It is now two weeks since the Crystal Palace was opened in the evenings, and the experiment so far has been highly successful. The machinery is now nearly all arranged, and presents much that is interesting to mechanics, manufacturers, and patentees, and owners of patent rights. A great number of patented machines are on exhibition, and the majority of them have been illustrated in our columns, thus showing that the "Scientific American" is truly "the Repertory of American Inventions." To all of these machines we will direct special attention in some future number, and make such remarks about them as may be proper and instructive.

Street Sweeping Machine.—There is one machine in the English Department to which we wish to direct the attention of the New York City Authorities especially; we allude to the machine for sweeping streets, which has been sent over from Manchester, we believe: No city in the world expends more money for street cleaning, and yet there is not one, we venture to say, that has as dirty streets as New York. Some desirable change is wanted to effect a reform in street cleanliness. What shall it be.—We have more than once directed the attention of our people to the sweeping of streets by machinery, and five years ago we published an engraving of an American machine, on page 16, Vol. 3, invented for the purpose by C. Bishop, of Easton, Pa. We also described what had been done in Manchester, England, in keeping the streets clean by machinery, still our city authorities are always behind, and never move, until driven, into any improvement or reform.—We now solicit them to visit the Crystal Palace in body and examine this machine, and see if it will not waken up some spirit in their lazy minds to sweep off the mud and filth of our public thoroughfares. This street sweeping machine is of the size of an ordinary cart, and can be drawn easily by one strong horse. It is stated, (but for the truth of which we will not vouch) that it will do the work of fifty men. It sweeps up a swath of mud six feet wide, as fast as a horse can walk. Formerly these machines, in addition to sweeping, were used also to cart away the material; but the loss of time thus occasioned, induced inventors to add to its power to clean, and leave the work of removal to be performed by attending vehicles. The one on exhibition is on the improved plan, and should be used here, at least sufficiently to show its capacity. Their cost does not exceed $300.

The dirt is swept up by brushes revolving on an endless apron, and deposited in the box of the cart. Messrs. Mayor and aldermen walk up to the Crystal Palace and examine this mud cart. Is it not a shame to you, that they have to send over from the old city of Manchester (from old slow John Bull, as we sometimes call him) a dirt cart to instruct you in city cleanliness. Oh you old foggies, cast away your night caps.

Sewing Machines.—No machines at the Exhibition attract so much attention as four sewing machines which are placed in the East Nave, and which are in continual operation all day long. Two of these machines are known by the name of "Singer's Sewing Machines," the others are those of A. B. Wilson, combining his latest improvements. Both of these sewing machines have been illustrated and described in the "Scientific American," Singer's on page 49, Vol. 7, and Wilson's on pages 297 and 298, Vol. 8. We refer all those who desire to get a full description of the nature, construction, and operation of these machines to the pages mentioned; no where else can such information be obtained. As sewing machines are now exercising a great influence in various manufacturing operations in our country, and as we believe every family that can afford to buy one will yet do so, it is very important that all our people should be fully informed about them, in respect to their qualities, and also in respect to their patent claims, so that no person may purchase ignorantly and bring himself into trouble.

These machines are very conspicuous at the Exhibition; they are placed on platforms, and each is attended by an experienced young woman, who finds more observers of both sexes than any other person in the Palace. Singer's machines make more noise than Wilson's, but the latter seem to have the greatest number of admirers; they are certainly the neatest sewing machines yet produced.

Machine and Hand Labor.—When sewing machines were first introduced in this city, we received not a few thrusts from a periodical published here for some time, and which pretended to be a generous advocate of women's rights, and commiserated the poor seamstresses in this city, on the approaching destruction of their business, denouncing us for advocating the introduction of such an invention, even although it was an improvement. Such pretended friends of our working people always do them more injury than good, by their short sighted views and indiscreet language. Sewing machines have not taken the bread from a single female in our land, and the substitution of machine for hand labor, in all cases, has increased, rather than diminished the demand for manual labor. Machinery has indeed changed the occupation of many, but in doing so it has relieved men and women from drudgery, and elevated them to more noble employments. In 1846 we believe there was not a single garment in our country sewed by machinery; in that year the first American patent on a sewing machine was issued. At the present moment thousands are wearing clothes which have been stitched by iron fingers, with a delicacy rivalling that of a Cashmere maiden. Let no one of our readers who visits the Crystal Palace fail to pay particular attention to the operations of the sewing machines.

Rotary Pumps.—There are two rotary pumps at the Exhibition which attract much attention, because they are conspicuous objects, both in number and position. One is the piston pump of Albigence Carey, which was illustrated on page 345, Vol. 3, "Scientific American," and the other is the centrifugal disc pump of Stuart Gwynne, of this city, which was illustrated with a number of engravings on page 89, Vol. 8, "Scientific American." No other pumps at the Crystal Palace are so well placed for show and operation. We allude to them, not merely because they were published in the "Scientific American, but because they are really so prominent among all the rest of the machines, and because a knowledge of the interior of these pumps can be obtained by reference to the engravings referred to, while no one can tell how they are constructed inside by merely seeing them operate at the Crystal Palace. A large boiling column of water, like a huge fountain foaming up from subterranean depths, near the sewing machines, at the entrance of the Machinery Department, is driven by Gwynnes' pump. Carey's pumps are situated on a platform in the machine room near the entrance. Carey's Rotary Pump has movable sliding pistons operated by an interior cam. Gwynne's pump has no piston and no slide. It takes the water in at the centre of the disc, and throws it out at the circumference by centrifugal action—not a distinct force. The driving force is the steam engine which communicates motion to the shafts of the pumps through belts and pulleys. Both pumps are worthy of attention, and they command it.

Mr. Ewbank, in his work on Hydraulic Machines, states that no rotary pump had been invented equal in every respect to the reciprocating pump. His work was published some years ago; in another edition he would have to make a different statement. For a great many purposes, especially in paper and sugar mills, and for draining purposes, the centrifugal pump, which requires no packing, and is wholly composed of metal, does work for which no other pump can be economically employed.

The sewing machines and the rotary pumps are so near the entrance of the Machine Room that a notice of them comes naturally first in order. We have no doubt but all our readers who have examined the engavings and read the descriptions of these machines in the "Scientific American," and who have never seen any of them in operation, will be pleased with us for directing their attention to them. There is no man but would be more edified and enlightened with the operations of any machine, the first time he saw it in operation, if he had read an illustrated description of it previously. This is one great advantage which the readers of the "Scientific American" have in visiting Industrial Fairs, and which they certainly will have in visiting the Crystal Palace. It is easy to see how they must be more intelligent in respect to new machinery and progress in the arts than other people, it must be so, it cannot be otherwise. In visiting a machine shop the movements and operations of many machines cannot be discerned; they are cased up, and their outside moving parts cannot give any person a correct idea of what they are in principle and construction, hence the benefit which the readers of a mechanical paper derive from illustrated descriptions of new machines.

To Exhibitors.—We have a word of advice to give to you, not all of you, but the great majority. Why do you not label all your articles, and put on the price of them? It would be for your benefit, you may depend upon it: the place where the goods or articles were manufactured, the place where they can be purchased, and the given price, would be the means of selling many things which will not have a single purchaser. The special nature of the improvements in every machine, should be placed upon it with a printed or well written circular. Every work of artistic merit should have the name of the artist on it. Manufacturers and employers, as an act of justice to their operatives, should place the name or names of the persons who executed the work upon the articles which they exhibit. "Honor to whom honor is due," but not all to the agent exhibitor, nor manufacturer. There are some goods marked with "From the Globe Mills," "The Glasgow Mills," &c., and that is all we know about them. This is not right, neither is it wise on the part of the manufacturers, and above all, it is not exactly just on the part of the agents. The Commissioners of the Exhibition should demand of every exhibitor to put a correct and full label on every article he exhibits.

Visiters.—We have been frequently asked for advice as to the best manner of viewing the Exhibition, *where* the most interesting things are placed, &c. It is impossible to give advice about such things. The only advice we can give, is to examine every department carefully.

Shoe Pegging by Machinery. — Cheap Shoes Expected.—On Friday of last week, a special invitation was given to the members of the press, and some others as *distingue*, [Governors and Generals,] to witness the operations of a shoe-pegging machine, invented by A. T. Gallahue, of Pittsburgh, Pa.—patented on the 18th of last month. This one is made almost entirely of iron, costs $150 to $200, and will probably weigh some two or three hundred pounds. It will peg a shoe or boot, two rows on each side (leaving a small space at the heel and toe) in three minutes, cutting its own pegs. One man only is required to operate it, without auxiliary power. We understand that one is now in practical operation in Pittsburgh.

We do not know how many pairs of shoes a good workman could peg by hand in a day, but from what we have been told, and the feats we have read of by some shoemakers, it appears to us that this machine is as yet a peg too slow to supersede hand labor. One shoe pegged in three minutes, amounts to 120 pairs in twelve hours, and at this rate it requires an attendant. It is indeed true that a boy or a girl can attend it, and a number of such machines can be driven by one shaft, like power-looms. The principle is in it, however, and the knell of hand-pegged boots and shoes has been rung.

We will shortly publish an engraving of this ingenious machine, and will present more information on the subject.

Weighing and Packing Machine.—A very ingenious and useful machine for weighing and packing up packages of tea, coffee, spice, &c., is exhibited by Slater & Steele, Jersey City.—The material is fed from a hopper over head, is weighed in its descent from the hopper and discharged in pounds, half pounds, or otherwise as may be required, into a tunnel resting in a square box, into which a paper has already been conveyed by the machine. The box forms one link in an endless chain of boxes revolving around a platform, and moving on a few inches, receives through the tunnel a square stamp just fitted to it, and thence passes to another, until the fourth delivers it pressed into a solid mass and enveloped.

The Machinery in General.—All the machinery is not yet in order, nor has it all arrived. New models are constantly being introduced, and their shining and strange effect contribute in no small degree to the general appearance of the building.

Among the novelties entered for exhibition are several contributions from American mechanics. A beautifully finished foot-lathe for turning ivory and small work generally, attracts considerable attention. It is the production of a youth 14 years of age, the son of Mr. James Stuart, of No 15 Canal street. Another contrivance that attracts much notice is Miniss' Locomotive Invalid Chair—the invention of Mr. Miniss, of Meadville, Penn., and is patented. The chair rest on three wheels, the fore wheel being on a novel double-action joint, enabling the person occupying the chair to drive himself by the hand in any direction about the room, or on any level surface.

The American Department.—Every one of our acquaintances who has visited the Crystal Palace, and of whom we have asked the question, "What do you think of the American Department," have answered us with sparkling eyes, "I feel proud of it." Yes, every American must feel proud of it, for it presents proof to corroborate what we asserted two years ago, viz: "Had London been as near to America as to the continent of Europe, our people would have astonished the inhabitants of the Old World, who in general have an idea that in this new country we cannot do anything, and have not anything like the old nations. Any person from abroad possessing such an opinion, has but to step into the American Department in the Crystal Palace to get converted.

Railway Horse Powers.—Information Wanted.

Some one from Baltimore has written us for information concerning a patent on a design. The signature is too grotesque for our imagination, therefore we are compelled to answer through the paper. The question is as follows:—"Could a design of the following character be protected by a patent, viz., the present endless chain or railway horse-power with a circular saw combined, for the purpose of sawing cord wood in the street, the machine to be portable, moving from one point to another on wheels."

We hope our correspondent will take no offence when we suggest that we can scarcely believe that Baltimore contains, in 1853, a person so ignorant of invention. Almost every railroad station in the country is provided with just such a machine as is here proposed to be patented *as a design*. We advise our correspondent to read the "Scientific American" very carefully, and purchase a copy of the Patent Laws to study during the coming winter evenings.

Steam Gauges—Moreau's and Eastman's.

Our readers will recollect that we published engravings of the steam gauge of J. Eastman, of East Boston, Mass., in our last volume;—since that time we have received a letter from E. H. Ashcroft, of Boston, accompanied with a circular, on which are engravings of Fountain Moreau's steam gauge—a French invention—which was patented in the United States August 20th, 1847. This patent Mr. Ashcroft purchased, and is now the sole proprietor and manufacturer of the gauges. He asserts that Eastman's gauge—as published by us—is identical with that of F. Moreau's, and the use and sale of which would be an infringement of the patent which he has purchased. We have not examined the Letters Patent of F. Moreau, but the engraving on Mr. Ashcroft's circular, presents a gauge similar to that which was illustrated as "Eastman's" on the page referred to above.

A Boomerang Propeller.

The Lady Eglington arrived at Quebec last week, in 13 days from Liverpool, and reached Montreal the 14th day. This steamer has recently been fitted up with the new propeller, known as the Boomerang, from its resemblance to the Australian weapon so called. It is the invention of Sir Thomas Mitchel, and was patented in the United States a few weeks ago.