

Miscellaneous.

The Pulley and the Crank.

Our readers will remember the controversial articles which appeared in our columns, respecting the merits of the Pulley and the Crank. The following challenge, the greatest we believe that has ever been brought before the mechanical world, has resulted from it. If this challenge is accepted, it will create more excitement than any other, not excepting the war in Hungary, which has taken place during the last ten years.

UTICA, N. Y., Jan. 28, 1850.

CHAS. GREENELL Esq.—Dr. Sir,—I have perused your communication, published in the last No. of the "Scientific American," on the subject of "power points;" and I must say that I cannot agree with you in opinion, that the crank is the *ex plus ultra* in its way, of mechanical ingenuity." On the contrary, I believe the Crank to be an inefficient and wasteful contrivance for converting the reciprocating motion of the piston into a rotary motion of the propelling shaft. With these obvious views respecting the economy and efficiency of the Crank as used in our steam engines, I propose a mode of settling the question, in the only manner in which it can be satisfactorily demonstrated. That way is this:—To have two boats, (of about 6 or 8 tons each) of the same size and exactly alike, with paddle wheels and boilers of exactly the same size for each boat, and precisely alike. Then two engines, (of 6 or 8-horse power, each) one for each boat, with cylinders of the same diameter, and every other part of the engines of the same size and precisely alike, except that one shall be the common and usual crank engine, new and good and perfect in all its working parts; and the other engine have no crank but a pulley or pulleys instead thereof. That then you, or some friend for you, to have the exclusive and sole management of the boat with the crank engine, and myself, or some friend for me, of the other boat and engine,—and both boats to run in the same water, at the same time, and with the same equal pressure and quantity of steam. That boat which in running ten miles with the same pressure and quantity of steam, shall be ahead, to be regarded as having the most economical and efficient engine. I have had two such boats and engines built during the last season in New York, at a cost of over \$4,000. I have heretofore endeavored to convince you and others by argument, through the columns of the papers of the day, that the crank is a "bungling inefficient and wasteful contrivance," and failed to produce conviction. I am compelled now to resort to another argument—the argument of facts, it is said—to produce conviction.

I will bet both boats, boilers and engines, against \$2,000, (less than half their cost me) that the boat having the pulley engine, and no crank at all, will beat the boat with the crank engine, a mile in eight—that is, run 9 miles to the latter eight—with the same pressure and equal quantity of steam, and the boats (including draft and displacement of water) boilers, paddle wheels, &c., precisely alike, and the cylinders of the same bore. The pulley engine winning that bet, I will give you the option to receive the bet, upon the gain of a mile in 7. Then a mile in 6, then a mile in 5, and so on until the Crank wins a bet. After the second bet won by the pulley, I will, if desired, upon the expense thereof being paid, shift the engines—placing the pulley engine upon the crank boat, and vice versa; and will also, from the start, and at all times, give full permission to increase or diminish the size of the paddle wheels of the crank engine boat—and alter the engine (being responsible to me) for real damage only to the engine) in any manner you please, or to substitute an entire new engine, at your own expense, (keeping the bore of the cylinder the same) to suit yourself. Can anything be more fair? If the crank engine loses nothing, as you think, then, sure, the Pulley engine can gain nothing; much less a mile in 8. If you are not disposed to "back" your opinion in this way, you must see from

the character of my proposition that it is public conviction, and not the money alone of chiefly I seek. You have my consent to communicate this offer to any and every person whom you think may be inclined to accept it. The time and place for the trial to be the first Monday of May next, at New York. If you, or any friend of yours, desire to accept this offer, please address me here, (Utica, N. Y.), accordingly without delay, and forward this letter with an endorsement on the back thereof—Offer accepted, and signed with your name, together with the money to some friend of yours in New York, not more a friend of mine at the office of Hon. Horace Greeley, of the Tribune, on the first Monday of April next, at 11 A. M., to deposit this offer and your acceptance, and the money, and my Bill of Sale to you of the boats, boilers and engines, within six weeks—of New York. If you prefer E. K. Colburn, Esq., Agent of the Ocean Steam Navigation Co., New York.

For your gratification, or information, I will state that I reside at Milwaukee, Wis., and that I am neither an Engine-builder, engineer, or mechanic, but a lawyer by profession, and Inventor of the "Pulley Engine."

Very respectfully, &c.,
PETER YATE, (Pulley).

MARION, PRY CO. (Alabama),
February 1850.

PETER YATE, Esq.—Dr. Sir,—Your communication of the 25th ult. came to hand by yesterday's mail. In answer to which, permit me to say that I have no objections to "back" my opinions in the manner proposed by you, if no other than a "God's argument" will suffice to convince you of your error. But being the challenged party, I certainly have the right to choose my own ground, as well as suggest the manner in which the subject at issue shall be "satisfactorily demonstrated." My objection to the arrangements proposed by you, please excuse. First, your boats have been constructed under your exclusive direction and supervision, solely it appears, for experimental purposes—for which, as well as for practical ends, they are entirely too small, and the data to be elicited from an experiment with them, could not safely be relied upon as a foundation for any great practical results. Every man of science as well as of art, who is well acquainted with work well in model, that is, entirely inapplicable to purposes of practical utility, thus successfully illustrating that man's skill is limited, even in the application of the simple laws of mechanics. And again, if I were to win your boats, they would be of no practical use to me whatever, and I doubt very much if I could sell them in New York, for even one-fourth of their original cost.

Now that contest (if this matter may result in some preliminary benefit) to the successful party as well as practically illustrate to the scientific world, the comparative merits of Cranks and Pulleys, I must respectfully ask leave to suggest the following proposition, viz: That we deposit in the hands of Messrs. Munn & Co., (of the Scientific American, the sum of \$30,000 each, authorizing and empowering the said Munn & Co. to contract for, and superintend the building of two large boats, suitable for the conveyance of passengers and freight, and adapted to the Lake trade between Mobile and New Orleans. One of them to be built to the same model, precisely, and furnished with two steam engines, perfectly alike in every respect save the Crank and Pulley connections of the piston with the shaft. That they be freighted at New York with two-thirds at least of their entire tonnage, and working under a pressure of steam not to exceed a given quantity, to run at some future day from New York to Mobile. The fixing of said day, the amount of pressure of steam to be applied, &c., &c., including all other preliminaries, to be arranged and decided upon by Messrs. Munn & Co. On the arrival of the boats at Mobile, the said Munn & Co. their Agent, or attorney, to transfer to the successful party the sole and exclusive right in and to said boats, their engines, and appurtenances.

Thus will the question have been satisfactorily, as well as practically demonstrated. The boats on their arrival at Mobile, will then be

in a situation where they can be used to great pecuniary advantage, in plying between the two cities above mentioned, or be sold, if desired for cash, for more than one-third advance on their original cost. The freight and passage money from New York, would enable the successful party, after paying insurance and other incidental expenses, fully to remunerate the said Munn & Co. their agents, or attorneys, for their services in the premises. The faithful performance of which last arrangement, I insist shall constitute a preliminary condition of the contest. You will therefore be pleased, upon the reception of this, (a copy of which, with your letter, I have this day forwarded to Messrs. Munn & Co., trusting in their co-operation,) to deposit in the hands of the above named gentlemen the sum of \$20,000, together with a power of attorney directed to them, embracing in full, and in every particular, the above conditions. Whereupon the said Munn & Co. are requested to notify me forthwith of the fact, when it will likewise comply by forwarding my check immediately accompanied with a like power of attorney. All further preliminaries, conditions, and arrangements to be submitted to the sole control and management of said Munn & Co. I respectfully ask leave however, to suggest, that the following arrangements be made, viz:—The said boats to be named and called after their respective engines—the Crank and The Pulley. The party to be the Commander or Director of the Pulley, and I shall be the Commander or Director of the Crank. That upon the Pulley shall be deposited an extra copy, and on the Crank shall be deposited an extra pulley. That in the event the Pulley should get behind, and be in danger of swamping, that I shall have the privilege of insisting upon the attachment of the crank. And in the event the Crank should get behind, and be in a similar predicament, then you shall have the privilege of insisting upon the attachment of the pulley. And in order, the latter to carry out these arrangements, I further propose: That upon the departure of said boats from New York, six distinguished persons shall be selected from the passengers of said boats, 3 from those of the Crank, and 3 from those of the Pulley, who shall be sworn to set impartially, and be fully authorized that in either case, boat shall be left so far behind in the race, as to lose sight of the other, to declare the contest in favor of the foremost boat.—Whereupon the successful boat shall have the power to select its own companion in distress, and the committee aforesaid proceed to attach the crank, or the pulley, as the case may be. This arrangement I consider of vast importance, since, on the safe delivery of both boats at Mobile, will depend the beauty and interest of the adventure.

If you decline accepting the proposition herein set forth, or fail to comply therewith, within 15 days from the reception hereof, then you shall be considered as having "backed out," and I will consider the point at issue won. And now permit me in conclusion to assure you, that it will be useless to multiply words, or propose other conditions for settling this matter, than those herein suggested. I will consent to no other. The results of such an experiment would be final and conclusive, of some interest to ourselves peculiarly, and to the world scientifically. The ocean has now become the great theatre for the exploits of steam. Let the bet be made upon its waters, and not at all. It is the only field upon which great and important success is shown in steam navigation, that has not hitherto been introduced to the world. Establish the supremacy of the Pulley over the Crank on that field, and your fortune and fame are secure, otherwise you are destined to the shades of an impetuous oblivion. In return for the information relative to yourself, I will state that I am neither an Engine-builder, Engineer, Mechanic, or Lawyer, but an amateur of the arts and sciences, generally, and one of the editors of the "Alabama Commonwealth," the first No. of which will not appear till the 1st of next month, and is therefore as little known as your "Pulley Engine."

Very Respectfully &c.

CHARLES GREENELL.

Celtiberian Relics.

The French papers report a discovery in Ormy, in the department of the Oise, of interest to the antiquary. A piece of ground covered with large stones—apparently the remains of a mound or altar—was recently purchased by M. Renard, who commenced the removal of the stones. One of the largest he was obliged to blow up with gunpowder; when the entrance to a solidly constructed vault was disclosed, and several skeletons were found dressed from head to foot in bronze armor, with conical helmet and round buckler ornamented in the centre with a knob incrustated in gold, and wearing belts ornamented with silver plates. The quivers and lances were in bronze, like the armor. Near the stones which served as pillows to the heads of the skeletons were found six large vases of black earth, decorated with curious mythological figures (but what system of mythology they belong to, we have not seen stated) painted in white and sky blue. The largest of these vases is about 15 inches in height; the smallest contained a thin gold leaf, on which were traced about 150 small characters that are said to resemble the inscriptions found on the Celtiberian medals—which is natural enough. The inner walls of the vault were covered with traces of paintings—such as are still seen in Egyptian tombs—of a Bauguet, and of warriors, horse and foot. On the roof has been perceived the sun's disc, adorned with wings. These interesting relics, it is said will be presented to the Museums of Paris and Amiens.

Counterfeit Detector.

Our readers will observe in another column the advertisement of H. C. FOSTER'S Universal Counterfeit Note Detector. We have examined the system and have no hesitation in stating that it will do more than all others now in use, towards ridding the country of counterfeit notes. The instructions which accompany the magnifying glass, will enable a person with very little trouble, to determine between good and bad notes. We notice among those who have recommended the system, the names of F. W. Edmonds, Esq., Cashier of the Mechanics Bank, N. Y.; S. H. Arthur, Esq., of the Union Bank, C. S.; Sloan, Broker, Wall street, and many other prominent money dealers. From what we can learn we should think it a subject of universal interest.

Paine's Light.

Persons applying to us for information respecting Mr. Paine's Electric Light, will please bear in mind that, as soon as the inventor is ready to reveal its nature to the world, it will be sure to find a place in the Scientific American.

We are daily receiving newspapers with "please exchange" marked upon them. We should gladly accommodate all our correspondents in this way, but our exchange list is already larger than we care to have, and new applications must be disregarded, unless the publishers insert our prospectus. All newspapers containing this prospectus will be entitled to the Scientific American, through this Volume, without sending their paper, and we should be sorry to know that we had overlooked any in this respect.

Miss Mary Pace, aged 12 years, a scholar in the M. E. Sabbath School in Corning, noted, from memory, a few Sundays since, 4,000 verses from the New Testament—all of which she committed to memory in one week.

(The above is from a religious exchange.—) It is an excellent mental exercise, not only for 400 verses are too much for a child to learn in one week. We believe it to be useful to strain the memory of the young.

The attendance, in the schools in the city of New York, is larger this year than ever before, and an excellent mistake no one could be interested in promoting the causes of education.

It is said that the speed of swallows, when emigrating, is not less than fifty miles an hour; so that when aided by the wind, they soon reach various latitudes. It has also been calculated that the swallow can fly at the rate of ninety-two miles an hour, and that of hawks and several other tribes to be one hundred and fifty miles an hour.

Miscellaneous.

Correspondence of the Scientific American.

WASHINGTON CITY, April 15, 1850.

As was anticipated, that clause of the bill which relates to the completion of the wings of the Patent Office Building, has caused considerable commotion in the Senate. But you will perceive it has taken an unexpected turn; and the question now is, not whether the money shall be taken from the Patent fund, but whether it shall be expended at all. It cannot, however, be supposed that the plan of Mr. Dickinson will be adopted, viz., of giving the wings an unsightly ruin, as a monument to the impudence of Congress in suffering itself to be coaxed into the commencement of a work requiring six times the amount of the original estimate. It is too late to mourn over the past, and the only wise course left is to vote sufficient money from the Treasury to complete the job, and to act more wisely in future. After the proper quantity of indignation has been let off, I believe the amount will be appropriated to the use of the Patent Fund. The bill as amended will then be returned to the House, when I presume the difficulty will be settled by a Joint Committee of Conference.

During the past week a number of new models have been placed in the Exhibition Room of the Patent Office. Among them is a beautiful one of Hiram Tucker's Improved Mantel also one of Yerger's Artificial Legs. In the Hall of the National Institute have been placed a number of conspicuous specimens of Mexican armor. Not the least is a notable pair of pearly spikes of which are nearly the size of a tennisy nail. Armed with such weapons it is no wonder Santa Anna and his companions were enabled to run.

Quite a number of enterprising inventors, with working models for the inspection of Congress, are still in the city, but until the settlement of the slavery question, all attempts to attract attention will be labor in vain.

The making of models appears to be a profitable business, for no less than three persons have recently commenced business in that line near the Patent Office.

Many of our naval officers think highly of the invention of a gentleman of your city. It appears that the steam passes into the condensing apparatus from the cylinders, and being then resolved into water, returns again to the boilers, to go through a similar process, without wasting in the least. By the aid of this invention the fresh water in the boiler at starting can be used for an entire trip.

The Baltimoreans are cracking jokes at the expense of Mr. Porter and his balloon. They tell him if he will only give them notice of his intended aerial visit, they will give him a public reception.

Professor Beck has been delivering a very interesting course of lectures at the Smithsonian Institute, on the Chemistry of Nature. Several hundred young trees have been recently planted on the grounds of the Institute, which in a few years will furnish a most delightful promenade.

A large number of new casts of the bust of Daniel Webster have been sold at \$20 each.

One of our most eminent physicians asserts that a shock from a galvanic battery will prove an effectual remedy where a person has been stupified by an overdose of morphine.

An iron bridge over Rock Creek, near Georgetown, has been completed, and the cost is found to be not more than one-half that of a wooden one erected last year. Hancock iron bridges must in all cases supersede wooden ones, not only on account of their superior beauty, but for their durability.

I hear that the inventor of the machine for extinguishing fires on board vessels, will, when Congress is in session, test the power of his apparatus on an old hulk near the Navy Yard. Seeing will be believing.

When your New York Firemen, with their martial music, visited the President, his old war horse, who was grazing on the grounds, picked up his ears, and charged headlong into

them. He thought he was at Buena Vista. Does not this prove that the brutes have memory?

Important to Inventors.

A desideratum long called for, is about to be supplied, by which inventors and the public will be much benefited. The sage injunction, "a place for everything and everything in its place" has now been practically applied to the patent business in this country, for there are no regular marts for the sale of Patent Rights or the exhibition of working models. Mr. P. G. Washington, a gentleman very favorably known in this city, and, from his long connection with the Post Office Department, to the country generally, has taken this matter in hand in a manner best explained to yourselves by the following from his advertisement of the "United States Patent Agency," Washington:—

"It is not the object of this Agency to procure Patents for Inventors, nor to purchase Rights, but to receive Patent Rights in trust, and to assume the expense and risk of their introduction and sale, for an equitable commission on whatever may be realized. Its plan includes the establishment of depots where the public may find and purchase new inventions, and contract for the right to manufacture and vend the same."

The fecundity of American genius is only equalled by the eagerness of American enterprise to avail itself of its benefits, but many meritorious inventions lie wholly dormant for want of time, means, or opportunity, on the part of inventors to bring them properly before the public, while those they offer in the market, the knowledge is slowly diffused, and the sales correspondingly restricted. This Agency proposes to make immediate arrangements for introducing inventions to the public generally, in every part of the United States; and the exhibition, advertisements, and personal applications at which it aims, will enable the public to ascertain, examine and secure the newest mechanism, combinations and processes, in art and science, best adapted to any given use or employment."

Letters addressed to P. G. Washington, D. C., on the business of this Agency, will, if prepaid, receive prompt attention, in like manner letters may be addressed to, or personal enquiries made of, D. Wellington, (N. E. Patent Agency, Hasbun's Building, Court st., Boston.) A. L. Smith, (Northern Patent Agency, No. 2 John st., N. Y.), or to E. F. Raymond, (Central Patent Agency) No. 169 Chestnut st., Philadelphia.

[The above correspondence is published for the benefit of a vast many of our readers, who have valuable inventions patented, but who have not facilities for introducing them to the world. An Agency like the above, properly conducted, will have a tendency to do much good in behalf of the inventor and manufacturer, and we hope to see the designs of this country properly appreciated and their labors rewarded.—E.]

Ocean Steam Navigation to Europe.

The Cunard Steamers commenced their weekly trips from Liverpool last week and will run on to the 1st of May from New York and Boston.

The Collins steamer, five in number, will commence their semi-monthly trips on the 27th instant, and their weekly trips on the first of June. The Franklin will begin her trips to have next month and her mate will be ready in the fall. The Bremen line, two steamers, now leaves Southampton and New York once a month. The City of Glasgow will leave Glasgow on the 10th for New York, and thereafter leave each port in alternate months.

The Virginia Gold Mines.

The gold mines in Virginia owned by Messrs. Barnum & Co., of Baltimore, have been sold to a New York Company for \$40,000. These mines have been yielding, for several years, several hundred feet, but in that it expected gold will be found in more abundance and in larger quantities than near the top of the surface.

A Chinese lady with her two children arrived in this city last week from Canton, or Canton for London. She is a lady of rank and very beautiful.

Lewiston and Queenston Suspension Bridge.

This bridge which is to connect the State of New York with Canada at Lewiston and Queenston, will be, when finished, the longest bridge of one span in the world. It is now being erected under the direction of Mr. Edward W. Serrell, Civil Engineer. Mr. S. was one of Col. Hughes' first assistants on the Letsums of Panama, and made a great part of the location of the railway which is now being built from Chagres to Panama. He has also been engaged for several years upon the public works of this State and New Jersey. The bridge when finished, will be one thousand and fifty-two feet between the points of support—fourteen feet wide at the roadway, and is calculated to sustain a load of 800 tons.—The estimated cost of the structure is \$30,000. The Engineer proposes to have it open for public travel on the 1st of September next.—[All. Eve. Journal.]

[The Wheeling Bridge, which is now the longest in the world, is 1010 feet from centre to centre, at the supporting towers, 212 feet less than the one proposed for Lewiston. The aggregate strength of its cables is 4,950 tons, and it will sustain a load of 3,000 tons. The length of the cables, altogether, is 1,780 feet. The Albany Evening Journal must surely be mistaken about the price of the Lewiston Bridge—only \$30,000. The estimated cost of the Wheeling Bridge was \$139,000. Mr. Serrell is an able New York Engineer, possessing great energy, enterprise and knowledge of his profession.]

The Telegraph Bill.

The following is a Bill, which has just passed the Legislature of this State, and there is no one who can honestly find fault with it, and we know that its requirements were required.—

Any person connected with any Telegraph Company in this State, either as clerk, operator, messenger, or in any other capacity, who shall willfully divulge the contents or the nature of the contents of any private communication entrusted to him for transmission or delivery, or who shall willfully refuse or neglect to transmit or deliver the same, shall, on conviction before any court, be adjudged guilty of a misdemeanor and shall suffer imprisonment in the County Jail or Workhouse in the County where such conviction shall be had, for a term not more than three months, or shall pay a fine not to exceed five hundred dollars, at the discretion of the Court. Sec. 2. This Act shall take effect immediately.

New Orleans Mint Closed.

This mint closed on the first of this month. Mr. Macmuro, the late treasurer, sent in his resignation some months since to take effect so soon as his successor should be appointed, and the department has made two or three appointments, but the smallness of the salary in comparison to the duties and responsibility of the station, and the enormous amount of the official bond, have deterred the parties from accepting.

Early last month, Mr. Macmuro sent in his positive resignation, to take effect on the 31st of March, and no appointment having been made, the office has remained, with a consequent suspension of operations. The office has been tendered to various parties, who have declined for the reason stated above, and the United States are now without a Sub-treasurer in New Orleans.

Extraordinary Discovery.

Prof. Von Grusselach, of Stockholm, has very lately brought to light a method of perfection the art of producing a torpor in the whole system by the application of cold of different degrees of intensity, proceeding from a lesser to a greater, so as to cause the human body to become perfectly torpid without permanent injury to any organ or tissue of the frame. In this state they may remain one hundred or a thousand years, and again, after a sleep of ages be awakened to existence, as fresh and blooming as they were when they first sunk into the frigorific slumber.—[Exchange.]

[The good news has no doubt been dwelling among the bats and bees.]

Agricultural Address.

We are indebted to the Agricultural Society of Trumbull County, Ohio, for a printed copy of the transactions of their Fourth Annual Meeting, and which contains the Address of Saml. St. John, A. M., Prof. of Chemistry in the Western Reserve College. In perusing the Address we were struck with the freshness of the knowledge of its author—he is posted up with the very latest discoveries in Agriculture. Our farmers, we see, are exhibiting a most commendable spirit of enterprise and desire for scientific information in Agriculture. Ohio is the first Agricultural State in the Union, and appears determined to keep the lead.

Sir John Franklin.

One day last week news arrived in this city, and published in all the papers, announcing the safety of Sir John Franklin. The news was brought by the dog mail from the wilds of Minnesota—some Indians having seen the fleet of the lost navigator sailing safely through the North West Passage. The next day it turned out that it was the vessel sent in search of Sir John that was seen. It is our opinion that Sir John is no more, but it is singular how he traces to him or his hardy and scientific crew, have been discovered. It is almost like a tempting of Providence to go in search of him.

Mineral Riches of Southern Illinois.

The Morgan County Journal says that the little county of Hardin contains iron ore enough to build the Pacific Railroad fifty miles over, and the adjoining counties of Gallatin and Salina could furnish the State with coal for a thousand years. Pogo County has mines of iron which are of a kind easily prepared for the furnace, being the brown hematite. Hardin County is rich in solid bodies of lead ore, which is almost pure bismuth. Zinc is also found in great quantities in this same region, and frequently in the same mine with the lead. The ore is that called zinc blend—being a sulphure of zinc.

Silver Mines of Mexico.

The Vera Cruz Locomotive says that the product of the silver mines of Mexico, for the year 1849 will not be less than thirty millions of dollars. What becomes of it all? Mexico is always hard up, always poor, publicly and privately, always on the brink of bankruptcy. This is said to be a large sum that ever before extracted in one year from the mines.—The years 1834 and 1835, were very productive, but the quantities extracted did not reach thirty millions; it was about twenty six.

Leathers.

Tanners complain that it takes more hide than formerly to make a pound of leather, which they attribute to the quick method in which cattle are fattened for market. In 1793 there were 200,000 pairs of leather breeches made for the working people in England. This was the average annual supply. Now cotton fasteners, corduroys and other heavy manufactures have been used as a substitute.

Invention of Pegged Shoes.

The first man who pegged a shoe in this or any other country, is said to be now living at Hopkinton, N. H. His name is Joseph Walker. The sale of boots and shoes annually in Massachusetts alone is \$18,000,000 annually. This means wooden pegs, metal for pegs were employed among the Romans.

Stagnant Petrification.

The Mineral Pioneers say that at the mouth of Crow River, a navigable stream entering the Mississippi, on the west side, 35 miles above St. Paul, there are said to be visible in the bottom of the river, several petrifications in the shape of men and horses.

The boats on the North River are doing a fine business this Spring, but the Erie Railroad is taking away a great deal of travel from Albany.

James Montgomery complains, that the steam boilers in E. K. Collin's line are infringements of his patent,—some honestly say, that it is no more than mere evasions at best.

It is an object of some consequence to live in New York in a windy day, as it realizes a scene in the "Desert afar"—Just and dirt.

Scientific American

NEW YORK, JUNE 15, 1850.

Light and its Effects—Gothic Churches.

How sublime is the opening chapter of the Book of Books, "God said let there be light, and the light was." Before this command went forth "the earth was without form and void," but no sooner had the gladsome holy light dawned upon the dreary gloom, than order began to assume her sway and the earth to arise in beauty. What a world of gloom this earth would be without the glorious light. No wonder the region of condemned spirits is called "a place of blackness and darkness."

Without light we could have no idea of beauty. The brilliant diamond is the prince of gems. The idolater who bows to the sun exhibits next to him who worships the creator of the sun, the highest intellectual powers. Light is the nurse of the organic world. Without light the flower would not bloom, nor the meadow put on her mantle of green. And in animated nature, those animals which live in caves and in the dark places of the earth, are remarkable in their deformity. And those dark damp cellars, so numerous in Hamburg, in Europe, and New York in America, wherein dwell such a number of the human species, what are they but vanes of mortality and degradation.

Beauty, health, and pleasure cannot be separated from light. In art, the sublime and the beautiful pay homage to this truth. Well does the skillful painter know how to produce effects by throwing a mass of light upon the foreground of his picture. No wonder the "Transfiguration" is the master-piece of Raphael.

With our high civilization, it is justly to be expected that every attention would be paid to this subject, so far as it related to health, and pleasure. With respect to health, surely no one needs to be much more enlightened; and in respect to pleasure, let us indulge in a few reflections as connected with the art of church-decoration—a subject of no minor importance.

In art, it is genius which unites proportion, light and shade in wedlock; without genius to do this, the architect will produce a composition based upon the anti-aesthetic scale. This appears conspicuous in the interior decorations of almost all of our gothic churches. In some things we are a strange people, and in nothing more than a rivalry of fashion; Gothic architecture is fashionable and we rush into this fashion, be it appropriate or not, and like rival belles, one church endeavors to excel the other, if not in simple grandeur, at least in gaud and glitter. As beauty is arbitrary in her laws, nothing can be added or taken from them, without injury to the whole code, destroying their design and effect. Nothing but a pure taste should be consulted in interior decoration, in order that the whole parts may harmonize. That this rule has been extensively violated, we have but to enter all our more elaborately decorated wealthy gothic structures to be convinced, and convinced painfully. The harmony of color, in some of them, may be seen, but the harmony of colors—light and shade, never. As our architecture is a borrowed art, it would be a happy thing had the pure and the chaste alone been selected. If to carry out the design of such a style of architecture, it is necessary to make the interior of such churches like the shades of Pluto, then the sooner they are devoted to the moles and bats, so much the better, for certainly they are not suitable for the worshippers of Him who is "bright and a shining light,"—such places are not in harmony with the cheerful tone of worship suitable for those who expect to dwell in "the full effulgence of uncreated light." Some of these churches are so dark, that a stranger would require a clue to guide him down their sounding aisles. On entering one of them, it may be said, "darkness reigns on this place and [in respect to taste] thick darkness the people." That many churches are rich in decoration, no one will deny, but they possess neither harmony nor chastity. If gaudy coloring, and a profusion

of abominably colored glass, are evidences of correct interior decoration, then the majority of them may be considered the finest specimens of art, but leaning most certainly be left out of the question. There is no branch of interior decoration which requires a finer taste and a greater amount of skill than the grouping of colors in stained windows. In the majority of the churches to which we refer, yellow appears to be a favorite color. Whether it is chosen for richness, as like unto gold, or for sweetness, as being similar to a thin stratum of molasses, it is not easy to determine, perhaps the latter consideration is nearest the mark. To those who have viewed some of the finest specimens of Gothic Cathedrals there cannot be the possibility of a doubt upon the question of admitting more pure light into all our gothic churches. The good effect of this would at once be appreciated by the most un-sophisticated man. The side windows should always have tastefully colored borders, and the middle all white, except under the crowns of the arches, which should be tastefully executed in colored glass harmoniously blended, so that the "Watchers on the Walls" may have "their brows with roses and with myrtle bound."

The subject of light as connected with all that concerns man, is worthy of more attention from every individual than what it receives. If there is an organ of the human frame on which the Creator has exhibited more design and expended more labor than another, it is the orb of vision, and what is it but the window of the soul through which stream countless of light, reflected from countless flowers and imparting pleasure to the mind and health to the frame.

Perspiration.

Perspiration is an excrementitious exhalation from the body to free the blood from impurity. About five pounds of perspired matter is said to pass through the skin of a full-grown man, every twenty-four hours. There are two kinds of perspiration, sensible and insensible. The sensible constitutes visible sweating; the insensible passes off in the form of vapor, and of it we are not so conscious. When we see persons with large globules of sweat on their faces, we may be sure these have all passed through the surface—the perspiration has been going on quickly, that perspiration. It is dangerous for persons in such a state to expose their bodies suddenly to a cold damp atmosphere, as the pores suddenly close and perspiration is obstructed. In a cold atmosphere, when perspiration is checked, the vital heat is retained, and when perspiration is profuse, the heat of the body is discharged; hence the various quantities man perspires in warm and cold countries equalize the animal heat, and he is thus enabled to withstand the exigencies of different climates. The skin sympathizes with the lungs and other internal organs, and renders them healthy or diseased. The perspired matter is principally composed of water and carbon. It also holds in solution water and salts and animal matter. The oxygen of the air combining with the carbon, forms the carbonic acid which gives a kind of oily substance, which gives elasticity and softness to the skin. This oily secretion is very copious in the negro, making his skin remarkable for softness, and preventing the cuticle from cracking by the powerful influence of the sun. This is the reason why the tears of the negro appear like crystals rolling over a soft sabbie piece of fine fur. The skin so intimately sympathizes with the lungs, bowels, &c., that when perspiration is obstructed, these organs soon become deranged and diseased follows.

In warm climates copious and free perspiration is necessary for health. In some of the southern States and in tropical countries, when perspiration stops no time should be lost in making a will. Those who perspire with difficulty are not constitutionally adapted to live in a tropical climate; those who perspire freely are best adapted to live in warm latitudes. A cold climate, he who perspires the least is the most comfortable—in warm climates, the

reverse. The skin of some people is more sensitive than that of others, and in some it sympathizes so intimately with the lungs, &c., that when perspiration is obstructed only for a short time by the application of cold to the skin, they are thrown into spasms. In people of a sanguine temperament the membrane of the lungs becomes inflamed by a sudden stoppage of perspiration. In the lymphatic, the glands of the lungs are irritated, and in bilious people the stomach and bowels. This is the reason why different people are frequently attacked by diseases of different organs from obstructed perspiration. As the skin exercises such an important influence on the physical condition of every person, it is necessary to preserve it from injury, in order to preserve health. The skin should be kept perfectly clean, by being frequently washed and rubbed to remove all external obstruction to perspiration. Children should be wholly washed every day, especially before being put to bed, and then well rubbed with a dry cloth; adults also should be washed as often. It is the universal custom to wash in the morning, and before going to bed—the latter period is decidedly the best, although the former should not be neglected. The reason of this is, that during the day the exercise consumes part of our system, which our food is designed to supply, hence the continually wearing away and re-production of the different parts of our bodies. Evening, or during sleep, is the period designed by the law of our creation for the depositing of the new solid particles to supply the place of the worn out particles. Let all the wasted matter, therefore, be washed away outside, to allow the new to form freely, and to form in a more beautiful manner, for like the deposition of crystals, the particles of matter of the skin assume a smooth or coarse appearance, by the form of the extraneous particles on the outside. This is the reason why those who wash their teeth, face and hands before going to bed, have generally good teeth and fresh smooth skins. Cold sea water bathing in summer, and hot sea water bathing in winter, is good for the preservation of a healthy skin. If an internal organ be diseased, the cold bath should not be used. In such a case the hot bath relieves internal congestion by expanding the cutaneous vessels for the reception of a proper quantity of the circulating blood. The cold bath, in such a case, forces the blood from the surface upon the internal overloaded vessels, and in some cases this has caused death, the result of the malpractice of ignorant men. On leaving a heated room, persons should never expose themselves to the cold damp night air. Persons who are sweating profusely should avoid exposing themselves to a cold damp current of air as they would a cup of poison. There is, perhaps, less attention paid to this important subject than any other; this is the reason why there is so much consumption on our sea board at the east, and on the borders of our interior lakes. The condition of the skin for the promotion and maintenance of health, is something which should engage the attention of, not almost every person, but every person, for it concerns every human being on the face of the broad earth.

New American Coins.

Some new coins have been struck at the mint, Philadelphia, to illustrate the Bill presented by Senator Dickinson, which is now in the Committee of Finance, and they are alloys for one and three cent pieces. The one cent piece is designed as a substitute for the present copper coin, and contains the proportion of silver—one tenth—expressed in its legend. The effect of this infusion of precious metal, small as it is, besides lightening the coin perceptibly, is to reduce greatly the bulk of the coin of that denomination, and to make it much more convenient and portable. Its weight is twenty-five grains, while that of the present coin is one hundred and sixty-eight. It has a large round hole in the centre, which extends the diameter of the piece to a proper measurement, being the same as that of the dime which is as small as could be desired for such a coin; it affords a distinctive mark, by which the piece may be recognised and safely paid out even by the touch; it affords a facility to

retailers to put the pieces up in parcels, say of hundred or thousand, by stringing them, or putting them on a wire.

The three-cent piece is an alloy of three-fourths silver and one-fourth copper, its weight twelve and three-eighths grains; its diameter just midway between the gold dollars and the half-dime. The bill provides that its devices shall be "conspicuously different from those of other silver coins," and consequently we have a radiated liberty cap on one side, and a wreath enclosing the Roman numerals III on the reverse. It is also distinguished from the half-dime by a smooth border. It has the white appearance of pure silver. This coin is proposed as convenient adaption to the prices of many things, and to making change; but there is also a special object contemplated in relation to it. The country is weary of the worn-out Spanish money.

We cannot but hope that the admirable Spanish currency will all be thrown out of use in the course of a year or so. We hope the Bill will pass into a law as soon as possible.—There is no coin so convenient as the decimal kind, and none so barbarous as the 64 and 124 Spanish pieces.

Propeller Improvements.

In our list of Patents for the week ending the 26th ult., there is the claim for one granted to Mr. P. S. Devlan, of Reading, Pa., for a new combination, and application of a hitherto lost power, to assist the propelling power. Its main feature consists, as explained to us, in a very simple arrangement of tubes running from stem to stem on each side of the vessel into which the water rushes, as it presses against the bows, and on emerging from the stern, keeps the bow more submerged water-wheels of large size, which are connected by cog-wheel gearing to the propellers. The invention certainly looks like a practicable one, and seems to be founded upon correct philosophical principles. We understand that it has been pronounced upon favorably by distinguished naval architects in this country and England. Mr. Devlan calculates that his improvement, properly perfected, will reduce the time of a voyage across the Atlantic nearly one half, and save also one-half the fuel now consumed in the steamers. We must wait for time to show us whether these high-wrought expectations will be realized.

We have known Mr. Devlan for some years. He has taken out a number of patents, and is now on the road to fortune. He has recently obtained a handsome competency from the sale, in this country and in England, of his patent right for the manufacture of the "Lubricating Oil," recently invented by him; and is now erecting a new building in Reading, for making the oil upon an extensive scale, to supply orders from the Reading Railroad and other Companies, which are coming in upon him to an extent sufficient to keep him busily employed for some time to come.

Splendid Present.

We saw last week a splendid diamond ring just sent over by a gift by the Emperor of Russia to John W. Griffith, Esq., of this city, marine and naval architect, and author of the excellent work now publishing on that subject. The present was a mark of esteem for the skill and genius displayed by Mr. Griffith in a beautiful model of a ship forwarded by him to St. Petersburg. The ring had a number of huge diamonds, forming a St. George's Cross, with a splendid emerald in the middle. It is a ring of great value, and shows how the nautical genius of our countrymen is appreciated by the emperor of all the Russias.

Patent Case—India Rubber Pontoon Boat. On the 10th inst. week a case was decided before Judge Nelson, U. S. Court, this city, for an alleged infringement of patent for india rubber pontoon boats, Horace H. Day, plaintiff, Win. Ward, defendant. The claim of the patent was for india rubber air cylinders attached to the boat and its flexible bottom, and it seems the defendant had exhibited his boat at the last Fair of the American Institute as the patent, it is said, of Goodyear. The jury found a verdict of \$469 for the plaintiff. Geo. Gifford, Esq., was counsel for plaintiff. There was a move made after the verdict in relation to damages by defendant, but it was too late.