NEW YORK, SEPTEMBER 16, 1848.

The end of the Volume.

Our subscribers must now arrange their numbers and get them bound. Those who cannot get them bound conveniently, should fold all their numbers nicely together and stitch them with a stout linen thread, covering all with a strong sheet of pasteboard. The Scientific American is now the Repository of American Art and it would have been of great benefit to our Country had such a paper been in existence twenty years ago. We do not speak thus in reference to any merit of the paper,—it speaks for itself—but we refer distinctly to it as a medium to disseminate a knowledge of American invention and spread abroad a peculiar kind of information. Many a subscriber has saved a great deal of time and money by finding something in our columns, which he had sought for in vain elsewhere. It has often happened too, that many a man has found out to his sorrow that some invention which he had wished to patent had previously been described in our columns. He might have saved both time and money had he been a subscriber As a cheap paper of the kind we would inform our readers that there is nothing like it in the world, five and six dollars per annum is the price of all the monthly magazines devoted to Science or Art and here we present more matter in one year for two dollars than any Scientific perodical does for three times that sum. Those who wish to estimate the value of the Scientific American have but to look over their back numbers. In them they will find much with which they would not part with for ten times what they have paid.

American Steamers.

Experience is the best teacher in all things, and we are learning by experience to construct steamers for ocean navigation. Our first transatlantic steamer, the Washington, is inferior in point of speed. But she will pay for herself; Yankee energy will do this. The United States is a superior sailer to the Washington, and although a fine vessel, the Franklin will, we think, from the construction of her engines, surpass her and all others. Last week there was launched the Georgia at this port, for the New Orleans line, and from her dimensions, and the character of her engines, she will no doubt be a first class vessel, unsurpassed by any other whatever. She is of tremendous proportions, being 251 feet long, depth of hold 25 feet; having 49 feet beam, and about 2700 tons burden, 900 tons more than the America. The engines of the vessel are side lever marine, with cylinders 85 inches in diameter, and 8 feet stroke, having 2 engines and 4 boilers. The arrangement for the boilers is somewhat novel, two fore and two abaft the engines. The solidity of the timber and the strength of fastening, are greater than any vessel ever launched; the thickness through the bilge of the vessel is 32 inches. The floor timbers are 20 inches deep, placed closely together and bolted lengthwise. The outside planks are 6 inches thick, the inside ceiling of the vessel is 6 inches, and the clamp streaks 7 inches. The deck beams are 12 by 15, and 13 by 15 inches, all secured with knees resting on the water ways of the ship.

The engines, which are of the most substantial workmanship, work entirely under deck. We should have preferred to have seen the bore of the cylinders 96 inches in diameter, instead of 86. There appears to be no standard of proportion between the stroke and bore among engineers and yet it appears to us, that there must be a geometrical relationship. Observation might lead to the discovery of definite proportions. America is yet destined to have an excellent steam navy, and in our opinion it would be folly to build any more mere sailing ships or frigates of war. Steamships are the toast for active and effective service. It was the opinion of Sir Sydney Smith — not the essayist—but the great sailor and general, that the large ships of war in the British navy, would yet be transformed into coal luggers for the steamships.

Kyanized Ships.

A correspondent recently gave in your papaper some valuable facts in regard to a plank road in Tennessee. He said the sleepers were kyanized, and, besides being thereby rendered proof against moisture, were entirely preserved against worms and insects It occurred to me at once that if the timbers and planks of ships were kyanized, they would be rendered stronger, more durable and more economical. The great expence now incurred for repairs would be saved, the interior wood work would not become worm eaten, and copper sheathing would be unnecessary, since water would not affect the planking, neither would barnacles, sea worms and insects fasten more readily upon the uncovered bottom than they now do upon the sheathing, if as much, since the indurating liquid would be poisonous to them.

The suggestion may not be new though I have never seen it before. W. F. L.

There is a process patented in England by a chemist named Payne, which has been highly praised both as a wood preservative from decay, and from being destroyed by fire. The process, is to exhaust the air from the pores of the wood and introduce a liquid that will form an insoluable salt in the wood. For ordinary purposes, in the first instance, a solution of sulphate of iron, (copperas) and then one of muriate of lime are injected, these, by double decomposition, form sulphate of lime and muriate of iron. When the timber is required to be uninflammable, alum as well as iron, is injected. When timber is required to be proof against worms sulphuret of barytes and sulphate of iron, or of alumina, both or either of the latter, are used.

The wood to be saturated, is first placed into a cylinder resembling one of our high pressure boilers; from this the air is exhausted commonly, by introducing steam, and then effecting its condensation, when a vacuum is produced, or where steam cannot be conveniently applied, the same result can be obtained, but at a greater expense of labour, by means of the air pump. When the interstices of the wood are exhausted of the air which they contain, the solution of copperas is first introduced, and in order more effectually to penetrate the body of the wood, throughout, powerful pressure is applied by the agency of the force pump. Another vacuum is then obtained in the cylinder, when the second solution is forced into the timber in a similar manner, and the two combining, at once produce an insolve le substance, with which the pores of the wood is thoroughly charged throughout.

Many parts of vessels have been prepared with wood preservatives and the only portion of the Royal George and the piles of the old London Bridge, found to be sound, were those impregnated with oxide of iron and a calcareous matter imbibed from the sea water, whilst the remaining portions were either destroyed or rotted.

The utility of Payne's process has been fully tested. The British government has extensively adopted it, in the construction of the new Houses of Parliament and the British Museum.

Many of our vessels use salt as a preservative, running it between the planking through proper orifices. The fine packet ship Patrick Henry is treated with some bushels of it, at the end of every voyage.

Payne's process has been so highly extolled by some of our London exchanges, that we are forced to be prudent in our opinion of its merits and properties but consider it with moderate views as being very good.

Are you trying?

With our last issue we sent to every subscriber a prospetcus for our new volume, with the request that all would try to obtain a few additional names. We hope each one will endeavor to send us three subscribers, and thus receive the gift which we offered.

The Crank.

Perhaps there is no piece of mechanism, so famous in controversial story, as the crank, especially as it regards its qualities for converting reciprocating into circular motion. Eminent engineers have combatted from dawn till eve upon this point, then sheathed their swords for lack of argument. We have brought up the subject at this time just to indulge in the expression of a few ideas on the subject more of a practical than a theoretical nature.

Fig. 1.

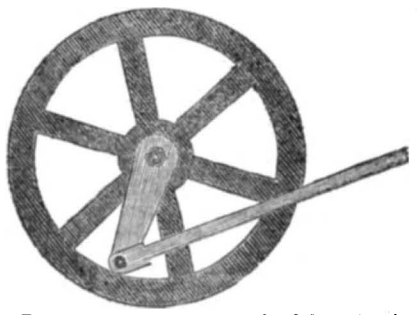
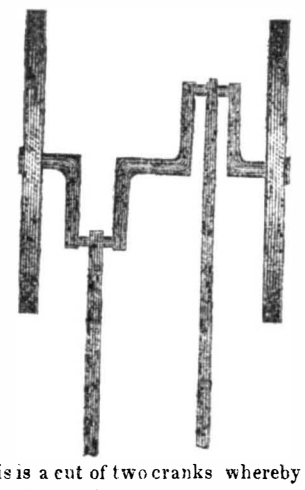


Fig 1 represents the crank driven by the reciprocating motion of the connecting rod which communicates a circular motion to the fly wheel, and some heroes have beheld one half of the power lost by the dead points, (a perpendicular line with the centre of gravity) All the controversies that we have read upon this mooted point, were wonderfully mystic in signification, and we have beheld with grief many a poor fellow get into a fog of his own calculations, out of which he could not march except backwards with his eyes shut.

Fig 2.



This is a cut of two cranks whereby a reciprocation motion may be communicated to work a pair of pumps by the circular motion of the shaft of a water wheel. We have seen a neat little engine (upright) dispense with the walking beam by having a broad wheel on each side of the crank, the piston being connected with the crank, the broad wheels fixed on the framing answered well for band wheels to communicate the power of the engine to other machinery by straps.

As it respects the true value of the crank, the question without going into any figures on the subject, just lies in this little point "what is the better plan?" Can any person, has any person been able to show a simpler and better plan as a substitut for the crank?—Not one There then is an end to the argument, and after all what loss is there but in the friction, and the motion of the crank is just as natural as any other motion, and as a piece of mechanism it has no superior in its own place. Men could not run any faster if they had legs made of wheels; and no greater tribute was ever paid to the beauty and utility of the crank combined with the steam engine, than that of James Watt when he laid down his sun and planet wheels, and adapted the simple crank.

The Mississippi Valley.

Upon the Mississippi river and the tributary streams are now about 500 steamboats, with capacity to carry, at one trip, near two hundred thousand tons. Assuming that these boats will make an average of thirty-six trips in the year, they would transport seven millions two hundred thousand tons! Vast as is now the trade upon these rivers, it is small to what it will be Of the land drained by this great river, not more than one-tenth of it is in cultivation. when the nine-tenths now not cultivated shall be brought into such cultivation as now exists on the other tenth, the demand for tonnage for its transit, compared with the present, will be as nine to one; so that five thousand steamboats will then be required upon the waters that now employ five hundred. It is also fair to presume that the constantly improving husbandry of the West will, at no distant period, double the production of lands, a large majority of which are under the most careless cultivation. In this latter case ten thousand steamboats would be required on the Mississippi river and its tributary streams.

Supposing that five thousand of these boats should run below the mouth of the Ohio and above New Orleans, and that each boat should pass a given point, say Natchez, once a week, 714 boats would pass that point each day, 30 boats each hour, or a single boat every two minutes; every four minutes one boat would ascend and the other would descend the river; so that a boat descending the river at the rate of ten miles to the hour, would meet thirty ascending boats: and one descending at the rate of twenty miles to the hour, would meet sixty ascending boats. Time, which has more than verified the prediction that the trip from Orleans to Lousiville would be made in ten days, will also more than realize these calculations. Calculations made upon the future powers and resources of this country have always been too small.

Aboriginal Industry.

By the census of Indian tribes, which is now in the process of being taken, says the Union, it is shown that the seven small bands of Ottowas about Michilimackinack, numbering about 700 souls, who rely wholly on agriculture for a subsistence, have raised during the last season 25,000 bushels of corn and 40,000 bushels of potatoes. They also made, the past spring 325,000 pounds, or over 147 tons, of maple sugar; which is worth at the Mackinaw market, seven cents per pound, making $52,750 on sugar alone. Corn is worth at the same place, 50 cents and potatoes 37 1-2 cents per bushel. This single example shows what the Indian tribes could do for themselves were they all to make a bold appeal to agriculture for a living, and abandon the chase.

Massachusetts Carpets.

There have been manufactured at the large carpet factories in Roxbury, belonging to Henry Pettes & Co, within the year commencing August 1, 1847, and ending August 1, 1848, upwards of two hundred and fifty thousand yards of carpeting.

This large quantity has all been sold at their warehouse in Boston.

They manufacture all descriptions of ingrain and three ply carpets, tapestry Brussels and velvet pile carpets and rugs

Unprecedented Demand for Old Papers.

At the commencement of the present volume of the Scientific American we had nearly one thousand complete setts of the preceding volume on hand. Since that time we have had 500 copies of those setts bound, and the balance have been ordered by mail and sent in sheets. We are now obliged to inform our patrons that we are unable any longer to furnish *complete* setts in sheets, and that we have but fifty more copies left, which are bound. The price of the remaining fifty copies which are left will be hereafter $3 per copy (neatly bound,) or we can furnish a few more copies in sheets, minus Nos. 1, 10, 16, 17 and 46, at $2 per sett. All the numbers of the third volume can be had yet, at the subscription price.

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