasca Counties railway, 60 miles long is finished, and several short branches are about to be made next spring, whilst the Levis and Kennebec wooden railway, in the province of Quebec, is in progress. This line will also be 60 miles in length, with 40 miles of extension to be made at a future time.

The traffic upon all of these lines is of course very light, and would not have warranted the construction of the cheapest possible form of railway in which iron permanent way was employed; nevertheless three through trains a day are, on an average, run over the railways already opened, and carry passengers and freight at least equal to what is conveyed over many lines upon which a large construction capital has been expended. Moreover, a fair speed, varying from 18 to 20 miles an hour for passenger trains, and from 12 to 16 miles for freight trains, can always be secured, and the amount of adhesion with the 30 ton engines now running, is sufficient to take any required load up the gradients which are severe. Thus on one of the lines, where 20 ton engines are employed, from 60 to 80 tons can be taken up gradients of 1 in 60, whilst there is no difficulty, on far steeper inclines of 1 in 21, in taking up 20 ton trains with engines weighing 14 tons. Experience has also shown that the

wooden rails remain in at least as good a condition in winter as iron ones; and with the use of the snow plough, there need be no check to the traffic, even when the snow lies on the ground to a depth of 3 or 4 feet.

**Screw Propeller.**

An improvement in the design and construction of the blades of screw propellers, for steam vessels, has lately been patented by Hermann Hirsch, London.

This is intended to remedy the great vibration, produced by ordinary screw propellers, by obtaining the best effect in converting the force given out in rotation into a pressure direct-

Mr Gregory has collected in his work the claims of all the patents for sewing machine attachments to January 1, 1872, (nearly 400), has given a description of each, with the claims in force, with a photo-lithographic drawing, and has also added rejected cases open to public inspection January 1, 1872, and English patents on like subjects. This compilation, the first of its kind, has been prepared with much care, and will prove a most valuable work for persons in any way connected with sewing machines, either as attorneys, manufacturers, inventors, or dealers. Price \$25.

**The Prospective Supply of Pig Iron.**

While there is, naturally, some diversity of opinion with regard to the probable course of the iron market within the next twelve months, we think it safe to conclude, from all indications, that both production and consumption will show a marked increase before the end of another year. Owing to the present scarcity of iron in the market, and the high price demanded and obtained by the furnaces, there is, just now, a temporary falling off in the consumptive demand; this is particularly noticeable in the case of rails, the high price of iron having forced many of the rail mills to suspend operations, because rails cannot now be marketed at remunerative prices, since, as compared with pig iron, they are relatively cheap. There has also been a noticeable curtailment of consumption in other ways, but this cannot be other than temporary. Iron is an article in which there can be no economy of consumption. Just so much is needed, and if it is not supplied this year, it must be next year. If we build a less mileage this year because rails are high, we shall make the more rapid progress when rails become cheaper.

Thus, while the consumption may fluctuate from year to year, the percentage of increase must be and will be maintained. It need not be inferred, therefore, that because there is just now a curtailment of consumption, there is less encouragement to increase the supply than when the inquiry was more active, the consumption greater,

and the supply more abundant. On the contrary, the fact that consumers are now compelled to limit their purchases, to the supplying of their immediate and imperative requirements, gives assurance of a greater and more pressing demand in the immediate future; and no better opportunity was ever offered for starting new furnaces, wherever coal and iron can be had, than that which now presents itself. Great as it was last year, the consumption of iron in the United States is capable of indefinite expansion.—*Iron Age.*

**A NEW LIGHT.**—At a recent meeting of the Inventors' Institute, Mr. M. M. Harris, member of the council, in the chair, Mr. Carl Molchin, a native of Hamburg, exhibited lamps burning a new compound oil to be used for lighting purposes, which was found to afford a steady, even light, very closely approximating in power, clearness, brilliancy, and intensity to the electric light, at a cost somewhat less than that of colza oil. It resulted from experiments made with this oil, burnt in a moderator lamp, that a light of 17½ spermaceti candles was obtained. This light is considered as very valuable for light houses, railway signals, railway carriages, and other purposes, and received the hearty approval of those present at the meeting, opinions being expressed that its use would mark a new era in artificial light.



FOUNTAIN PRESENTED TO THE CITY OF CINCINNATI.

ed in the line of the axis, so as to produce a maximum amount of longitudinal pressure as useful effect for propulsion. To obtain such maximum of useful effect, the improved screw propeller, or each blade of the same, is so curved that the direction in which the water yields will be a direction converging from the periphery of the blade towards the axial line of the propeller; and consequently opposed to the centrifugal action which the rotary motion of the blades tends to impart to the water. Thus this curvature of the blade counteracts the centrifugal action, and so utilizes for propulsion the power that would otherwise be wasted.

The effect will be to drive the water in a cylindrical column in an axial direction relative to the screw, thereby producing the most direct and economical application of the power applied to the propeller, and at the same time avoiding vibration and increasing the efficiency of the rudder by surrounding it with a column of unbroken water, thrown directly against it with considerable velocity.

**The Sewing Machine and its Attachments.**

We have just inspected an advance copy of a book entitled "Sewing Machine Attachments," published by G. W. Gregory, Esq., Examiner of Sewing Machines and Textile Manufactures, United States Patent Office, Washington, D. C.