

For the Scientific American.
Flower Painting.

The art of painting flowers is one of the most interesting and beautiful in the department of imitative art. A knowledge of botany in all its branches, a correct eye, a practised and light hand, a consummate knowledge of colors, delicate pencil, high finish, taste, and a tact for arrangement, are all among the requisites for a painter of flowers. Van Huysum, Vernet, and two or three others, elevated this art above that of the mere botanical copyist; and one of its practitioners obtained the flattering name of the Michael Angelo du Floir.

Among the ancients, according to Pliny, flowers were used as symbolical of spring; and upon many medals which represent this happy season of the year, by four children or geni, that of spring always carries a basket filled with flowers. Hope is also figured by the ancient artists and poets as holding a flower in his hand. Venus is sometimes so represented, or crowned with a garland of flowers. Persons conveying good news crowned themselves with flowers, to indicate the happy tidings of which they were the bearers. They cast flowers in the path of those whom they would honor, as is still the custom at coronations and important marriages. Lovers ornamented with festoons and garlands the houses of their mistresses. They were also carried in the Floralia, as is still one of our customs on May-day. They also crowned with flowers the victims which were led to the sacrifices, and virgins when going to be married. They also decorated the tombs of their beloved and honored kindred with flowers, which they removed on the anniversary of their departure from this world, as is still the custom in Roman Catholic countries. The selection of the flowers, and the manner of arranging them into garlands, constituted an art among the ancients, which had its rules and regulations, and thus the females particularly excelled in communicating their sentiments by a garland, as the Oriental nations of the present day do in communicating a love letter in a bouquet, as Lord Byron emphatically expresses it in his address to a young Greek:—

"By all those tokens, flowers that tell
What words can never speak so well,
By love's alternate joy and woe."

Many epigrams in the Anthology, make us acquainted with the names of the flowers which they mostly used in forming these crowns and garlands, and the signification of them. It was not only the colors but also the odor of each flower that governed symbolical language. In the Book of Dreams of Artemidorus, are many explanations, the symbolical meaning of a list of flowers which go to the formation of a chaplet, or garland. Flowers, also, among the ancients, contributed to the festivities and joyousness of the banquet. The revellers wore chaplets or crowns of flowers upon their heads and around their necks, the perfumes of which were not only agreeable, but considered as antidotes against intoxication. They also crowned their goblets with wreaths of aromatic flowers. Many physicians of antiquity, particularly Meresithus and Collimachus, wrote treatises on the medical virtues of chaplets of flowers worn about the head. Flowers have been used in all times as ornaments and perfumes in houses, preserved in vases or goblets, with water. Upon many ancient medals, particularly the Byzantine flowers are thus displayed.

Among the early Christians, flowers were regarded symbolically, as representing gifts of the Holy Spirit. On this account it was at the feast of Pentecost, or Whitsuntide, the priest cast flowers from the upper ambulatories of their churches upon the congregation of the faithful assembled in the nave below: a custom which is still continued in Catholic countries, as well as the decoration of the churches with flowers, according to the season, both at Christmas and Whitsuntide; which latter custom is observed, also, in many English Protestant churches. Flowers are also held by Catholics as a symbolical of the delight of Paradise, and were accordingly figured upon the glasses of the early Christians.—To represent these beautiful and delightful works of Nature in painting, requires that delicacy, finish, lightness and taste, which is so peculiarly adapted to females; and many

of that sex have, consequently, succeeded in this elegant art.

Stirling's Air Engine.
(Concluded from our last.)

The principle of the Air Engine and the means by which it has been rendered effective consist in the means adopted for keeping the piston rods air tight and enabling the pressure of the air to be raised to such an extent as to bring the engine into a small compass. Also the use of a refrigerating apparatus for extracting the waste heat and bringing the air to a lower temperature than could otherwise be obtained. The greatest difficulty which the inventor met with, was in the proper application of heat to the outside of the air vessels. The hot air is applied by passing through a tube in the inside of a furnace and it is found that the flues, properly constructed, distribute the heat very equally over the surface and that the vessels do not exhibit a tendency to oxidization, no rare hurt by unequal expansion. Mr. Stirling's engine has a cylinder of 16 inches diameter and a four foot stroke, making 23 strokes per minute, and it worked for a whole day with a burden of 1,250,000 lbs. and drove 370 feet of shafting with an expenditure of only 1000 lbs of Scotch coal, including the quantity necessary to get up steam in the morning, equal to 600 lbs. of the best Newcastle coal. This engine only requires a cubic inch of oil to keep the piston and rod in order for two days. The air is worked sometimes at the maximum pressure of 16 atmospheres, but on this account it has been found to be no more, if not less, dangerous than steam engines. It drives all the machinery of the Dundee Foundry and after it has worked more than two years, doing more work than a steam engine of the same calculated power that had been there before, the piston was scarcely perceived to be worn but had a most brilliant polish while the air passages were not perceptibly corroded. The consumption of fuel is 2½ lbs per horse power per hour.—What is very remarkable about this engine is, the heat of the cylinder. It was stated by Mr. Leslie before the Association, that he had paid much attention to the engine, and he had found that the cylinder never was so hot as that of a steam engine.

We have thus briefly brought into notice on this side of the water, an air engine which has been very successful and more economical in regard to the use of fuel and oil, than the common steam engine. There are as yet no elementary rules for the building, nor theoretical tables to guide in the constructing of these engines. The art is but in its infancy, and it will require more experiments to test the real superiority of the air over the steam engine. The subject has received considerable attention, at least from one ingenious mind in our own country, who was not aware of any engine of the kind being in existence, and who maintained against much opposition that air was superior to steam as a motive power. The person we allude to, was Evan J. Purser, Esq., member of the Jefferson Medical Institute, Philadelphia, and respecting whose profession we made a mistake in one of our previous numbers. We hope that what has been said will lead to much experiment among the ingenious men of our country.—Much improvement has yet to be made and there can be no doubt but for ocean steamers the air engines would be an important advantage. No boilers are needed and consequently less weight of machinery, thereby affording a greater amount of room for coals in long voyages, or for cargo in short passages. We most urgently desire to impress upon the minds of our mechanics and ingenious citizens, the importance and value of such an engine for propelling carriages on our plank roads and other good turnpikes.

Illustrated Window Labels.

In the window of a victualling shop in Glasgow, there is a picture of a chimney sweep tumbling off a house on the top of a Baker's board and the buns chasing one another across the street and a host of chimney sweeps chasing the buns. In another window in the same city—a silk Meacer's—there is a lot of black silks, labelled Family Mournings, and a death's head and cross bones ornamenting the top of the card.

For the Scientific American.
An Inventor's Institute.

Mr. Editor:—

Sir:—The remarks which appeared in the last number of your paper, concerning a plan recently concocted in the "upper regions" of one of your contemporaries, and purporting to be for the formation of a company to be called the "American Inventors' Institute," were, in my estimation, not only appropriate and deserving, but such as will help to deter all designing persons from hereafter attempting to impose upon the good sense of a discerning public. That such an institution, properly organized, and honorably conducted, would be beneficial to that class of inventors, who have more of intellect than they have of gold or silver there can be no question or doubt.—And it may, also, be reasonably supposed that capital employed in this way would prove a very profitable investment to the stockholders. But any thing of the kind must have something substantial in its nature, in order to produce a favorable result—it must partake, in some small measure, of the essence of fairness before it can claim the support and patronage of a discriminating, though liberal, public. And when an effort is made by any irresponsible person or persons to throw a mass of valueless stuff (valueless from its nature and character, as well as design,) on the shoulders of a community, they may rest assured of its being thoroughly weighed in all its bearings and consequences before that community will suffer them to pin it to their backs.

Mechanics are a most useful class of society, and their arts should ever be fostered, their interests advanced, and their rights sustained, in every honest and honorable way. For whatever increases their interest, redounds to the interest and advantage of all other branches of industry; disseminates useful knowledge, and adds to the wealth and power of all civilized nations. Any undertaking, therefore, to cajole them out of their hard earnings would be as mean and unmanly, as it would be unjust. No long drawn argument is necessary to prove the nonentity of these self-constituted and self-styled Associations, with all their plausible professions of philanthropy. For any company of this kind, formed without a legislative enactment, or anything to recommend it but the *ipse dixit* of its projector, discovers, at once, to the commonest observers the slender foundation on which it is based. It commences without a beginning, and must end without a result. In its operations it is 0 from 0 and nothing remains.

Your likening this affair to a Mississippi bubble really makes it savor very much of something that is wrong in New York, and this is true. We have bubbles in our own State at no great distance from home. That magnificent one for instance, which covers the spot a few miles up the Hudson where Captain Kidd once sunk a vessel loaded with golden treasure.

The beauty of this grand enterprise is only equalled by the sublimity of its conception.—In short, all such chimerical projects are like a Rhode Island Electro-Magnetic Association or visionary Flying Balloon scheme: the one requiring the veriest subtlety for its propelling power, and the other a full inflation of gas for its support. J. D. C.

Bible Pictures for the Young.

I wish particularly to record the effect of old associations, with the earlier Bible narratives. I feel quite sure that the use of the sacred dialogues as a school-book, and the pictures of Scripture scenes which interested my boyhood, still cleave to me, and impart a peculiar tinge and charm to the same representations when brought to my notice. Perhaps when I am mouldering in my coffin, the eye of my grandson may light upon this page, and it is possible that his recollections may accord without my present anticipations of the effect that his delight in the Pictorial Bible may have in endearing still more to him the holy word of God. May it tell with saving effect on his conscience in whatever way it may effect his imagination; and let him so profit by its sacred lessons of faith and piety, that after a life of Christian usefulness on earth, we may meet in Heaven, and rejoice forever in the presence of our common Father.—Dr. Chalmers.

Morse's Telegraph.

Morse's Telegraph is the subject of a long article in Silliman's Journal for this month, by Chas. T. Chester—who states that it is on the exclusive use of the electro-magnet, and a certain combination of circuits, requiring the aid of the receiving magnet, that the value of Morse's patent depends. He thinks that four times the present number of wires and operatives would be required by the business on the chief lines, if the machinery were more perfect and reliable. The transmission of words is now so rapid that no penman can keep pace with it. On one occasion 25,000 letters have been transmitted in one and a half hours, with two instruments and wires.

"Two wires were at work, one through 300 miles, the other through 500. Four hundred and fifty private messages were sent or received, composing every variety of business and information. Twenty-five chargeable words were the average length of these 450 messages, so that one office must have realized, in cash for that one days work, near \$1,000, by the tariff laid down, of 25 cents for 10 words.

"House's patent machine cost ten times as much money as Morse's, and his object is to make at one end of a wire the revolution of a disc, upon whose edge the Roman letters are raised, synchronous (simultaneous, or at the same time) with the operations of a lettered finger-board at the other end of the wire; so that at the touching of A on the finger board, the wheel presents and impresses A on a slip of paper."

The telegraph lines now completed in this country embrace 2,989 miles.

TO CORRESPONDENTS.

"J. L. of N. Y."—The old way of measuring tonnage was, to multiply the length of the keel by the breadth of the beam and that product by half the breadth of the beam and dividing the last by 94 gave the amount of the tonnage.

"R. M. M. of Conn."—Your model is forwarded to Washington. So is "C. C.'s," of N. Y.

"J. M. of Ohio."—The Patent Office will be guided in their decision by *new and useful*. We have heard the same complaints as yours from a number, but we cannot and will not give expression to the excited feelings of any person. Real tangible facts are alone the basis of all that we assert or will assert.

"S. M. M. of Mass."—Gutta Percha is the best covering for rollers that we have ever seen. We can furnish bands and soles of boots or shoes, and thin sheets of it.

"L. J. R. of N. Y."—The new material for paper appeared long ago in our columns, also the Curious Clock.

"J. B. of Va."—It is not possible for us to say which wheel is the best. Twenty-five patents have been granted for Reaction Water Wheels. You will find much valuable information on this subject in the back numbers of the Scientific American. Munger's Turbine is no better, if as good, as others.

"E. A. D. of N. Y."—We cannot see how a screw propeller would act as a Reaction wheel at all. The effect of the Reaction wheel is the result of discharge and if you construct a screw on the same principle, it is essentially a Reaction wheel. There are a number of forms for the buckets.

"W and P. of N. Y."—Your Washing Machine in our next.

"U. T. of Maine."—Address Alex. Ross, manufacturer of Fitzgerald's Portable Mills, New York. It is a good machine.

"L. V. B. of Boston."—Your alarm is simple and beautiful and there is much truth in what you say regarding price.

"J. V. R. of N. Y."—We cannot agree with you that *inertia* is more than a mere passiveness of matter, we know that some blundering authors are still rooted to the old theory, an inclination of matter to rest.

"J. W. of Mass."—We will give your invention due consideration.

"J. R. N. of Mass."—We should be pleased to hear from you often. Such communications as you propose are always thankfully received by us.

"H. C. of Pa." We believe the roofing composition referred to will not be so good