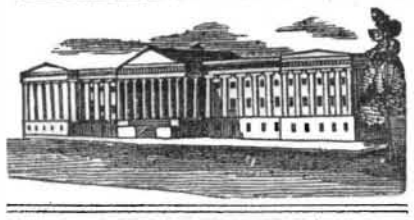

LIST OF PATENTS.

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending May 15, 1849.

To Patrick Bryant, of Chesterfield, Mass., for improvement in machinery for cutting and slitting Cheese Hoops, &c. Patented May 15, 1849.

To Joseph W. Webb, of Ledyard, N. Y. for improvement in the cut-off and steam stop of Rotary Engines. Patented May 15, 1849.

To C. K. Scudder, of Brooklyn, N. Y. for improvement in Chimney Caps. Patented May 15, 1849.

To J. L & H. K. Fountain, of Rockford, Ill. for improvement in Harvesters. Patented May 15, 1849.

To James Brooke, of Baltimore, Ohio, for improvement in Bedstead fastenings. Patented May 15, 1849.

To Homer Smith, of Hector, N. Y. for improvement in Grain Separators. Patented May 15, 1849.

To Jacob Post, of Newark, N. J. for improved Lock for Fire Arms. Patented May 15, 1849.

To Jonathan White, of Antrim, N. H. for improvement in Straw Cutters. Patented May 15, 1849.

To Cheney Reed, of Cambridge, Mass. for improved method of moving and fastening window Blinds. Patented May 15, 1849.

To A. W. Cary, of Brockport, N. Y. for improvement in Packing of Rotary Pumps Patented May 15, 1849.

To J. C. Coult & A. B. Davis, of Philadelphia, Pa., for improvement in Atmospheric Churns. Patented May 15, 1849.

RE-ISSUE.

To Nathan Chapin, of Syracuse, N. Y. for improvement in Atmospheric Churn Dashers. Dated May 9, 1848. Re-issued May 15, 1849.

Ventillation.---Combustion.—Decomposition.

Ventilation is the art of supplying by artificial means, the required quantity of oxygen for respiration, &c. This is to be accomplished by the air containing oxygen forced into the space requiring it, by means of blowing-machines, worked by steam, or other power; thus keeping up the supply of fresh air as fast as it becomes deprived of its oxygen. By this method we do not supply oxygen to that part of the air from which the oxygen has been withdrawn by respiration—that portion still remains deprived of its oxygen—it is, therefore, necessary to remove it, in order to make room for the pure air. This is accomplished by making an outlet for the air at the opposite extremity of the space to be ventilated, to that at which the air enters. Another method depends upon the fact, that air when heated, is rendered lighter, and has a tendency to ascend. To ventilate a space upon this principle, all that is necessary is that the air should have a means of entering at one extremity, and that at the other extremity it should be heated by means of a furnace, constructed in such a manner as to heat the air as much as possible with the smallest quantity of fuel. The more the air is heated, the greater will be the quantity of air that will enter in a given time, into the space required to be ventilated. It is on this principle that some of the largest mines in England are ventilated. They have two shafts, down one of which the air enters, and is directed along the different galleries, by means of doors properly arranged until it arrives at the other shaft, up which it is caused to ascend by a large furnace placed at the top. In this manner, galleries seven miles in length, have been perfectly ventilated by means of a single furnace.

In the construction of furnaces, the object to be attained, is the perfect combustion of the fuel. Now, this can only be arrived at by such an arrangement as will admit of every part of the fuel receiving a sufficient quantity of oxygen, for converting it into carbonic acid and water. If the supply of oxygen is sufficient, no fuel escapes from the funnel or shaft unconsumed. When, therefore, we observed the dense black smoke emitted from some of our factories, &c., we may well express surprise that men, clever in other things, should allow such a slur upon their ingenuity to exist. There are however, many circumstances in the way of improvement in this particular, which render this subject one of considerable difficulty, viz.—the want of knowledge, for it is obvious that a furnace requires more oxygen at one moment than at another; also that when fresh coals are thrown in, the supply of oxygen is required over or above the fuel, in order to unite with the volatile matters of the coal; at other times the supply of oxygen is required below, or through the fuel. It is impossible to make a furnace self acting in these particulars, and these are points seldom attended to. The remedy lies with the firemen, when they are properly instructed, the smoke nuisance will no looger exist.

It may be enquired,—if we, and all animals, constantly converting a portion of the atmosphere, into carbonic acid, and if all furnaces and fires, and even common candles or lamps, are also converting other portions of this oxygen into the same carbonic acid, how does it come to pass that the quantity of oxygen in the atmosphere is not so much diminished as to render it unfit for respiration?

Oxygen consumed by respiration and combustion, is converted into carbonic acid and water; now plants decompose both carbonic acid and water—converting the carbon of the one, and the hydrogen of the other, into their own substance, and give back to the atmosphere in a free state, the oxygen previously combined with these. In this manner a constant, and uniform supply of oxygen is maintained in the atmosphere.

Oxygen is the cause of the decay or putrefaction of vegetable and animal matter. The oxygen unites with the carbon contained in these substances, to form carbonic acid, and with the hydrogen to form water; the nitrogen contained in animal matter unites, in some cases, with the oxygen, to form nitric acid; in other instances the nitrogen unites with a portion of the hydrogen contained in the decaying substance, to form ammonia—this it is which gives to stale meat its peculiar disagreeable smell. In this way Nature converts the solid matter of dead plants and of animals into gases, which becoming diffused through out the atmosphere, serve as food for living plants, which again decompose these substances, taking from them what they require for their own increase, and giving back to the atmosphere the oxygen employed in the decaying process.

How to keep the Western Waters always Navigable.

In a Communication to the U. S. Gazette, Mr. Charles Ellett Jr. proposes to keep a supply of water in dams to be gathered up in the spring, and let gradually into the rivers, to keep them navigable during the dry months of Summer.

He says, what is needed to make the Ohio and all the great rivers of the West permanently available is a steady and plentiful supply of water. Nothing more. And nature has been bountiful in this also, and has furnished the water and necessary means of making it useful.

These rivers generally dry up in summer, to such an extent that navigation is almost entirely suspended. But an ample supply is furnished during the winter and spring, and annually discharged in destructive floods.

To improve the navigation properly, we must collect this wasted water in the mountain valleys, during the season of over abundance, and discharge it into the streams in the summer, when their sources begin to fail. We must dam up the mountain gorges and form lakes during the melting of the snows, and drain them off again when the summer drought prevails. As we harvest in the summer and store away the crops for winter's consumption, we must collect the rains in the winter and use the surplus water in the summer.

Just as we supply the deficiency of our navigable canals, so must we supply that of our navigable rivers—by the provision of the reservoirs. The greater channel will of course require a greater labor and the formation of larger lakes, and the value of the object will justify the greater cost of execution.

The character of the Ohio, and the topography of its sources, present the means of providing an ample depth of water for the movement of steamers of any desirable draught and the constant transportation of a commerce of any magnitude, that the necessities of society can create. For this purpose considerable lakes must be formed on streams having a moderate descent, running through wide valleys where dams of reasonable height will flood an area of some miles in length and breadth, and collect the waters of a district.

The Ohio in the upper part of its course will not average at low water more than eight hundred or one thousand feet in width. Its length from Pittsburg to its confluence with the Mississippi, is nearly 1000 miles, or 5,000,000 of feet. To raise the surface of the water one foot throughout the whole course of this river, will, then require a volume equal to one thousand times five millions—that is, five thousand millions—of cubic feet.

A reservoir capable of holding and furnishing a supply sufficient for this purpose—that is, for raising the whole surface of the river at midsummer one foot—would be about two miles long, one mile wide, and one hundred feet deep—which is certainly a very considerable lake.

To keep up the depth of five feet in the channel we must then obtain the means of supplying very nearly fifty millions of cubic feet per hour.

A reservoir of two miles long and one mile wide will contain more than fifty millions of cubic feet for each foot in depth. Therefore, to supply the quantity of water which is required to maintain a constant depth of five feet, such a reservoir must be drawn down at the rate of twelve inches per hour, 24 feet per diem; and, if it be 120 feet deep, must be exhausted in five days.

Reservoirs have been formed and used for many years in the canals of Europe, more than 120 feet deep; and there are points on the affluents of the Alleghany, Monongahela and Kanawha, where dams of that height could be constructed for two or three hundred thousand dollars, that would flood an area of eight or ten square miles, and supply water enough to maintain the navigation of the Ohio for a period of several weeks.

The Destruction of the Solar System.

Prof. Nichol of Glasgow University delivered a lecture before the Whittington Club, London, and closed it with the following extraordinary language. "The planets are retained in their orbits, because two opposite forces exactly balance each other. But modern astronomy has proved that there is a power at work destroying their balance. From observations made on the retarded return of Encke's comet, and its gradual approximation to the sun, we learn the existence of a fluid, an ether, which however subtile, tends to diminish the centrifugal force and add to the attraction of the sun. However slowly it may approach, we may yet contemplate the day when this present system shall pass away; not however, into a vast ruin, but in its own beautiful and majestic order, just like a flower, which having adorned the earth, lets drop its leaves when its work is done and falls back obediently upon its mother's bosom.

This Lecture was delivered on the 3d of last month, and at some future time we will endeavor to find room for it in our columns, as it is characterised by all the fervid eloquence and singular simplicity which in general distinguishes the gifted Professor's discourses.

New Cotton Mill.

The Lowell Courier says that the Atlantic Cotton Mill, at Lawrence, is in operation.—The water was let in on Tuesday afternoon, at 6 o'clock, and before eleven the next forenoon, the shafting was connected and moved round in fine style, to the great credit of all hands. In one minute's time, after the first revolution of the shafting, there were twenty four cards set to grinding; 2 looms, 2 spinning frames and one dresser were in operation; and before night, they had a loom making cloth, and one spinning frame making filling.

LITERARY NOTICES.

Godey's Lady's Book for June has been sent us by H. Long & Bro. 46 Ann st. N. Y. It is a real gem, and corresponds admirably with the balmy month for which it is designed.—The embellishments are numerous and exceedingly beautiful. First in order is "Ianthe," a steel engraving, illustrated by John Duffie. "View from West Point on the Hudson" "The Italian Flower Girl;" with a pleasant sketch from the pen of Henry G. Lee, which taken in connection may be regarded as the choicest portion of the number. Godey's enterprise through his long association with this publication has *justly* been the theme of praise.

Graham's Magazine for June, is made up of the choicest material in Literature and Art.—"The Star of the Night," is a magnificent steel engraving by Addison. "The Cottage Door," is a beautiful rural scene, and forces upon the mind of city residents a desire for the cooling streams and pleasant groves of country life. The engraving is so life like tnat we almost imagine ourselves enjoying the refreshness of the scene. The representation of Col. Washington at the Battle of Cowpens, is spirited and interesting, and highly creditable to the skill of the artist, Mr S. H. Gimber. This Magazine can be obtained of W. H. Graham, 151 Nassau st. N. Y.

Lindsay & Blakiston, publishers, Philadelphia, have just issued an American edition of Noad's Chemical Analysis, with numerous additions by Campbell Morfit, the able author of "Applied Chemistry." This work is a very valuable one on many accounts both to the experienced chemist and the student. It is one of the *treatises* for the *London Library of Useful Knowledge*, and embraces in a condensed form the qualitative and the quantitative analysis of chemistry. The American edition is very superior to the London one, both on account of the typography and the additions which have been made to it.

Ranlett's Architect.

Number 7 of this really able and beautiful work is now upon our table. It contains the designs of two cottages, with full specificatians and sectional plans. This is a number which every man should have who designs to remove to a new country. It also contains a clear description of the manner of making sun dried bricks, which we shall publish in a future number, as it will be useful information to many of our readers.

By the politeness of Risso & Leefe, No. 18 Courtland st. we have been furnished with a superbly executed likeness of Sir John Franklin, commander of the Arctic Expedition in the Polar Seas, whose fate has called forth the sympathy of all. $100,000 has been offered to any company who may be effectual in affording aid to this expedition.

American Mechanics.

The wealth of a well-stored mind, the big hand and the stout arm of the industrious mechanic, are worth more, for the perpetuation of our glorious principles of the government, for the prosperity of our country, that all the gold of the world. Already have their scientific researches—their unceasing and untiring energy—their many inventions—and their numberless improvements in machinery &c., given to our young Republic a glorious name and proud position among the nations of the earth. This class have contributed largely to the wealth and to the fame of our country. Trace it all out—lay bare the thousand secret springs of prosperity—follow up cause and effect as they fall in succession under your observation, and you will find American mechanics and artisans have proved to be in their energetic and industrious career, among the principal agents in effecting American greatness.

Substitute for the Potatoe.

Mr. Bryant, in his work on California, mentions that one of the Kanos Indians presented to him "a root of tuber, of an oval shape, about 1½ inches in length and an inch in diameter. This root is called the prairie potatoe. Its composition is farinaceous and highly nutricious, and its flavor is more agreeable than that of the finest Irish potatoe." Mr. Bryant thinks that with suitable cultivation it will make an excellent substitute for the potatoe. The root which is here described abounds in the fields, even in this portion of the country. It is generally known as the ground nut, and is sometimes procured by children and roasted, esteemed a fine edible.

A New Cheat.

A gentleman in Louisville purchased a fine looking roll of butter, weighing ten pounds; but on cutting it in two after reaching home, all but an inch in thickness of the outside proved to be mashed potatoe!