General Remarks.—We shall this week close the series of articles which for so long a time we have devoted to the Crystal Palace; in so doing it may not be amiss to notice briefly the present condition and future prospects of the Exhibition.

In visiting the Palace a few days since, we were forcibly reminded of its condition during the first month after its opening in July: there are the same vacant aisles, the same confusion of boxes and litter; there may be heard the same sound of the hammer,—but there is one important difference—each day at that time added to the store of treasures of art, while now the confusion and the noise is the prelude to their removal, the token that in a few days more they will be no longer accessible to the gaze of the curious. Already many of the most interesting articles in the Exhibition have been removed. Probably one-half of the machinery in the arcade has been taken away. Powers' statues, acknowledged by all to be the most beautiful group in the Exhibition, are gone. The Gobelin Tapestries have been sent home. The splendid specimens of gold in the mineralogical cabinet, have been converted, we suppose, to a more legitimate purpose. Many, very many, of the miscellaneous articles have been removed by their owners.

But in another respect is there a very important falling off. The number of visitors now is not one-fourth of what it was during the autumn and early winter. Judging from two or three recent visits we should conclude that the receipts would but little more than cover the expenses, which must during this cold winter weather be extremely heavy. A stranger visiting the Palace for the first time and reading the regulation, "The Police will require visitors to move along when the passages become crowded," would be very much disposed to enjoy a laugh at the expense of the enterprise.

One thing to us appears evident, the Crystal Palace must change hands, or it will soon be numbered among the things that were, in spite of the intention of the Directors, circulated privately though not publicly announced, to the effect that it was to be kept open till the expiration of their charter. As it is now conducted it is evidently dying a natural death.

But this should not be. There is a public necessity for an institution such as this should be, in our country. With proper management it might be made not only highly interesting and useful, but what is equally necessary, profitable. It should be made a Museum of the Arts, and if properly arranged with such an object in view, it would continue to attract visitors from all parts of the country, and would therefore, as it has already done to a great extent prove a means of advertising to the exhibitors superior to any other, accessible with the same expenditure of money.

As it is, we must close these articles for the present, we shall however continue to keep our readers posted up in all matters of interest that transpire in relation to the Exhibition, and we sincerely hope that some measures will be taken to secure to our city and the country an institution capable of being so beneficial.

Calico Printing—We stated last week that we would soon present a few articles on "Calico Printing;" these will appear in the course of a few weeks with some illustrations.

In closing this series of articles, we cannot avoid expressing our thanks to J. E. Holmes, Esq., the Superintendent of Machinery, for the gentlemanly manner in which he has always aided us in our labor. To the other Superintendents of the Palace we are also indebted for favors.

The Ericsson has taken in her new engines, and is now out in the North River, the same as she was one year ago, and with as bright prospects.

French Taste in the Crystal Palace.

We must say of the French artists, whose handiworks have been exhibited at the Crystal Palace, that they display a taste and neatness from which our artisans would do well to take a lesson. The superiority of the French in this respect was one of the great facts to which the British Commissioners, subsequent to the closing of their Crystal Palace directed the attention of English mechanics. Of the various fabrics displayed at the London World's Fair, the French invariably exceeded the British in elegance, even when inferior in durability.—What is true of English manufactures, is true also of American. Our mechanics can make articles as strong as the French, but not as handsome. In the texture of the goods, the firmness of the furniture, they rival, perhaps surpass their French competitors; but our patterns do not display that taste and skill in design for which the French are so much distinguished.

The reason of this superiority is, that the French workman aims at being an artist as well as a mechanic. He is shrewd enough to know that it costs no more to make an article of an elegant pattern, than of an ugly one, and he consequently endeavors, from boyhood, to perfect his taste, by studying the best models. Is he a carpenter? He seeks the most elegant specimens of architecture, sketches them carefully, and preserves them in his portfolio. Is he an operator in a mill? He draws from nature the drooping vine-branch, the graceful rosebud, the wavy outlines of foliage, the fantastic forms of the kaleidescope, and arranging them into various combinations, produces patterns of every variety, for de laine or silk. Is he a cabinet maker? Instead of spending his life in making stiff furniture, he continually invents new models, with flowing lines of beauty. Is he a manufacturer of table-ware or fancy articles? He makes elegance of form go hand in hand with stability. Whatever his peculiar walk of mechanics, he studies to do the best possible in that department, instead of being contented with remaining where his predecessors were, and slavishly imitating their works.

If a young man wishes to rise in the world, let him be an artist as well as a mechanic. If he wishes to be proud of his profession, let him render it an intellectual one, by studying art and applying it to his work. If he wishes to elevate the character of his country as a manufacturing one, let him strive to have it excel in the beauty of its various fabrics. A mechanic, who is an artist, elevates himself, his profession, and his country. A mechanic who neglects art, degrades all.

Sal-Ammoniac From Gas Works.

The Industrial Society of Mulhausen offers annually a number of prizes for inventions and improvements made during the year: and it also offers a prize to those who introduce a new branch of industry into the department of the Haut-Rhine. This last prize was taken by MM. Moerhlin and Stoll, who manufacture sal-ammoniac from the ammoniacal liquid of gas works. The main difficulty in the operation consists in separating the tar-like material which it contains. The following is the process adopted.

The ammoniacal liquid is mixed with slaked lime; then submitted to distillation in a boiler heated by steam; the parts volatilised pass into a worm, in which the larger part of the tar is deposited; the ammonia passes on into a Wolff's apparatus, where it leaves the foreign substances present, and finally is carried into cold water where it is condensed. In this state it is nearly free from its impurities; it is neutralized with chlorohydric acid and evaporated in a lead boiler. As it deposits it is withdrawn by means of a wooden rake; it is allowed to drain, and then introduced into a brick mould and subjected to strong pressure. Blocks of sal-ammoniac are thus obtained, which are dried in an oven heated by part of the heat furnished by the evaporating furnace.

The aggregate value of boots and shoes made last year in Massachusetts is $37,000,000, or more than all the other states combined—and far exceeding that of any manufacture in the Comnionwealth

New Mode of Steam Repulsion.

A few days since an article was copied into your paper from "The Edinburgh Courant," giving an account of the new method of propelling vessels invented by Ruthven & Sons of Edinburgh. It was the fortune of the writer, in September last, to visit the company with the Hon. J. R. Chandler, the ship-yard of the Messrs. Ruthven at New Haven on the Frith of Forth, a few miles from Edinburgh, and inspect the vessel called the Enterprise, which was then nearly ready for the launching and which has since so successfully proved the advantages of this method of propulsion over all others.—We regard it as the greatest invention of the age and feel satisfied that by it the paddle wheel and screw will soon entirely be superseded. The Enterprise is a vessel of 100 tuns burden, and having an engine of 30 horse power. The propelling power is obtained entirely by means of the reactive force of water, a principal of hydraulics equally well established and well known. To illustrate, however, let us suppose a perpendicular tin pipe of say a foot in diameter and thirty feet in hight, and open only at the top to be filled with water. Now it is well known that the pressure of water near the bottom of the pipe will be the same on all parts of the pipe at the same level, but if a hole be cut in the side, of say an inch diameter, although the pressure is relieved at that point, it still remains the same as before at the point directly opposite of the hole so cut, provided you keep the water at the same level, and thus the equilibrium being lost, the pipe is driven along in a direction contrary to the escape of the water.—The fact can easily be illustrated by experiment. It is this simple principle which in the hands of science, genius and enterprise is without doubt destined to create a new era in navigation. In the application of this principle to navigation the power of the steam engine is substituted for the power produced by the weight of the water column. In the hold of the Enterprise there is an iron tank, of some eight feet in diameter and about two feet thickness, composed of two plates of iron screwed tightly together, and in shape resembling two large soup plates placed one over the other. This tank lies horizontally and below the water level, so that by means of apertures communicating with the bottom of the vessel, it is always full of water. From the center of this tank a perpendicular shaft rises, connecting the engines with a sort of wheel of very peculiar construction and having but two arms, which revolves within the tank and acting as a force-pump, drives the water through pipes on each side of the tank and through nozzles at the sides of the vessel, discharging it with great velocity just above the water level. The nozzles of the Enterprise are about eight inches in diameter, and when the vessel is going forward lie along and parallel to the sides, being about 18 inches in length and shaped like a "goose neck." They are moveable and are worked by a wheel on the deck of the steamer, and the speed may be increased or diminished by the position in which they are placed. If placed at right angles to the surface of the water, although the engines be working with full power, the vessel continues at rest. To stop the headway, it is only necessery to reverse the direction of these nozzles without stopping the engine.—In the trial trip of the Enterprise, she was brought to a dead stop in the space of 40 feet, although running at the rate of ten miles per hour, when the order to stop was given.

Again, by reversing one of the nozzles only, the vessel swings round precisely as if moving on a pivot.

The advantages of this method of propulsion over those of the wheel and screw are numerous, and it is reduced to a demonstration that with the same power of engines and the same amount of fuel consumed, the vessel can be propelled nearly one-third faster, as there is one-third gained, so that if the Collins steamers were provided with these improvements, they would cross in six days instead of nine days, saving, of course, three days consumption of coal, &c., while the whole paraphernalia of shafts, paddle-wheels and paddle-boxes would be entirely dispensed with.—[N. Y. Tribune.

[We have published the above to point out the want of correct information contained in it, in relation to the application of force in propulsion, in order that none of our people may be led astray by the principle described, and the incorrect statements made.

Three distinct things are pointed out in the above; first, the vessel is propelled by the reaction of a column of water; second, this water leaves the exit tubes at a *great velocity*, and above the water level; third, this vessel with the same amount of fuel, can be propelled one third faster than the Collins steamers. It is not true that a vessel propelled in this manner could cross the ocean in one third less time, as stated, than the Collins steamers, but must from, the very nature of the means of propulsion, require twice the time of one of the Collins Steamers to run from New York to Liverpool. The employment of water as a propelling agent for steamboats is not new; it was among the earliest plans proposed, and is the invention of James Rumsey, of Va., see an engraving of his boat, on page 112, Vol. 5, "Scientific American." To get the full value of the re-active force of water in propulsion, it (the water) should leave the tubes without velocity, consequently there is great loss of power in the arrangement described above, as all the velocity contained in the discharged water is a waste of force. The greatest amount of velocity that can be obtained by a vessel propelled by the re-action of water, is only 50 per cent. of the power applied. The whole science of mechanical engineering is founded on the remark attributed to Archimedes—"give me a place whereon to rest my lever, and I will raise the world." To propel any machine or carriage economically, a fulcrum for the lever is the first grand desideratum. If a steamship can be economically propelled by the re-action of a column of water, why not at once, without the use of a pump for such a purpose, propel it with the re-active force of the steam, and why not propel all our locomotives in this manner? The reason is obvious, a firm fulcrum for the propelling lever is required to do its work economically, and this lever must be a rigid substance, not a fluid. If we could suspend a cannon by a single thread of silk, and use a ball of the same weight as the cannon, the latter—if its form was as favorable—would be propelled backwards as far as the ball would be projected forwards. This would be the effect, according to the law, "action and re-action are equal." A man standing on a floating board cannot lift a weight to the same height as he could if standing upon terra firma. Every person knows this to be true. The propelling water, therefore, in the Messrs. Ruthven's boat, is projected into the air as into a sheath, and there is no proper resisting medium by which all the velocity of the water is applied to propel the boat. If the exit tubes were as large as the inlet tubes, no velocity, would be imparted to the vessel, because the water would leave the vessel as freely as it entered it. The whole amount of velocity obtained is due to the difference of the area, then, of the inlet and exit tubes. This arrangement, therefore, must involve a great loss of power. The boat seen by the above correspondent may be very useful for some purposes, but it does not economise power, neither is it so simple for reversing the motion of the vessel as a paddle-wheel. There is one good arrangement of the nozzles; that is, the employment of one when required, to turn the vessel, as can be done by a single oar. The idea is not new, as it respects paddle-wheel steamers, but it is not so easily carried out in them. It is time that the value of a firm fulcrum for moving bodies was better understood. A steamship can never be propelled with the same economy of power as a locomotive, and for the same reason a balloon can never be propelled with the same economy of power as a steamboat. Every person is acquainted with these truths, they are applicable to all conditions and operations of boats; thus we expend more power in walking over swampy ground than on a smooth hard road, because the former is a yielding fulcrum the force of propulsion, while the latter is a firm fulcrum.

The engineers are engaged in surveying a route for the Niagara Ship Canal—the starting point being Tonawanda.