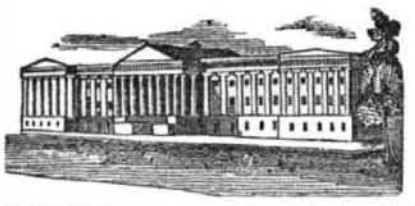

LIST OF PATENTS.

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending June 12, 1849.

To David Deihl, of Hanover, Pa. for improvement in Seed Planters. Patented June 12, 1849.

To Nelson Platt, of Ottowa, Ills. for improvement in Harvesters. Patented June 12, 1849.

To Joseph W. Briggs, of Cleveland, Ohio, for improvement in Harness Saddles. Patented June 12, 1849.

To Alfred Stillman, of New York City, for improvement in Steam Pipes for Sugar boiling. Patented June 12, 1849.

To George Colby of Fayettsville, Pa. for improvement in Drill Barrows. Patented June 12, 1849.

To J. Adams, L. Adams & L. H. Moore, of Mass. for improvement in Machines for cutting out Felloes. Patented June 12, 1849.

To F. C. Goffin & C. Liebrick, of Philadelphia, Pa., for improved Padlock. Patented June 12, 1849.

To Reuben Murdock, of Rochester, N. Y. for improvement in Barrel machinery. Patented June 12, 1849.

To Isaac Knight of Baltimore, Md. for improvement in Trucks for Railroad Cars. Patented June 12, 1849.

To John A. Taplin, of Fishkill, N. Y. for improved construction of the master wheel of horse powers. Patented June 12, 1849.

To Jacob Mumma, of Middletown, Pa. for improvement in Corn Shellers. Patented June 12, 1849.

To Chapman Warner of Louisville, Ky. for improvement in Churns. Patented June 12, 1849.

To E. Von Heeringen, of Pickensville, Ala. for improvement in Musical Notation. Patented June 12, 1849.

To L. P. Haslett, of Louisville, Ky. for improvement in Inhalers or Lung Protectors. Patented June 12, 1849.

To J. L. Mott, of New York City, for improvement in Cooking Stoves. Patented June 12, 1849.

The History of the Solar System.

By J. P. C. Nichols, Professor of Practical Astronomy in the University of Glasgow.

(*Concluded.*)

There is a little insect called the ephemera, which lives out its litetime in an hour. Supposing a reasoning ephemera were to contemplate the blossom, it would regard it as an absolute existence, as a thing which is thus and thus—and not as a thing which had become what it is. It would not imagine its developement from the seed down to its appearance in beauty on the tree. Man is ephemera; shall he decide of the august creation of his Maker, that it may not have a history and developement of its own? From what prior condition must we imagine the present solar system to have been evolved, in order that it may contain the arrangements and dispositions we have seen in it? This inquiry is by no means a novel one. Geologists have, with reference to our own planet alone, traced the present condition of things back to a fluid state of matter. I must go beyond that period and conceive the solar system as existing in a gaseous condition, in a chaotic, formless state. Now, in reference to the speculations in which I proceed to enter, I must say, that a great change has recently taken place. Sir Wm. Herschell thought—and with the facts then known, I see not how he could have reasoned otherwise—that many of the dim spots we see in the heavens are not clusters of stars, but accumulations of matter existing in the gaseous state. The discoveries made with the large telescope, at Parsonstown, have destroyed so much of the speculation as depended on the actual existence at the present day, of such gaseous accumulations of matter, and we reason only from the evidences of a former like condition of the solar system. The hypothesis must be accepted now, or rejected, according as it agrees with what we see around us and, also, according as it explains the phenomena for which it is required to account. The theory I am about to explain was given to the world by the great French astronomer, Laplace, than whom a greater man in this department of science has not appeared since our own Newton. The solar system may have come into being out of some nebulous mass, which has gradually condensed according to the simple laws of gravity. In order to understand what may have taken place, we must follow the condensation of this nebulous mass, and enquire what, according to known laws, would take place; and if we find that our system is just such an one as must result of necessity from laws acting under those circumstances, we shall have established a very high degree of probability for the hypothesis.—There is also one other hypothesis which we must assume at the commencement. The question is, in what condition may this nebulous mass have been in? Now to answer these we must ask, what is the great general distinguishing feature of our solar system? The answer is, the rotation of all its bodies round a common centre, and in one direction; and their own rotation on their own axis. Our supplementary hypothesis is, that the nebulæ out of which the solar system is formed existed in a state of rotation. This motion may have been very slow, and very indefinite; still it was a motion of rotation somewhat like a whirlpool. This assumption is further justifiable, because motion in a mass of matter that is condensing would, in obedience to mechanical laws, turn into a whirling motion. We assume then, that a motion of this kind existed in the nebulæ. It is a consequence of the laws of condensing bodies that this motion should become more and more definite, and the solid body coming out of this rotation will have a rotation round its own axis. The swiftness of the motion must increase as condensation goes on. Notice what condensation really means; It is simply a flow of matter from the extremity of the outer rim to the centre of the mass. As the outer particles are moving faster than those nearer the centre, if they are brought nearer to, they will increase the speed of the mass. The pironette dancer understands this mechanical law; when he wishes to astonish us by the rapidity with which he can turn round, he draws in his extended arms, and keeps them close to his body, and by that means greatly accelerates the rotation of his body. You are aware that the sun rotates on its own axis; it is an important fact, that the fixed stars, according to the belief of astronomers, rotate in a similar manner on theirs.—Rotation on an axis may be said to be the condition of steller existence; so that if these grand orbs came out of matter like our own, we may be able to explain how that motion originated. The rotation of the sun about his axis is an inherent part of our hyphothesis; but there is a question of far greater import. Does the same hypothesis apply to the forms of planets? We see how this central mass may originate, and have a rotating motion; but how do the planets arise in such a change? Let us conceive for a moment what it is that keeps up the connection of the nebulæ with the above mass. There are two forces acting upon every particle of matter on the outer rim, there is the tendency of each particle to fly off; and this tendency is counteracted by the attraction of the general mass. Now if one of these forces should ever get to be stronger than the other, the balance would be destroyed, and the connection broken. Now, the nebulæ must have had some parts of its substance less condensed than the rest; and if one part of this less condensable matter came to occupy this outer rim, it would separate itself from the mass, and fly off; we should have a separate ring of uncondensed matter. This may be illustrated by a common occurrence; it often happens that the grind-stone is driven round with so great rapidity, that what I have been supposing actually takes place; the balance between the centrifugal and centripetal forces is destroyed, and a piece of the outer circle flies off. Had this outer portion been not of stone, but a belt of elastic substance, instead of breaking into pieces it would have expanded itself, and made a separate ring at some little distance from the grindstone. Owing to the attraction of the earth, this ring would have fallen to the ground; but if the same could happen away from such a power of attraction, the ring would have revolved round the mass it had left. It is certain that from a mass composed of different portions of matter, such rings must separate themselves from the general mass of matter in course of condensation, so that ultimately a great solid globe would be left, surrounded by a number of subservient rings at different intervals of space. We now see how a dependent and separate matter may arise. Before proceeding further, let us see how far we have got. We have attained to the idea of the way in which dependent and separate matter might arise; how we might have a central globe and rotatory motion; and how, further, that rings must be thrown off from the equator of the mass.—This last fact is the explanation of the first question we proposed. How is it that all the planets move in the same plane? It is not only that all were thrown off the sun, but, that all were thrown off the sun's equator. It must be obvious that the rings would be thrown off there, and nowhere else, as the velocity and expansion would be there greatest. These rings would continue to turn round the central mass, with just the velocity it had when they left it. Further, whatever becomes of these rings, in whatever form they mould themselves, the masses they form must revolve almost in circles. We have now the explanation of three arrangements—first, of the motions of the planets all in one plane;—secondly, their motion round the sun, all in one direction; and thirdly, that they move almost in circles. The problem is then rapidly becoming simplified. We now ask—What may become of these rings: into what forms may they ultimately resolve themselves? There are three possible modes in which the rings may arrange themselves, two of which are very improbable, and still quite possible. Suppose that the outer ring had been perfectly uniform in its composition, no one portion being denser than another, then the ultimate form it would assume would be that of a solid ring; we should have solid rings moving in space round the sun. This, however, could not happen unless the ring was perfectly uniform in constitution at the time when it abandoned the mass. Such an improbable form, let me notice, we have within our own solar system—that remarkable ring round the planet Saturn, the only one with which we are acquainted. I think it is somewhat in favor of our hypothesis, if we can get evidences for it, even from the exceptions and anomalies in the facts we observe. Secondly; it the ring is not uniform at the time of leaving the mass, it must break up, and the denser portion would draw all the surrounding matter into one mass. Two things might then happen, supposing that the matter into which the ring was being drawn were so disposed as to balance each other in the circle of mutual attraction. It is clear that in that case we should have, not a ring, but a number of small bodies moving round the sun at small distances from it. This, though a perfectly possible occurrence, is one by no means likely. Singularly we have an instance of formation in the group of planets which lie between Mars and Jupiter; they are quite small, and appear to lie at the same distance from the sun. Thirdly: the mode in which a ring would be most likely to break up would be so that one denser part would absorb into itself the whole matter of the mass: the ring would resolve itself into one large body, which would assume the circular shape, and revolve round the sun. So that the general law of our system—that of a central mass, and other masses revolving round it—would be that which comes nearest to our hypothesis. We have not spoken of the rotation of bodies round their axis: these all move in the same direction. How is this to be accounted for? Let us suppose the outer rim of the masses to be broken up, and see what motion the fragments will assume. As the outer rim itself had a higher velocity than the rest of the mass, so the exterior portion of the rim has a quicker motion than the interior. When the ring is broken, the outer portions of each fragment will plunge over and over the inner portion, and cause rotation round the centre of gravity. From this fact we see the absolute necessity that every one of the planets should move in the same direction with its orbit. We have contemplated the birth and developement of this beautiful system of ours—dare we stretch our thoughts to that time when even it shall fail? If the theory laid before you to-night be the correct one, we may. You know how the planets are retained in their orbits; it is because the two opposite forces exactly balance each other. But modern astonomy has proved that there is a power at work destroying their balance.—From observations made on the retarded return of Euche's comet, and its gradual approximation to the sun, we learn the existence of a fluid, an ether, which, however subtle, tends to diminish the centrifugal force, and add to the attraction of the sun.

However slowly it may approach, we may, then, 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 on its mother's bosom.

The Pope's State Carriage.

The Pope's state carriage, a most gorgeous vehicle, commenced by Leo. XII., finished by Gregory XVI. and retouched during the reign of Pius IX., at an expense altogether of 24,000 scudi (£5,001.), was recently conveyed in great pomp from the Vatican to the Franciscan Convent of Ara Cœli, on the Capitoline hill, where it was formally made over the monks, to serve exclusively for the revered image of the infant Jesus, when carried to visit the sick and dying in various parts of the city. This image, considered by its beneficial results to be one of the most miraculous that Rome possesses, has nevertheless been hitherto borne on its charitable missions in an exceedingly shabby coach, so that the soldiers of the 'corps de garde' seldom recognized the equipage in time to present arms before it had gone by; buton that afternoon the good citizens and their wives wept with delight on beholding the *santo bambino*, attended by the guardian monks, installed in all the splendors of the papal carriage, and proceeding triumphantly down the Corso to visit the sick and wounded at the hospital San Giacomo.

LITERARY NOTICES.

The Pictorial Organ.

Messrs. Oliver & Brothers, the enterprising publishers, have just issued a splendid Pictorial as No. 1 of Vol. 9. Those who want to see a good pictorial should buy it and those who want *the* Temperance paper, edited with marked ability, should subscribe for it.

History of Wonderful Inventions.

This is a very able and useful book of the Boys' Own Library, published by Harper & Brothers. There are two volumes, 25 cents each. They should be in every family, as they are standard, and comprise a history of those things which have revolutionized society more than all the laws enacted by nations or battles won by heroes.

Our thanks are due to Drs. Wesselhœft and Grau, of the Water Cure Establishment, Brattleboro, Vt. for a copy of their very interesting Report. It states that 392 cases were treated hydropathically in 1848.

Messrs. Dewitt & Davenport have just issued a pamphlet, entitled Cholera, its Causes, Symptoms and Treatment considered and explained, by J. P. Batchelder, M. D., of New York. Some of the observations appear to us very reasonable. Price 12½ cents.

Through the politeness of Messrs. Dewitt & Davenport of this city, we have the July No. of Sartain's Magazine, which in point of excellence and beauty, fully equals if not surpasses any former number. The typography is exceedingly well executed, and the embellishments are of the highest order. We are gratified to know that this work meets an encouraging support.

Peterson's Ladies National is also on our table. "The Gentle Warning," is one of the best executed mezzotint engravings we have ever seen, "Edith," an equestrian figure, is also very pretty. This number commences a the 16th volume, and the great improvements which have been made by the enterprising publisher, we hope will not go unrewarded. The matter is always good and fascinating.—Dewitt & Davenport, Agents.