

Blanchard's Patent.
(Continued.)

The longitudinal motion of the carriages is caused by racks and pinions, and the similitude and proportionate variations, of the longitudinal motion between the cutting instrument and friction column are regulated by a graduating horizontal lever, both the same as exhibited in the iron machine of the respondent et. al. last in Court.

The peculiar novelty of the respondent's machine exhibited to the subscriber appeared to be in the formation, suspension and manner of propelling the cutting instrument, to shape the last from the rough block, without finishing.

The cutting instrument consists of a double edged curved knife of about the same curve or periphery as the friction column; it is bolted to a perpendicular iron bar about an inch square, which plays up and down between and through two iron straps fastened to the main transverse carriage. This cutting instrument receives its motion from a pitman attached to a crank put in very rapid revolution, and thereby with great velocity moves the cutting instrument in a straight perpendicular line up and down, which being sharp on both the upper and lower edges, in passing the rough material cuts it both in ascent and descent. Attached to the crank shaft were a fly wheel and a balance weight.

Having now described the elementary features of the parts, the operation of the machine may be spoken of.

A rough block was put in the machine and power applied, which owing to the peculiar motion of the cutter, its imperfect connection with the arrangements of the crank, pointed out to the respondent by the subscriber, and the unstable structure of the machine as it stood, caused not only the machine, but the building to tremble excessively. After some little interruptions occasioned thereby in starting, the operation became more steady and the last marked W. W. H. No. 1, hereunto submitted, was produced from the rough block at one cutting—it not having undergone any finishing process.

Another block already about half cut from the rough was now put in the machine, and the remainder underwent one cutting with the double edged perpendicular knife or cutter. This knife or cutter with the block was then removed, and in place of the aforesaid cutter, to the main transverse carriage was adjusted a rotating cutter, or rasper formed of twenty circular saws of about the same periphery as the friction column, for the purpose of dressing or finishing off the last. These saws were strung on a perpendicular shaft, standing at right angles with the mandrils, and having a balance wheel on it to steady the revolutions.

This rasper or cutter was adjusted to be driven by means of bands and pulleys applied for the purpose, and one of their shafts being too tight, further operation until Monday morning the 26th February at 10½ o'clock was suspended.

At the above appointed time the respondent having put the shaft in running order, begins to exhibit his machine in dressing off the last. Commencing to run the dresser or cutter at necessarily a very high speed, a little delay was occasioned by the breaking of a strap, it being repaired, the operation further proceeded when the strap again broke, was repaired and put in operation,—in a moment it again parted and repaired, and the last was run through one dressing. Being imperfect it was run through a second dressing, to near completion, when one of the sockets being simply wood, began to take fire from the friction of the journals, which was prevented by adding fresh oil and discontinuing the operation. The last being at this time finally produced from the second dressing, is marked W. W. H. No. 2, and submitted herewith. This revolving cutter or rasper cuts in the longitudinal direction of the block, not transversely.

From the above imperfect operation of the machine it will appear to the Court probably, as to the subscriber, that the machine in structure and effect is as yet entirely experimental.

The subscriber has read the affidavits of H. Mc Minn, John Howard and Robert W. Jones, submitted under the order of the Court, and though an inspection of the Last marked

“turned by J. B. Eldridge, Jan. 31st 1849,” and with the letters J. H. may have induced those persons to believe the entire statements of their affidavits to be true, from the appearance of the Last,—yet the subscriber having been able to obtain a still more extensive information in reference thereto, is disposed to believe that the said Last was first turned or cut from the rough block by a double edged perpendicular knife, and then dressed off by the revolving cutter or dresser consisting of a series of circular saw plates, both as herein before described by your subscriber.

Your subscriber has also read the affidavit of the respondent, submitted under the order, and in reference to the machine therein referred to, as having been in Court, known as No. 2, believes that the idea of the cutter approaching and receding in a straight line, did originate with the respondent from his inspection of the said machine, No. 2, though the present machine of the respondent differs from that machine very materially. In the recollection of the subscriber that machine No. 2, fed transversely in sections and by hand, also it fed longitudinally by hand, also it cut the block in only one way of the approach of the cutting edge, and in the recede of the cutting edge passed over the block without cutting it as it passed. In the respondent's machine as exhibited it continuously feeds transversely and by machinery also it feeds longitudinally by machinery (though in exhibiting it the respondent sometimes released the power and fed it by hand) also, in the respondent's machine, the cutting instrument cuts the block both ways as it passes over it. There is also another difference in the elementary operation of the respondent's machine.

In the machine in Court, No. 2, the friction point was continually changing its bearing on the model with the motion of the cutting edge, that is, the cutting motion was not independently of the friction bearing, hence a slow motion of the friction point on the model was not combined with a very high or even a higher state of velocity in the cutting instrument; while in the respondent's machine the cutting motion as stated, is entirely independent of the transverse motion or motion to give the inequalities of form, and consequently combines the slow tracing over the model with an independent and very rapid motion of the cutting instrument to cut the block into shape. Whether the respondent has made any new discoveries in these matters of elementary principle, the subscriber is not prepared to suggest to the mind of the Court, he not having the claimant's Patent before him, nor any evidence whatever submitted to him as to the style of the art previous to the granting thereof. He believes however that the respondent has exhibited much creditable skill, ingenuity, and enterprise in producing the machine exhibited to the subscriber under the order of the Court.

And your subscriber doth respectfully report, &c. WILLIAM W. HUBBELL,
February 27th, 1849.

(To be continued.)

Extract of Clover.

The Medical Journal states that the Shakers of Canterbury, N. H. prepare a delicate article, which is represented to possess very important properties, by boiling the blossoms of red clover (*Trifolium Prateence*) till an extract is obtained, of a certain consistency, recognized by them as being the medicinal point and which is particularly used as an external application in ulcerations. Those who have made themselves familiar with this comparatively new preparation, say that it acts like a charm in altering the condition of the most formidable class of ulcers. Such, in short, are the favorable representations from reliable sources, that hospital surgeons might find it advantageous to use it at once, especially as it is so mild and delicate that no disturbance in the system may be feared, however liberally the extract is applied.

Revenue of Canada.

The estimated Expenditures of Canada for the year 1849 is £565,403, of which 200,000 is for interest on the public debt. The estimated Revenue is £574,640, of which 450,000 is from Customs and 50,000 from public works.

Blow Pipe and Steam Blast.



It is well known that a mode for increasing the intense heat of smelting furnaces by steam was patented a few years ago in Europe. The plan is to inject a jet of steam into the furnace. The trials that were made with this plan produced a very intense heat but it had the drawback of soon injuring the grates, by absorption of the oxygen set free by the decomposition of the steam into the elementary gases.

The invention however is somewhat old, and published in a German work, in 1836. It is described in Ewbank's work page 397. This engraving represents the application of the Eolipile to the smelting of ores, in a portable furnace. In the application of water to fuel, every blacksmith and every naylor knows the virtue of wetting their coal and this principle was known to Pliny, who says that when charcoal is wetted it gives out more heat than when it is kept dry. This Eolipile is nothing more nor less than the blow pipe, so well known to our chemists and mineralogists, and it is believed that the ancients also on particular occasions used spirits and oil in the Eolipile for smelting, which shows that they were acquainted with all the arts of the blow pipe. The works of ancient artists in Jewellery are not surpassed by any at the present day and they must have had some excellent way of smelting the refractory metals. It is also said that the ancients were able to keep gold in a liquid state—on this point we have our doubts, though many writers lament this lost art, but an art not yet discovered in our opinion, except its combinations or solution with acids. Some valuable discoveries we believe will yet be made in the application of some new liquids to the blow pipe. The great changes produced by different chemical combinations such as Chloroform and Ether, afford grounds for the view we have stated, and as this is a subject to which we have directed attention, it may be as well to conclude by saying “a word to the wise is sufficient.”

The Sahara and its Tribes.

To form a correct conception of the Sahara we must rid our minds of all the loose and fantastic conceptions which have been attached from time immemorial to the interior of Northern Africa. Instead of a torrid region, where the boundless steppes of burning sand are abandoned to the roving horsemen of the desert, and to beasts of prey, and where the last vestiges of Moorish civilization expire, long before the traveller arrives at Negroland and the savage communities of the interior, the Sahara is now ascertained to consist of a vast archipelago of oases, each of them peopled by a tribe of the Moorish race, or its branches, more civilized, and more capable of receiving the lesson of civilization, than the houseless Arabs of the Tell (the mountainous tract lying between the Great Desert and the sea)—cultivating the date-tree with application and ingenuity, inhabiting walled towns, living under a regular government, for the most part of a popular origin, carrying to some perfection certain branches of native manufactures, and keeping up an extensive system of commercial intercourse with the northern and central parts of the African continent, and from Mogador to Mecca, by the enterprise and activity of their caravans. Each of the oases of the Sahara, which are divided from one other by sandy tracts, bearing shrubs and plants fit only for the nourishment of cattle, presents an animated group of towns and villages. Every village is surrounded by a profusion of fruit bear-

ing trees. The Palm is the monarch of their orchards, as much as by the grace of its form as by the worth of its productions; and the pomegranate, the fig tree, and the apricot, cluster around its lofty stem. The lion and other beasts of prey, with which poetry has peopled the African wilds, are to be met with only in the mountains of the Tell—never in the plains of the Sahara. The robber tribes of the Tuarichs frequent the Southern frontier of the Sahara, and the vast tracts of habitable land which intervene between the oases and the real desert; but in the Sahara itself, communications, carried on after the fashion of the country are regular and secure. War is indeed of frequent occurrence between the neighboring tribes, either for disputed territories, or for the revenge of supposed injuries; but all that is yet known of these singular communities shows them to be living in a completely constituted state of civil society eminently adapted to the peculiar part of the globe which they inhabit, governed by the strong traditions of a primitive people, and fulfilling with energy and intelligence the strange vocation of their life.

Chloroform Applied to the Skin.

Some cases have recently occurred in which fatal consequences were attributed to the inhalation of chloroform; surgeons have been turning their attention of late to the employment of this powerful sedative locally, in order to deprive of sensation parts intended to be operated upon. A very interesting experiment of this kind was made at the royal Cornwall Infirmary England, as related by the Cornwall Royal Gazette, by Mr. Spry, on a young man from the parish of Beage, who had been suffering for seven years from a very painful tumor in the sole of his left foot.—The pain had been gradually increasing with the size of the swelling since December last, so that he could not make a single step without greatly aggravating his sufferings. Folded lint, saturated with chloroform, was applied to the tumor, over which a piece of oiled silk was placed, to prevent its too rapid evaporation, and a few turns of a roller were made around the foot to retain the lint in contact with the skin.

After a quarter of an hour had elapsed, more chloroform was added to the lint, but the quantity used was rather less than two teaspoonfuls; and in about half an hour from its first application, it was found that the skin which would not before bear the slightest touch without pain, might now be compressed with impunity. The operation was now proceeded with, the patient betraying no sign of suffering, either by the retraction of the foot, or by the expression of the countenance; and he afterwards assured the gentlemen present, that the only part of the process at which he felt any pain, was in the deepest part of the incision, but that it was so little as not to be worth talking about. Every one is aware of the peculiar sensitiveness of the skin of the sole, and therefore this case was selected as a fair test of the chloroform efficacy when applied externally. The result was highly satisfactory, and the poor man looked on with the greatest composure, not moving a limb while the diseased part was being removed, although he had been taught to expect, before coming to the infirmary, that the operation would occasion great pain, and perhaps even a lock-jaw.

A Fortunate Discovery.

The Abeille, of Yvetot, France, states that a poor shepherd in that neighborhood, the father of a numerous family, which he maintains with difficulty, purchased a second hand Bible last summer, to occupy his evenings.—On turning over the leaves one Sunday, he found two of them pasted together, which he carefully separated, when to his amazement he discovered a 500 franc note, (£30,) and upon the margin of one of the leaves was written—“I collected this sum with much trouble, but having no natural heirs who want it I make you my legatee, you who shall read this Bible.” The poor shepherd now considers himself more happy than a king.

They are taking measures in Boston to introduce the Cochituate water into East Boston, laying the pipes across Charles and Mystic Rivers. The estimated expense is about \$223,000.