SCIENTIFIC MUSEUM.

Improvement in the Steam Engine.

A mechanic of this city has constructed and set in motion a steam engine on the novel but obvious plan of working the "inlet and outlet valves" by the direct action of steam, instead of deriving the requisite power from the main agency of a train of working gear, as has been the practice hitherto. The valve-openings are placed in the ends of the cylinder—the valves are those most approved (puppets)—and the working is easy, precise, and rapid to a degree in any other mode of working impossible. In the old modes of working the valves, their motion is continued during the passage of the main piston through the length of the cylinder; in the new mode of working, with the disadvantages incident to their first construction, "the inlet and outlet valves" are fully opened in one twenty-fifth part of the passage of the main pistons through the length of the cylinder, and that so easy as not to be heard when working to an hundred and fifty revolutions per minute. The effect of the new mode of working the valves is to greatly reduce the bulk, weight, and cost of the engine, which is rendered more simple, effective, and durable, and the obstacles to the working of locomotives on common roads are in great part removed.—[New York Tribune.

[So far as the valve openings are concerned, by being situated in the end of the cylinder, this is nothing new, and we can understand it, but how the valves (puppets) are to be operated by the *direct action* of *the steam*, instead of its secondary action, is more than we can comprehend. Some rotary engines work by the re-action of steam like a turbine water wheel; they do not require common or uncommon valves. With respect to the cutting off, plenty of our engines can do this at any part of the stroke. How in the name of all that is sensible in mechanics this engine removes the obstacles to the working of locomotives on common roads, is more than we can imagine, unless the roads themselves are removed. The obstacles are not in the engine—the locomotive—but in the very nature of the roads, and the obstructions to free travel on every public road, which are all happily obviated by the railroad. There have been engines in operation in this city for years, which have no valve rods, nor puppet nor slide valves—no valves at all—but simply ports, which the cylinder opens and closes itself. To talk about working locomotives on common roads when we have railroads, is just about as bright, consistent, and sensible an idea as it would be to advocate lighting up our city with the old oil lamps in place of gas light. Before railroads were in use, the application of steam to common roads was a sensible idea, but even then, after repeated trials in England, and after more than thirty of such engines had been built and tried, they failed to produce any satisfactory results, and when locomotion on railroads was introduced, they all died a natural death.

There are some people, however, who do not know about these things, and whose experience in practical mechanics is so small as often to lead them to impose upon themselves; thus a patent was taken out last year in England, by a distinguished foreigner, for a *horse-power* for railroads, which is just as sensible an idea as steam coaches for common roads.

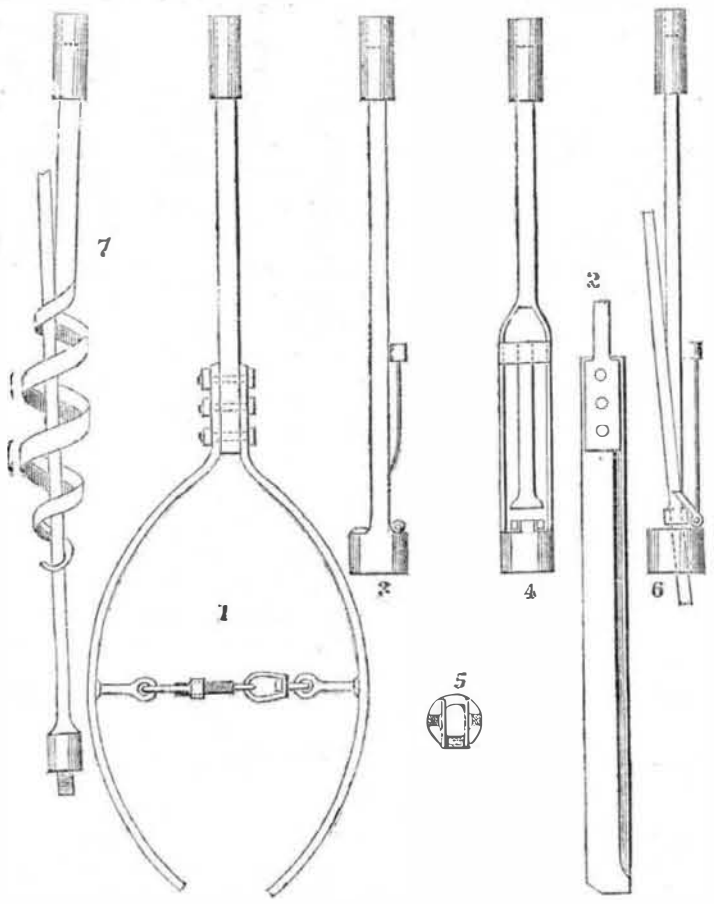
The Fire Annihilator a Fire Propagator.

The Hamilton Spectator tells a rather unfavorable story concerning Phillip's Fire Annihilator. The facts, as narrated by the Spectator are, that in consequence of a fire which broke out on board of the steamship Severn, in August last, during her homeward voyage from the Brazils, the Director of the Royal Mail Packet Company, besides taking other precautions to guard against the awful calamity of fire at sea, ordered a supply of Phillip's patent fire annihilators to be provided for each of their ships. Two were accordingly put on board the Severn, and were kept ready for use. On the outward voyage, we are informed that one of these machines suddenly ignited, and the plug blew out, sending forth such a volume of flame and vapor as was exceedingly difficult to subdue. Water was thrown upon the machine, but this only seemed to increase the offensive fumes, without decreasing the flames. The deck of the vessel was much burnt, and some little damage was done before the fire could be got under. Taking all the circumstances into account, the Severn had a second narrow escape from destruction by fire, inasmuch as if the annihilators had been kept in the store room, (which might have been presumed to be a very natural and suitable part of the ship for their safe keeping,) another and fearful addition to the loss of the Amazon would in all probability have resulted. If this account be true, as we see no reason to doubt, the annihilators should have their name changed at once.

Well Sinking---Artesian Wells.

(Continued from page 112)

Figures 1 and 2, in this plate, exhibit a spring rymer, the cutting edges are placed reversely, and the size is regulated by means of the screw and the swivel. This tool is for enlarging the hole. When the pipes are inserted some distance, it is important that the bore under them should be so far widened as to allow the pipes to be driven further. This tool can be forced down the pipe in a partly collapsed state, springing to its set dimension, as the softer ground under the pipe is cut away. Figs. 3, 4, 5, and 6 show a spring latch tool for raising broken rods; the forked hinge, has a tendency to shut by the action of the spring; therefore, when the tool is forced over the knob of the broken rod, as represented in fig. 6, the spring shuts the forked hinge under the knob, by which the broken rod can be raised. Fig. 7 is a spiral instrument, something like a cork-screw; this is used for the same purpose, when the knob on the rod cannot be easily seized, or when the knob on the weight to be raised will not overcome the friction of the screw. A tool, fashioned like a common lifting pump, is often used for very soft mud—a vertical up and down motion filling the body of the tool with the soft matter. Another useful tool for boring hard substances is a spiral winding round a hollow cone. As the boring goes on the material accumulates in this cone, and maybe thus raised to the mouth of the well. Many other tools may be used, and circumstances may require the adaptation of a new tool for a specific purpose in boring. Thus, in boring for the foundation seats of the cast-iron fire-tower in this city, it became necessary to widen the holes at the bottom, in the rock;—this was accomplished by one of the most simple and unique tools we ever saw, which was invented on the moment for that specific object, by Mr. Bogardus—the designer and builder of the tower. It consists of two peculiar-edged claws on one axis, which draw up together, but when dropped down, spread out and excavate a wider hole than that of the general bore. In England a patent was taken out, two years ago, for enlarging a bore at the bottom, for blasting, by employing acid to disintegrate the rock; this plan is troublesome and expensive, because all the acid has to be washed and dried out before the blast is packed; the tool we speak of accomplishes the same object mechanically, with less trouble and at less expense.



Since we penned our last article on this subject the Williamsburgh Water Co. has, it is publicly reported, purchased two ponds of fresh water, at some distance from that city, and this has been done although it had been asserted that a plentiful supply could be and was obtained from the boiling springs, where they have excavated in the lower part of the city. This shows that fears were entertained of future supplies from underground, as the heights of the city came to be occupied by houses.

As all under-ground springs are obtained from water falling from the atmosphere, it follows that a plentiful supply can always be obtained by collecting that which falls in showers. In the latitude of New York, as much water falls every year, in a space of thirty feet square, as will supply an ordinary family. For manufacturing purposes the supply has to be very great, hence factories are always situated on the banks of streams, large springs, or where water is brought from a great distance, as in New York, Boston, &c.

(To be Continued.)

American Fashion and Birmingham Buttons.

The pearl-button trade, in Birmingham, Eng., which has been dull for a long time, has recently received a considerable impetus from some large American orders; this is owing to a fashion which has sprung up in some of our States, for pearl buttons of comparatively large dimensions being worn by ladies, down the front of their dresses. The mother-of-pearl is very high in price just now, owing to the divers having left their avocation, in many places in the Pacific, and proceeded to dig for gold in Australia. The price of the raw material is $680 per ton. The black mother-of-pearl, found in Scotland, is very scarce.

A Patentee and the Bank of England.

The first proceeding under the New Patent Law Act, in England, was the application for a writ to examine a machine, used in the Bank of England, for lettering the pages of books. The applicant was J. Shaw, who made the application, he believing that the Bank of England was infringing his patent, and having requested an examination of the machine was refused. The order for inspection was granted by the Court.

LITERARY NOTICES.

SPEECHES OF T. F. Meagher—Published by Redfield; Nassau street, New York—Mr. Meagher, the Irish patriot, whose escape from exile was hailed with such enthusiasm by his fellow countrymen, some time since, and who lately lectured on Australia at Metropolitan Hall, has now presented to the American reading public a neat volume of his speeches in Ireland. They are arranged in consecutive order and enriched with notes and explanations from the pen of the eloquent orator himself. His title to this appellation no one can gainsay, for even in reading, his speeches manifest extraordinary talent, and when united with the tone and gesture of one speaking evidently from the heart, their effect was undoubtedly omnipotent. Ireland has always been distinguished for her poets and orators, the character of the people being more inclined to the imaginative than the really practical, and to some extent many of her misfortunes are attributable to this cause. The daring impetuous tenor of these speeches, and likewise their poetical flights with so little of the calm dispassionate statesman in their composition, were exactly suited to the feelings of their listeners. Mr. Meagher was the orator, *par excellence*, of the Irish confederates.

THE OLIVE BRANCH—This is a paper that we have been in the custom of taking to our fireside and reading at our leisure for several years. It is not filled with lengthy love-sick profitless stories like too many literary papers, but is well stored with interesting and profitable reading, nearly every article ending with a good moral or imparting some useful hints to some particular class of its readers. A new volume of "The Olive Branch" commences with the new year, therefore now is the very best time to subscribe for it. Address Thos. F. Norris, publisher, Boston, Mass.

BOOK OF THE WORLD—No. 4: Weik & Wieck, Philadelphia.—An entertaining number with three capital engravings—a Highland scene in Scotland, and two colored plates to illustrate natural history. The publisher keeps to his word, and fulfils all that he promises in his prospectus. This is an important point, for we have known many works brought out in numbers to be sadly deficient in quality after the first two or three.

WATER CURE JOURNAL—Vol. iv. No 6; Fowler & Wells, New York.—The recent number of this Journal is fully equal to its predecessors, and contains a vast amount of readable matter; it is also a very cheap periodical and ably edited. As the organ of the Hydropathic party, it is not very indulgent to the other schools of medicine, at which it gives some hard pokes at times. "Who shall decide when doctors disagree?"

PHRENOLOGICAL JOURNAL—Ditto—This is another serial by the same enterprizing publishers, who are fully deserving of all the success they meet.

CHRONOLOGY OF THE AMERICAN STAGE—This is a new book, by Francis C. Wemyss, of the American stage also, and published by Wm. Taylor & Co., 151 Nassau street, N. Y. It gives a short sketch of every actor and actress that have appeared on the American stage; it is quite pithy in some of its remarks, and is very entertaining.

MINIFIE'S MECHANICAL DRAWING BOOK—No. 2 of this excellent work is for sale by Dewitt & Davenport, 156 Nassau street, this city. No young mechanic can find a shadow of an excuse for not purchasing this book.

THE CAVALIERS OF FRANCE—This is a very neat and thrilling volume, by H. W. Herbert, so famous for such works, and published by Redfield, 110 Nassau st., this city: it contains the legend of Hugues de Coucy; the tale of Eustache de St. Pierre; the Fortunes of the Maid of Arc—the heroine of romance; and the heart-throbbing tale of Claud Hamilton, or the Massacre of St. Bartholomew.