



## LIST OF PATENTS.

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending August 28, 1849.

To Edwin B. White, Nashua, N. H., for improvements in Rotary Spike Machines. Patented August 28, 1849.

To Reid R. Throckmorton, of Brooklyn, N. Y., for improvement in Planing Machines. Patented August 28, 1849.

To Joseph Garside and Henry J. Betjemann, of Harrison, Ohio, for improvement in machinery for Cutting Screws in Bedsteads. Patented August 28, 1849.

To Jesse Fitzgerald, of New York, N. Y., for improvement in machinery for Dressing Treenails. Patented August 28, 1849.

To Alfred Stillman, of New York, N. Y., for improvement in Sugar Pans. Patented August 28, 1849.

To David O. Macomber, of New York, N. Y., for improvement in Fountain Pens. Patented August 28, 1849.

To R. F. Loper, of Philadelphia, Pa., for method of working the Air Pump and using a condensing as a non-condensing engine. Patented August 28, 1849.

To Simeon Hovey, of Painesville, Ohio, for improvement in Bedstead Fastenings. Patented August 28, 1849.

To G. N. of Millerstown, Pa., for combined construction and operation of the Drill in Rock-Drilling Machines. Patented August 28, 1849.

To Michael English, of Lagro, Ind., for Gold Washer. Patented August 28, 1849.

To John W. Thurman, of Buchanan, Va., for improvement in Hill-side Plows. Patented August 28, 1849.

To Lewis Tupper, of Auburn, N. Y., for improvement in Straw Cutter. Patented August 28, 1849.

To Abram Bloom, of Newville, Pa., for improvement in Threshing Machines. Patented August 28, 1849.

To Henry G. Davis, of Millbury, Mass., for improvement in Spinal Supporters. Patented August 28, 1849.

To J. W. Martin & E. Perry, of North Liberties, Pa., for improvement in Chucks. Patented August 28, 1849.

To Robert Smith of Leesburg, Pa., for improvement in Spring-seat Saddles. Patented August 28, 1849.

To Matthias P. Sawyer & John W. Hall, of Boston, Mass., (Assignees of Samuel A. Cox, of Malden, Mass.) for machines for Bending the Lips of Wrought-iron Railway Chairs. Patented August 28, 1849.

To D. J. George & N. Millington, of South Shaftsbury, Vt., for improvement in Graduating Carpenters' Squares. Patented August 28, 1849.

To Samuel Jones, of Moundville, Va., for improvement in machinery for Jointing Staves. Patented August 28, 1849.

## Planing Machines.

JUDGE KANE'S OPINIONS ON PATENTS.

There is no profession which requires more sound sense, sagacity and knowledge than that of law. Our superior courts should embody the wisdom and erudition of the law. We are happy to believe that this is the case; yet, peradventure, all our judges are not perfect men, or there would be no revision of their opinions, whereas we know that such things as revisions do not unfrequently happen. In the month of March last Mr. D. Barnum, of this city, received a patent for improvements on the Bramah Disc Planing Machine, a description of which will be found in No. 18, this volume (4) Sci. Am. After receiving his patent he set up his machine in Philadelphia, when Mr. J. Wilson applied for an interlocutory injunction, to restrain him from using it, as being an infringement of his rights, he being owner of the Woodworth Patent, in that District. Judge Kane granted the injunction in the month of May last, and we

hereby give some extracts from his opinions expressed on that occasion

"The grant of a patent to the defendant can have no other effect on the present discussion than as it indicates the opinion which highly respectable and skilful officers have formed on an *ex parte* examination of the case."

No great compliment, we think, to the officers of the Patent Office, and one that does not please us. The Judge then goes on to explain the difference between the Woodworth's Machine and Gays and McGregor's, and also those of Bentham, Bramah and Muir. Relating to Woodworth as differing from them, he says:—"He affixed his cutters to the periphery of a revolving cylinder, and advanced the plank towards them, under strong pressure, in a plane tangential to their motion; thus making the cutters describe a curve upwards, from the finished through the rough surface of the plank, and preventing the plank from vibrating sensibly during the operation. The plank moving firmly along the tangent plane of the rotating cylinder, beyond the reach of the cutters, and was disengaged from the action of the machine at the moment the work was perfected."

"The machine of the defendant, Barnum has the Bramah disc, with its two sets of rough and finishing cutters; but the plank is made by a very ingenious contrivance to advance along a metallic guide, either in a straight or slightly curved line, till it comes beneath the axis of the disc, when by a turn in the guide it is bent outward over a small roller, and thence passes from the machine in a line similar to that by which it approached it. The finishing cutters begin to act upon the plank in a line very nearly parallel to its surface, and complete their work as the plank turns over the roller.

We have thus a machine that cuts in a right plane upon a curved surface; the revolving disc, at the moment of finishing the work, forming a tangent plane to the curve of the advancing plank. We have too, a roller, over which the plank is forcibly bent, and which by its resisting pressure to the elasticity of the plank holds it steady under the action of the cutters. That is to say, we have a machine, just the converse, as well as the equivalent, of that invented by Woodworth. One general expression may include them both: A planing machine, in which the cutters and the material move against each other in a curve, and in its tangent plane respectively; the material being kept from vibrating by roller pressure. It is true, that in one machine, it is the cutter which follows the curved path, while the material moves along the plane, and that in the other the cutter moves in a plane, and the material is acted on in the curve—but there is no other difference.

My only embarrassment in arriving at this conclusion has been owing to the fact, that of the highly educated mechanics whose affidavits have been taken in the cause, the greater number have expressed a different opinion."

At the time the judge granted the injunction it was urged by the defendant to send the case to a jury trial. This the judge refused to do, but since that, before Judge Grier, a trial of Jury was ordered for the 5th of next October. It is our desire, sincere and honest, to see justice done to all. We therefore set this matter before our readers for their information, in order that they might obtain as much legal patent knowledge as possible. The question was an infringement, and the operation of the two machines is here set forth in Judge Kane's own language. We request attention to the words in Italics.

As for ourselves, we can see no similarity in the inventions, and we think that the respected judge has given a wrong construction to the roller in the defendant's machine. It is not a pressure roller, it does not keep the board from springing up to the cutters, (the essence of Woodworth's claim) for it is under the board, acting a totally different part from a pressure roller—it is a mere friction roller, surely the judge did not calmly turn this point over in his mind. The idea of construing the board into the cylinder, we had thought would never be advanced by any scientific man, for it is simply impossible, and we venture to say that whoever constructs a planing machine with a series of revolving cutters on

disc, cone, or cylinder and feeds in his board as a cylinder, will assuredly present a different invention from either Bentham's Bramah's Woodworth's or Barnum's. Talking about geometrical lines in some inventions, is like a revival of the old hobby of the schoolmen's disputes, "whether or not, two spirits could occupy the same space at the same instant of time." If light from an opposite view can be thrown on this subject we are willing to receive it.

## Hemp.

Mr. James Anderson, in a letter to the Louisville Journal gives, some valuable information relating to the rotting of hemp. He says, it has been, and still is, the practice of hemp-growers to allow their hemp (after spreading in the fall of the year) to remain exposed to the action of the atmosphere until a decomposition of the fibre has progressed so far as to enable them to brake it with facility on the hand-brake; the quality is thereby rendered unequal, the original strength much impaired, its texture destroyed, and its weight much reduced. In consequence of the undue exposure of this article to the blighting influences of the atmosphere, a decomposition of the fibre has commenced, and its destruction is accordingly hastened, whenever exposed to ordinary heat and moisture; hence its want of durability, in comparison with water-rotted hemp.

This defect can be obviated. Let the hemp remain in the swarth, on the field where it grew and was cut; a few rains will suffice to cure it for the brake; or after sufficient exposure to the sun, it may be stacked for all spreading; when, after a few rains or when half rotted, it may be shocked, preparatory to breaking. Either of these processes would be at present objected to by the practical farmer in consequence, as he would say, of the impossibility of breaking and cleaning it. But by the aid of a Milling Machine, half rotted hemp can be broken with great rapidity; it does not impair the quality or strength of the fibre, but has a tendency to loosen the wood, by a milling process; when the wood is so severed, it is an easy matter for one hand to clean 500 to 600 pounds per day, on the hand-brake, or by scutching, or by whipping and shaking. The quality of the article so produced is bright, soft, and lustrous.

The method employed by farmers in water-rotting hemp, is to let it remain immersed in water until the glutinous matter is completely dissolved; the consequence is a perfect impairment of the strength of the fibre; for a complete solution of the gummy matter could not take place without fermentation, and fermentation is the beginning of decay. To produce an article of hemp suited to the consumption of the Navy Department, it is only necessary to immerse the hemp for a period of twenty-four hours, then withdraw the water, and let the hemp remain in bulk until the generation of natural heat takes place; that will be observed in the course of ten to twenty hours, after a thorough impregnation by the heat; then inundate a second time, and let it remain until you are prepared for its convenient removal. It may, after the process of heating, remain in the water for months without any disposition toward fermentation; and surely, if it does not ferment in water, there is no danger of its doing so in cordage.

With the aid of the Improved Milling Machine, I am sure, that a good hand could clean 500 pounds per day on the hand-brake, or hemp prepared as above. Hemp so prepared is remarkable for its weight and oily appearance, and just the article that would make the superintendent of the United States rope-walk exclaim, "America can beat the world."

## The Manufacture of Pot and Pearl Ash

The processes of manufacturing the pot and pearl-ashes in the United States and in the Canadas, is very simple, but by no means so economical as they might be. In general, the clearing the land of wood, is the primary, and the manufacture of these articles only a secondary, object. The wood is usually cut into lengths of eight or nine feet and thrown into piles of one, two, or more cords, and, when partly seasoned, set on fire. The woods which are cut in summer are said to be the

most productive in alkali. The ashes resulting from the combustion are, when cold, gathered up and put into large tubs, the bottoms of which are covered to the depth of 6 or 8 inches with brushwood, and over that with a layer of three or four inches of straw. Water is then poured upon the top, and suffered to filter through till all the soluble matter of the ashes is extracted. The ley runs off through an aperture near the bottom of the tub designed for that purpose. It is then boiled in large cast iron kettles till the water is all evaporated, and the matters, which were held in solution, obtained in a solid form: this product is familiarly known to the workmen by the term of brown salts, or salts, simply; it is of a very dark,—almost black color, and a very strong alkaline and acid taste, and consists of a very large proportion of potash, mixed with more or less carbonaceous matters, vegetable salts of potash, and small portions of siliceous and other earths. To convert these brown salts into potash they are again thrown into a cast iron kettle of considerable thickness, fused and subjected for an hour or two to a full red heat after the mass is perfectly liquid. By this means the carbonaceous matters are for the most part decomposed and burned out. The remaining product is, when cold, broken up and packed in tight casks, and constitutes the American potash of commerce. It contains from five to twenty per cent. of pure potash, combined or mixed with variable proportions of carbonic acid, and compound carbonaceous matters, siliceous and other earths, the proportions and quantities of the latter depending very much upon the care which may have been used in collecting the wood ashes after the combustion. The potash of commerce is usually divided into four sorts, according to the degrees of purity of each.

If the salts obtained by the evaporation of the ley in the first instance are re-dissolved in a small quantity of water, there will be a considerable deposit of less soluble earthy substances, and the clear liquor, when evaporated, will afford a much purer product than that obtained in the common way, and the potash resulting from it will be proportionally purer. This plan is indeed adopted by many potash makers. Unskilful manufacturers of potash are sometimes much troubled with the presence of nitrate of potash in melting down the brown salts; this difficulty is remedied by mixing with the brown salts, previous to melting, a small quantity of powdered charcoal. It is probable that nitric acid, (and, of consequence, nitrate of potash,) is always a product of the combustion of wood in the open air; but the quantity varies with the circumstances of the combustion, and in ordinary cases, the carbonaceous matter in the brown salts are sufficient to decompose it without the addition of charcoal.

In the manufacture of pearl ash the process is the same up to the production of the brown salts. They are then thrown into a reverberatory, and calcined till the whiteness of the product indicates the entire dissipation of all carbonaceous and volatile matters. The salts are, of course, stirred or raked frequently, during this process, which is called pearling. The product is the pearl ash of commerce, a sub-carbonate of potash, uncontaminated by vegetable matter, but containing more or less of earthy impurities, derived principally from the bed upon which the wood was burned. Particular care is taken that the temperature do not rise so high in the pearling as to cause the salt to melt, as upon this circumstance the superior purity of the pearl-ash in regard to carbonaceous substances, depends.

The immense supplies of pot and pearl-ashes for the arts and for exportation, are in this country, derived exclusively from the combustion of forest timber. Owing to the great abundance of wood no attempt has been yet made on an extensive scale to procure them from the smaller tribes of the vegetable kingdom.

Two-shilling pieces, called florins, are now coined at the English mint. A proclamation has been issued by the Queen, declaring them legal tender.

Men of thought and men of action, are not often men of great tongue. The most profound thinkers, have been indifferent speakers.