Planing Machines.

URI EMMON'S PATENT

This is a specification of a patent granted to Uri Emmons in 1829.

The Schedule referred to in these Letters Patent, and making part of the same, containing a description in the words of the said Uri Emmons himself, of his improvement in the mode of planing floor plank, and grooving and tonguing and straightening the edges of the same, planing boards, straightening and planing square timber, &c., by machinery, at one operation, called the Cylindrical Planing Machine.

The machinery for this improvement consists, first, of a frame of wood or metal;—second, of the gear and fixtures, combined and connected together for the above named operation, the principle of which consists in running the plank, boards or timber, over, under, or at the sides of the cylinder of wood or metal, on which knives are placed, straight or spiral, with their edges exactly corresponding with each other, having from two to twelve knives or edges; also, burrs or saws similar to those used for cutting teeth in brass wheels, to groove and tongue the edges of the boards or plank as they pass through between rollers, or on a carriage, by the surface of the cylinder. The shape, form and construction of the above principle may be varied in shape and position, dimensions, &c., still the same in substance, the same principle producing the same effect. I have, by experimental operation, found that the following mode or formis the best:

1st. A frame composed of two pieces of timber, from 12 to 18 feet long, about 6 by 10 inches broad, placed about 15 inches apart, framed together with four girths, one at each end, and at equal distances from the centre, and flush with the under side; this frame is supported by posts of a proper length, framed into the under side of the above pieces of timber, and braced so as to be of sufficient strength to maintain the operative parts. There is placed a roller in the centre, of metal or hard wood, across the frame, the surface of the roller being even with the surface of the frame; directly above, and parallel with this roller, is hung the cylinder, made with two or four spiral edges or knives, 6 to 10 inches in diameter, and hung on a cast steel arbor, resting in moveable boxes attached to the sides of the frame, so as to set the cylinder up and down from the roller, to give the thickness of the timber to be planed. On each side of the cylinder is placed a pair of feeding rollers, of hard wood or metal, the under one of each pair being level with the centre one; the upper onesare hung in boxes, which are pressed down with springs or weight so that when the timber comes between them, they will hug and carry it through. These rollersare connected, and turned by wheels, at a velocity of about12 feet surface of the roller per minute; the cylinder with two edges to make about 2,500 revolutions per minute, cutting 5000 strokes every 12 feet; this can be varied according to the number of edges, power and velocity of the different parts. The power is attached to the cylinder, by a belt running on a pulley on the outward end of the cylinder shaft; each way from the feeding rollers, is placed rollers about two feet apart for the timber to rest on while running through. On one side of the frame is fastened a straight edge, to serve as a guide, lined with metal; on the other side, rollers are placed in a piece of timber, which is pressed up to the plank or board, to keep it close to the guides or straight edge by a spring. The grooving and tonguing is done by burrs or circular cutters, similar to a saw; these burrs are hung on perpendicular spindles, the arbors of which rest in boxes attached to the inward side of the frame; a burr on one side to cut the groove, and on the other is placed two burrs, just as far apart as the thickness of the above one for cutting the groove. At or near one end of the frame, is hung a shaft with a drum or rollers, from which belts pass into pullies on each spindle of the burrs or circular cutters, which must have about the same velocity of the cylinder; these burrs are placed on one side of the cylinder opposite to each other, so as to cut the tongue to match the groove; on the other side of the cylinder is an arbor, parallel with the cylinder, on which is placed circular cutters for planing the edges of the boards or plank as they pass through; the cutter on the side, next to the guide, is stationary on the arbor, but fastened with a screw, to set it for different widths; a belt runs from a pulley on the end of the arbor outside the frame, to the said drum, as also the same from the cylinder, each having about the same motion. The feeding rollers are put in motion by a belt from a slow part of the driving power I have also put in operation, a carriage for feeding, but rollers save the time of running the carriage back.

Now what I, the said Uri Emmons, consider and claim as my improvement, and for which I solicit a Patent, is as follows, viz:

1st. The principle of planing boards and plank with a rotary motion, with knives or edges on a cylinder, placed upon the same straight or spiral, as before described, which I put in operation at Syracuse, in the County of Onondaga, in the state of New York, in the early part of the year 1824.

2d. The burrs for grooving and tonguing, in contradistinction from the mode used by William Woodworth, he using duck-bill cutters.

3d. The feeding, by running the timber through in a carriage, or between feeding rollers guided by a straight edge as before described; also the circular cutters for straightening the edges before described.

In testimony that the foregoing is a true specification of my said improvement afore described, I have hereunto set my hand and seal, the eighth day of April, in the year of our Lord one thousand eight hundred and twenty-nine. URI EMMONS.

Witnesses—Thomas Thomas, Silas Hathway.

Lighting of Factories.

Various materials have been used for the manufacture of illuminating gas as a substitute for coal; but without success when brought into competition with coal, as it is evident would be the case, when it is considered that the material from which coal gas is made really costs nothing; the coke or residum from the coal being worth as much, or more, for many uses, than the coal previous to its being carbonized. The cost of the gas to the manufacturer being for labor, fuel, &c. with the interest or the cost of works.

The process of converting coal into coke, by the abstraction of the bituminous portion is carried on extensively; the bituminous, or that portion which in coal gas works is converted into illuminating, gas being wasted.

Why then, it may be asked, have other materials been used? In the early stage of coal gas manufacture, before the art of purifying was understood, the offensive odor produced by sulphhydrate of ammonia resulting from foreign substances, always contained in a greater or less degree in coal, prevented its use in dwellings. Oil was therefore substituted, to a small extent for coal for generating gas: but its high cost, together with practical difficulties not seen at first, and which became more and more serious as the business advanced caused such works to be abandoned, and the undertakings proved ruinous to those engaged in them. The following remarks on this subject are from the Encyclopedia Britannica:—

"Oil being decomposed at a loss of nearly fifty per cent the conversion of it into gas, after a protracted but ineffectual competition with coal, has been gradually abandoned on the large scale, even in those places where from the interest of the whale fisheries, there were the strongest inducements to foster the unfounded prejudices which prevailed for some time against the use of coal gas. The exaggerated advantages which it was pretended would be derived from compressing oil gas, and thus rendering it portable, served to prolong the gross delusion on the subject. Nor were these delusions fully removed, until a demonstration was given of the failure of the scheme, in the decay of costly edifices and expensive apparatus, which, in defiance of all sober calculations, had been constructed for carrying it into effect."

"The capital expended upon oil gas establishments is actually applied to reduce to the extent of thirty per cent the intrinsic value of the raw material, which it was pretended to improve in an equal degree; add to this the loss of gas in the main pipes, which is found to be fully twenty per cent., and it follows that the light from oil gas is obtained at twice the expense at which it may be procured immediately from the oil itself."

Rosin, a much less costly material, was made a substitute for oil in the manufacture of gas and such work, though attended with a degree of success have yielded gradually to coal gas works, and we believe that all the gas works in this city will soon use nothing else but coal.

An error formerly very prevalent, and which led to the use of rosin as a substitute for coal in the manufacture of gas was, that the amount of light afforded by illuminating gas, was in direct proportion with its specific gravity.—This law was deduced by the aid of the photometer, or by observing the depth of shadows cast by flames, from gasses of different specific gravities, within short distances. It is wholly inapplicable however, when applied to general illuminations.

For example: a camphine (spirits of turpentine,) or solar lamp, in the middle of an apartment 16 or 18 feet square, will not afford throughout the apartment half the light that an argand burner consuming 4½ feet of gas per hour, in a like situation, would afford, yet if we test the two flames by the ordinary method before referred to, our conclusions would be in favor of the camphine or solar lamp.

From a series of careful experiments, made with coal gas of sp. gr. 0,450 and rosin gas of sp. gr. 0,800 it was deduced that the light giving value of the latter, compared with the former, was as 88 37-100ths to 100.

The illuminating power of coal gas varies very considerably in different establishments as it is dependant upon the quality of the coal used and the care taken in its manufacture. 100 cubic feet of gas made from the best coal requires for its combustion 170 cubic feet of oxygen. 100 cubic feet of gas from sperm oil requires 190 feet of oxygen. Assuming, with Dr. Henry, that the illuminating power is in proportion to the oxygen required, then their relative value would be as 170 to 190.

The value of rosin gas would be by this mode of comparing something less than that from oil.

If, however, we take into consideration the less offensive odor arising from coal gas and the greater whiteness of the flame, it would be perhaps not unfair to ascribe an equal value to the same quantity from whichever material produced whether coal or rosin.

In North Carolina gas made from rosin would certainly be the cheapest, but in Pennsylvania and other States where there is bituminous coal—why not use coal for the illumination of every city and village. We may perhaps live to see the time when houses in cities will be heated as they are now illuminated, and this might well be done in connection with gas companies.

The Tomb of the Prophet Jonah.

The Nebbi Yunns (so called on account of the tomb of the Prophet Jonah, which is supposed to be within this village,) in Persia, is built on an ancient artificial mount belonging to the ruins of the far-famed Assyrian capital. The tomb of the Prophet Jonah is in a mosque of considerable size; the room where the tomb is is richly furnished with carpets and ornamented with large and beautiful Arabic inscriptions from the Koran. There are also the names of the four Khalifas (or Califs) written in the large Arabic character. There was formely a Christian monastery where the supposed tomb of Jonah now stands. The Christian tradition (of course we mean only the Christians of Mosul) is, that Jonah preached in that place, but they deny his having been buried there; they believe that when he accomplished his mission, he returned to his native country.

Curious Swearing.

In law suits between Russians and Ostyaks, it is still the custom at Beresov, to bring into court a head of a bear, and this animal which is supposed to be omniscient is there appealed to as a witness by the Ostyaks. In swearing they make the gesture of eating and call upon the bear to devour them in like manner if they do not tell the truth.

Peruvian Bark.

A modern traveller, alluding to the mode in which the Peruvain bark is gathered, says that in the month of May, the Indians assemble and repair to the extensive cinchona woods. One of the party climbs a high tree to obtain if possible, an uninterrupted view of the forest, and to spy out the manchas, or spots where there are groups of Peruvian bark trees.

The men who spy out the trees, are called cateadores, or searchers. It requires great experience to single out of the dark leaf-covered expanse, the cinchona groups merely by the peculiar tint of the foliage, which often differs very little from that of the surrounding trees. As soon as the cateadore has marked out and correctly fixed upon the mancha, he descends to his companions, and leads them with wonderful precision through the almost impenetrable forest to the group. A hut is immediately built which serves as a resting place during the night and is also used for drying and preserving the bark. The tree is felled as near the root as possible, divided into pieces each from three to four feet long, and with a short curved knife, a longitudinal incision is made in the bark.

After a few days, if the pieces are found to be getting dry, the bark, already incised, is stripped of in long strips, which are placed in the hut, or in hot weather, before it, to dry. In many parts, particularly in the central and southern districts of Peru, where the moisture is very great, the bark is dried in the forest, and the strips are packed in large bundles. In other districts on the contrary, the bark is rolled up green, and sent to the neighboring villages, where it is dried. Towards the end of September the cascarilieros (bark-gatherers) return to their homes.

Typographical Blunders.

They have some funny 'errata' in the country papers, now and then—but nothing to equal the original one, which runs thus:

"ERRATA.—In our last week's paper for 'Bumbleton's Storm-destroying Porringers,' read Hamilton's Worm-destroying Lozenges."