NEW YORK, AUGUST 5, 1848.

Bentham's Planing Machines.

After the process of sawing there is no process more laborious to workers in wood than that of planing, and accordingly attempts were made long ago to perform this mechanical operation by machinery. The first account that we have of machinery for this purpose was invented in England in 1791 by Gen. Bentham, but it was not attended with all the advantages he expected. It was only to exonerate the workman from the change of his tool and render any laborer capable of performing the operation—a great advantage, no doubt, in the planing art. Bentham's plane was made the full width of the board and on each side of it were fixed fillets which projected below the the face of the plane, just as much as it was intended to reduce the board in thickness, serving to guide the plane sideways and guage the thickness, because when the boards were reduced to this amount the fillets rested on the bench on which the board was placed The plane was kept down either by its own weight or by weight added to it, the latter being so continued as to shift their position during the time the plane was making its stroke—the pressure at first acting forwards and then on the hind part, to prevent the fore part dipping down when leaving the board. By another contrivance the plane was lifted up on its return, so as to clear the cutting edge of the wood. This was done by a piece of wood that acted as a handle to the plane and to which the power was applied. It was placed upon an axle extending across the width of the plane, and carrying on each a short lever provided with rollers at their extremities. The handle projected upwards from the plane, which being forced forward by it assumed an inclined position, as also did the the short levers, so that their rollers then rose above the cheeks of the plane and raised it off the bench, the plane being supported by them on its return. The bench of Bentham was peculiar. In cases where the boards were winding and irregular on the lower side so that they could not lie flat on the bench, it was provided with two cheeks which might be brought close to the edges of the board, so as to hold the latter steadily between them, the cheeks having two or more rows of teeth to hold the wood in its place. These cheeks were made so as to rise and fall with the bench to accomodate the whole to the different thicknesses of wood. If a very thin board had to be planed it was liable to spring up to the iron so as to be reduced after the plane came to rest with its cheeks upon the bench. To avoid this, the edges of the board were held by the sides of the bench above mentioned, but as it was liable to spring up in the middle, heavy rollers, or rollers loaded with weights, were fitted in apertures made in the plane as near as possible to the cutting edge which answered the purpose of keeping the plane close down to the bench. For planing pieces of greater thickness at one end than the other, the cheeks of the plane were supported on wooden rollers laid on the bench on each side of the wood, as much thicker at one end as the board at the other, therefore when the plane had reduced the wood the cheeks came to their bearing on these rollers and caused the plane to move not parallel with the bench, but inclined according to degree in which it was thicker at one end than the other.—In like manner, by using them of different thicknesses at the different sides, the boards were made feather edged. As all the adjustments were made and regulated by machinery, none of the skill of the worker was required.

The subject of Planing Machine Patents having created more heart burning litigation than any other patents, excepting for irregular turning, we have been frequently requested, both verbally and by letter, to publish some information in which confidence could be placed respecting those patents granted for planing machines previous to Muir's in England, and Woodworth's in the United States, as by fair inference, it may be said, that although these two are very similar, yet being invented at such a distance from each other, and at nearly the same time, the one would not in strict justice invalidate the other in regard to priority. Many will be pleased to read old Bentham's plan of planing, and next week we shall publish, if not the whole, at least part of Bramah's specification, the only patent of much importance granted previous to those of Woodworth's and Muir's.

Inventor of the Last Machine.

Mr. Thomas Masscross, of Hartford, Conn. has sent us a letter stating that there is an inventor in that place who claims to have invented the Last Machine some years before Mr. Blanchard and that he has proof of the same. He desires us to notice this fact, because he thinks "that among the many names of persons who have invented or improved Last Machines, the original inventor should receive some credit." He says that the invention was distinctly the turning of irregular forms by the working over the whole surface of the model to turn any given object. Mr. Mascross also informs us that the person he speaks of can be found at all times to prove the priority of his invention. The original inventor should be protected, and that this has not been done before, is something we cannot explain and wants clearing up.

Practical Value of Science.

Many ignorant despisers of systematic natural history reproach us on wasting our time on nomenclature or in watching and describing the metamorphos and general economy of insects: and contend that it is only from what they call "practical" men—that is to say, farmers, and gardeners—that effective means of destroying noxious species—one of the main objects of etymology, taken in its widest scope—can be looked for. Such objectors should be referred to a paper read by M. Guerin Meneville to the Royal Academy of Sciences at Paris in Jan., 1847, from which it appeared that while the cultivators of the olive oil in the south of France—who in two years out of three lost oil to the amount of 6,000,000 francs annually by the attacks on their olives of the grub of a little fly (DACUS OLEÆA)—were utterly unable with all their "practical" skill, to help themselves in any shape. M. Guerin Meneville though no cultivator, applying his antomological knowledge of the genius and species of the insect, and of its peculiar economy, to the case, advised that the olives should be gathered and crushed much earlier than usual, and before the grubs had had time to eat the greater part of the pulp of the fruit: and by their adoption of this simple plan, the proprietors of olives in the years they are attacked by the Dacus, can now obtain an increased annual produce of oil, equal in value to $120,000, which was formerly lost in consequence of their allowing the grubs to go on eating the olives till they are dropped from the tree.

Machinery for the City of Mexico.

A short time ago there was shipped from Mobile, from the foundry of Messrs. Gaty, McClare & Glasby, a machine for rolling sheet lead. This machine was built for a citizen of the city of Mexico. It is propelled by a steam engine, attached to the machine which is constructed so as to produce a reverse motion The lead in the pig is reduced by the rollers of the machine into sheets. It is then passed through rollers of exact surfaces, to any desired thickness and width. The moment the crushed sheet has passed through between the rollers, the motion is reversed by a sliding valve attatched to the engine, and the shee carried back. If it is desirable to reduce it still more, the guage of the rollers is changed, and it goes through again.

In the city of Mexico, the houses are in many instances covered with lead, and this machine has been built and will be used to supply this demand.

For the Scientific American

Cost of Manufacturing.

CLINTON, JONES COUNTY, GEORGIA, July 10, 1848

William Montgomery, Esq

DEAR SIR:—I read a communication of yours to the Scientific American, giving the cost of Cotton Machinery for a factory of 1000 spindles, necessary looms, &c. The community are under obligation to you for this information. But still, a new beginner is yet in the dark somewhat as to the profits of the business, unless he knows about the quantity and cost of the labor required to keep his spindles and looms in operation. Will you please do me the further favor by giving me this information, and much oblige,

Your obd't servant, A. GRISWOLD.

Messrs. Munn & Co.

GENTLEMEN:—Having received the above by mail, I beg to add the following to my article on the cost of a Cotton Mill

A "new beginner" must expect to remain in a state of partial darkness in regard to the practical operations and results of a cotton factory, even when furnished with correct statements of the cost of labor and material for manufacturing a *particular* style of cloth.

No general estimate can be given which will be of universal application, any more than a particular multiplier and divisor can be found for the solution of all arithmetical problems.

In the Craigville Mills under my charge, the goods manufactured are Print Cloths, 64 by 64 threads per inch. The number of hands in the whole establishment is equal to the number of looms; but in factories where coarse sheetings, or No. 8 to 16 yarns are made nearly two hands for each loom would be required to operate the mill.

From this it is evident that the style of goods intended to be made must in all cases be taken into consideration when estimating "the quantity of labor required to keep a certain number of spindles and looms in operation."

In order to answer more particularly such enquirers as Mr. Griswold, I will suppose a mill of 4000 spindles with looms for manufacturing the style of goods most appropriate to a Southern manufactory, (say No. 8 to 16 yarn,) and give the cost of machinery, &c. accordingly.

Dimensions of a factory to contain 4000 mule and throstle spindles with looms on No 8 to 15 yarn: Width of building 50 feet, length 132 feet (in the clear,) three stories high.

The usual cost of a brick factory of the dimensions above given, in the Northern States, is : : : : : $12,224

4000 spindles with looms on No. 8 to 16 yarn, : : : : 38,720

Water wheel to drive 4000 spindles, &c. 1,300

Steam engine to drive the same, : 6,000

This includes all expense of placing and starting the engine.

The cost of geering for the above machinery, which includes shafting, pullies, hangers, &c., is : : : : : : $2,000

Belting, : : : : : : 1,040

The usual number of horse power allowed to such a mill is sixty eight. The actual power consumed is 52 horse. The width of belt to transmit the power from engine or water wheel when the belt runs 1800 feet per minute, and the diameter of the smallest drum is 6 feet—should be 30 inches—which may be divided into belts of 15 inches or any convenient width.

Usual production of a factory of the above capacity, viz. 4000 spindles and 96 looms, is of goods per week, suppose the yarn to be 14's, : : : : : : 6,600 lbs.

Number of operatives, : : 132

Amount paid out per week, including all expense except cost of cotton, : : : : $640

Cost of yard wide goods, No. 14 yarn, 44 picks per inch filling and warp, is 5.95 cents when the cotton is worth 6 cents.

Cost for different kinds of cotton, as follows:

Cotton 6¼ cts —cost of goods per yard 6 20 cts.
do 7 do do do do 6 45 cts.
do 7½ do do do do 6 70 cts.
do 8 do do do do 6.95 cts.

From this it may be perceived that half a cent added to the price of cotton adds one quarter of a cent to the cost of the goods.

It may not be out of place to remark here, that the cotton used for making the above cloth may now be purchased at 5½ cents per lb This would reduce the cost to 5.70 cents per yard. Yet they only bring 5¾ and 6 cents in the market at present; hence many establishments are going behind, while the very best merely clear themselves. Unless cotton can be had for 3½ cents, this state of things cannot much longer continue. The future prospects for the cotton manufactures of this country look gloomy enough, and it becomes all interested in saving this branch of our national industry from destruction to bestir themselves in arresting the desolating policy of our legislative authorities, into whose hands fortune has placed the balance of power for a period, short indeed, yet long enough, like the storms of an hour, to sweep away the fruits of ages of industry.

WILLIAM MONTGOMERY.

Craigville, Orange Co., N. Y. July 22.

New Iron Manufactory.

On the 19th ult. the large iron establishment of Mr. William Bushnell went into operation on the bank of the Hudson River, at the old Union Landing, near Poughkeepsie. The Poughkeepsie Journal says the works are very extensive, put up in the most substantial manner, and are calulated to use ten thousand tons of iron ore in a year. The operations are aided by an engine of one hundred and twenty horse power. Authracite coal alone is used, and the same heat that melts the iron drives the engine. But large as the works now are, they are to be much extended as soon as possible by the construction of additional buildings to manufacture the iron into bars, &c. A large number of hands will be constantly employed, and such an establishment cannot fail to be of great and permanent benefit to the village.

Kyanizing.

We learn from the Kennebec Journal that this process of preparing timber to preserve it from decay is carried on to considerable extent in that quarter. A building 200 feet long has been erected for the purpose, where the timber is placed in enormous boilres, 50 feet long and 5 or 6 feet in diameter where steam is applied to it from another boiler, which is then condensed, thus producing a vacuum and opening the pores of the wood; after which a solution of coal tar is let into the boilers and a great force applied to it by means of a force pump, and after six or eight hours the timber is drawn out. Timber thus prepared is used for railroad sleepers, and it is said will withstand rot and the worms a long time.

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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