

Scientific American

NEW YORK, JUNE 1, 1850.

Our Atlantic Steamers.

The Atlantic, the first of the Collins' American Mail Line of Steamships, has made her first voyage across the ocean. She made the passage in thirteen days to Liverpool. Many of her friends stated, when she left New York, that they would feel disappointed if she did not make the trip in ten days. The reason why she made so tedious a voyage is stated to be "the breaking of the valve of one of her air-pumps, and the breaking of a number of her paddles."

We feel not a little regret at her somewhat unfortunate trip, but we had no such ideas of her high speed, as were propagated through the columns of our daily press. It was stated in all our daily papers that she ran at the rate of 18 knots per hour on her trial trip. If this was true, she could make the voyage to Liverpool in eight days. The character of our steam ships has received more injury from the inflated boastings of ignorant commentators than from any other source. We hate rant and cant in essence and principle, and have very little confidence in the prudence or judgment of those who forget the old maxim, "let not him that putteth on his armor boast." We have now but entered into competition with Great Britain for a share of Transatlantic Steam Commerce. She has had the monopoly of it for twelve years, and with her great experience in marine navigation it is not wise to under-estimate her abilities, and over-estimate our own. It is best to look every difficulty in the face and meet it with compressed lips and determined hearts. It is more glory to hear others cheer for us than to cheer for ourselves. Washington never exhibited greater wisdom and magnanimity than when he told his war-worn veterans at Yorktown, not to cheer at their own victory,—"posterity would cheer for them."

We have now four steamships running to Europe. As yet none of them has been so successful as their opponents, the Royal Mail Line. Our steamships have not been so well constructed as a whole. There can be no other reason assigned for our want of greater success, than this. The principal blame is thrown upon our engine builders by the press, but it is not their fault altogether, as the side bags of the Washington can fully testify. We want experience principally, for, until within a few years, there was not a single steamboat in America capable of crossing the Atlantic. Our boats were built for river and lake navigation, and were totally different in build and trim from those adapted for ocean navigation. Our opponents have been experienced in marine navigation from the very origin of the art. The rivers of Britain are so short, and the sea coast so extensive, that all their steamboats were built to brave the storms of the Atlantic. From the great speed of our razor-shaped river boats, many, not merely supposed, but asserted, that all we had to do was to launch our sea steamships and drive Uncle John Bull at once from the ocean. With preconceived prejudices, our first steamships were built with engines after a touch of our river craft, but our engineers have wisely adopted the policy in their new engines, of taking those models which experience has proven to be the best, and in a short time we will equal, we do not say surpass, our rivals.

The Pacific left this port on last Saturday, on her first voyage to Liverpool. She looked well and will make the voyage, we think, in about 11 days. All that we have to do to attain and maintain equality on the ocean, is to persevere until success crown our efforts.

The Using of Paint.

It is not an uncommon thing for some paints, especially when exposed to the atmosphere, to rub off like whitewash, after they have been put on for about six or eight months. We have known white paint do this, although both the oil and white lead were said to be good. In respect to white paint, which is most extensively used, there are three things which

may be the causes of its inferiority and rubbing off. These are bad oil, bad lead, and too much turpentine. The best linseed oil only should be used, and it should be boiled, but not too long nor at too great a heat. Linseed oil is frequently adulterated with sun-flower oil, which is very inferior to that of linseed.

Sometimes white lead is sold which is very inferior to others, but painters know how to judge between the good and bad. The best can easily be ascertained by painters from the quantity of oil required to give it proper consistency. In mixing paints, there should be no turpentine at all used for outside work (at most the smallest possible quantity) because the turpentine makes a soap of the oil, consequently, it soon will rub off or be washed away by storms, &c. The only benefit of boiling linseed oil is to drive away its moisture, and ammonia, so that the gluten of the oil will form a beautiful skin or varnish, when dry, to protect the lead from the effects of the atmosphere. While turpentine forms a good varnish with resins and gums, its combination with oil is altogether different, forming a soap, hence those who know not this fact, and use too much turpentine with their paints for outside work, may expect to see it disappear before it is very old. The best way to put on white lead for outside work, is to commence with a very thin coat, and let it dry perfectly. It is better to put on four thin coats, one after another, than two thick ones. The labor, to be sure is more expensive, but those who buy their own paint, and use it in the country, will find out that it will be a saving in the end.

In painting woodwork, the first operation consists in killing the knots, from which the turpentine would otherwise exude and spoil the work. To effect this, the knots are covered with fresh slaked lime which dries up and burns out the turpentine. When this has been on twenty-four hours, it is scraped off, and the knots painted over with a mixture of red and white lead, mixed with glue size. After this they are gone over a second time with red and white lead, mixed with linseed oil.—When dry they must be rubbed perfectly smooth with pumice stone, and the work is ready to receive the priming coat. This is composed of red and white lead, well diluted with linseed oil. The nail holes and other imperfections are then stopped with putty, and the succeeding coats are laid on, the work being rubbed down between each coat, to bring it to an even surface. The first coat after the priming, is mixed with linseed oil and a little turpentine. In laying on the second coat, where the work is not to be finished white, an approach must be made to the required color. The third coat is usually the last, and is made with a base of white lead, mixed with the requisite color, and diluted with one-third of linseed oil to two-thirds of turpentine, for inside.

Painting on stucco, and all other work in which the surface is required to be without gloss, has an additional coat mixed with turpentine only, which, from its drying of one uniform flat tint, is called a flattening coat.

If the knots show through the second coat, they must be carefully covered with silver leaf.

Work finished as above described would be technically specified as knotted, primed, painted 3 oils, and flattened.

Flattening is almost indispensable in all delicate interior work, but it is not suited to outside work, as it will not bear exposure to the weather.

Painting on stucco is primed with boiled linseed oil, and should then receive at least three coats of white lead and oil, and be finished with a flat tint. The great secret of success in painting stucco is, that the surface should be perfectly dry; and, as this can hardly be the case in less than two years after the erection of a building, it will always be advisable to finish new work in distemper, which can be washed off whenever the walls are sufficiently dry to receive the permanent decorations.

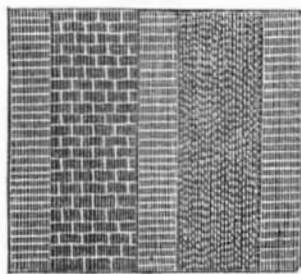
The Paving of Streets.

As the advantages of good roads through the country are unquestionable, so the benefits of well paved streets in cities are no less apparent. Good roads are an evidence of civiliza-

tion. The Indian follows the trail of his forefather, and gives evidence of some kindred instinct like the brute, but the civilized man levels the mountain and fills up the morass to make a permanent pathway for the horse and his rider, the carriage and his driver. The importance of good roads was not unknown to the ancients, and to the Carthaginians, a commercial people, is the invention of paved roads traced. From them the Romans learned the art as they did that of shipbuilding. During the reign of Julius Cæsar the Capital was in communication with the chief towns by well paved roads which branched from the seven-hilled city, at one time, to every province of the empire. The Romans introduced their system of roads into Britain, and they were made upon a gigantic scale, with an eye to permanency, it being the common opinion then that the Roman Empire was to endure for ever.

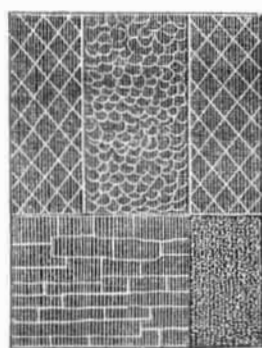
We here present three cuts of different kinds of pavements, to show different kinds of it and to illustrate it, as this is a subject with which many are less acquainted than would be supposed.

FIG. 1.



This is a pavement made of large thick flags for the wheel tracks and filled in between with neatly laid small rectangular blocks of trap. The tracks and foot ways are laid in a bed of concrete and cement, made firm and evenly, and the whole surface made slightly convex.

FIG. 2.



This is a pavement called the "Perrine pavement," and is now being laid down in a part of Broadway. The street is excavated to considerable depth, and a tier of broad flag stones laid down first, the seams of which are filled with pitch; above this is laid broken metal and gravel, the pitch being freely used amongst it, and then on the top are laid the diamond block tracks for the wheels, with the horse tracks between, made of cobble stone. There are four tracks on the width of the street, and the whole is gently rounding.

FIG. 3.



This is a pavement made of oblong blocks of trap, each of about 10 inches long and six broad and six deep neatly trimmed. The ground is excavated about 14 inches and a strata of 4 inches gravel mixed with sand and some plaster of Paris is laid down and well beetled and levelled and then sprinkled with water. Then another strata is laid down of the same stuff and treated in the same way, making it slightly convex. On the top of this these oblong blocks are laid in among a bed of sand mixed with ground burnt bricks. These blocks must be accurately laid and well rammed down, and in our opinion will make the best pavement for a business city like New

York, where there is an immense amount of travel.

The idea of paving the streets of modern cities is derived from, and based upon the Roman roads. Many of these are still in perfect repair in Italy, especially in the neighborhood of Rome. The stones are generally of trap rock, of a polyangular shape, of a very large surface, and about fourteen inches deep. They are slightly pyramidal, and set with their broad faces upwards. They are well fitted together, and sometimes laid in cement, though not always. In Naples the blocks are rectangular (mostly square) of about two feet, by two surface, and six inches in thickness, well fitted together, placed diagonally on the street, and laid in a thick bed of Roman cement.—This pavement excels in solidity and evenness, but becomes dangerously smooth, hence it is necessary, from time to time to cut grooves on its surface. The city of Rome is paved with blocks which are parallelograms, of about ten inches square surface. They are laid in a thick bed of cement. In the cities of northern Italy the roads may be called stone railroads, as the tracks for the wheels are broad flat stones, laid with precision, while the tracks for the horses' feet, between the lines, are paved with small stones. This is a good pavement, when well made, and was partially carried out on the great turnpike between the cities of Albany and Schenectady, in New York. None of these kinds of pavements are suitable for such a city as New York, in our opinion.

A great number of different kinds of pavements have been tried in New York city. The cobble stone, or small boulder pavement, is the oldest, and not a bad pavement when well laid down, but this is seldom the case, and one great difficulty in the way of its endurance, is the great variety in the quality of the stones. Wooden blocks were at one time supposed to be the best of all pavements, before their enduring qualities were tried. The pavement which has got the name of "Russ" in this city, is nothing more nor less than the Neapolitan pavement only its pozoloni bed of concrete for the diagonal blocks, is made in sections. It will soon have to be treated in this city, after it becomes smooth, like the pavement in Naples. This is the only objection to it, but it is a very serious one. The pavement in figure 1 is the best for steep inclines, to allow horses to pull heavy loads up the same, and although not required in such a city as New York, it may be good for some other city. The Perrine pavement is not suitable for streets like Broadway, where the carriages and omnibusses will be continually crossing the tracks, and it will be expensive for repairs, because there is so much street lifting for gas pipes, and common sewers. The Russ and Perrine pavements are solid and lasting, but we must look to a pavement that will be enduring, easily repaired, easily laid down, and that will obviate the surface difficulties of the two pavements mentioned, such a pavement is figure 3. It is smooth, yet presents an excellent foothold. It is enduring, can be laid down in one half the time of the Russ, and one-twentieth of the time of the Perrine. It will allow easy access to drains and pipes, and its substrata will be impermeable to water, and firm—qualities desired for a good pavement. We commend it to the attention of our City Inspectors and paving engineers.

Reform of the Patent Laws.

The Bill for the Reform of the Patent Laws which has been considerably discussed in the Senate, and amended, has been recommitted to the committee on Patents. Whether it will become a law this session, or not, it is impossible to tell at present.

Thanks Due.

We are indebted to Gregory's Express for the prompt delivery of a package of gold from San Francisco on the afternoon of the arrival of the Crescent City. The business at this end of the route is under the efficient management of Mr. J. C. Thomson, office 149 Pearl st., N. Y.

We are indebted to several senators and representatives in Congress for valuable public documents.