

MECHANICAL INVENTIONS.

Mr. Martin A. Bidwell, of Sacramento, Ky., has patented an improvement in that class of shingle machines in which the shingles are split or rived from blocks or bolts and afterward smoothed and tapered, and has for its object to furnish machines so constructed that the shingles will be rived, smoothed, and tapered by a continuous operation.

An improved hand power attachment for sewing machines has been patented by Mr. Charles T. Christmas, of Riverton, Miss. The object of this invention is to furnish an attachment adapted for connection to the treadle of a sewing machine, whereby the machine may be driven by hand alone, or the attachment used to assist the operation of the machine by foot; and the invention consists in a certain novel combination of devices adapted for connection to the machine.

Mr. Frederic W. Link, of Belmont, O., has patented an improved valveless engine that when in operation shall move continuously in one direction, and shall transmit its motion by means of elliptic cog wheels.

Engineers' Club.

At a recent meeting of the Engineers' Club of Philadelphia, Mr. Arthur Sheaffer read a paper on the Olean, Bradford and Warren and the Kendall and Eldred railroads, in the oil regions of McKean county, Pa. The O. B. & W. R. R. is 23 miles in length, from Bradford, Pa., to Olean, N. Y., reaching a height of 960 feet above Olean, or 2,398 feet above tide. Gauge, 3 feet; rails, 35 to 40 lb. per yard; maximum grade, 185 feet per mile, two miles being at a grade of 180 feet per mile; maximum curve, 30°, 350 feet in length on trestle 25 feet high. The road was commenced in November, 1877, and in sixty days trains were running between the termini.

The K. & E. R. R. is 18¾ miles long, from Bradford to Eldred, McKean county. Gauge, weight of rails, and maximum curves, same as O. B. & W.; maximum grade, 136 feet per mile; summit, 656 feet above Eldred, or 2,099 feet above tide. Crosses the Alleghany river on Howe truss bridge of two 90 foot spans. Its total cost, including equipment, was \$150,000. In August, 1878, or ninety days after running preliminary lines, trains were running from Bradford to Eldred.

Mr. Neilson gave some notes on the Chicago and Tomah Railroad (narrow gauge), on which 20 lb. rails were used, even on 25° curves, and trains of seven cars, each of 13 gross tons weight, were run.

Mr. A. R. Roberts announced a recent trial run on the Bound Brook Railroad, by the single driver engine, of 89½ miles, in 97 minutes, with four cars, and returning in 96 minutes with five cars. One run of 27 miles was made in 26¾ minutes. No heating of the machinery was observed.

Mr. J. J. DeKinder illustrated the French method of submarine diving, which is a great improvement on the old method, with heavy helmets, etc. The apparatus is composed of a horizontal cylinder, surmounted by another cylinder at right angles to it, with a rubber cap. The lower cylinder is connected with the air pump by a tube, and the upper by another tube with the diver's mouth. A spring clamp is worn on the nose, the tube held in the mouth, and the apparatus worn on the back like a knapsack. By the action of valves, the air is circulated as the diver breathes, and he is encumbered with no other apparatus. His loaded shoes do not interfere with ease of motion, and he can rise at will. As little diving is done in winter, the temperature of the water is not an objection to its general use.

The Desert of Sahara.

A correspondent of the Chicago Times, writing from the oasis of Tafilet, in the Sahara, April 7, says that so far from being a desolate plain of moving sand, as popularly believed, the Sahara is a cultivated country, fruitful as the Garden of Eden. Like our "great American desert," it has been greatly belied. El Sahr, as the Arabs pronounce it, is indeed a vast archipelago of oases, offering an animated group of towns and villages. A large belt of fruit trees surrounds each of these villages, and the palm, the fig, the date, apricots, pomegranates, and vines abound in the utmost profusion. Ascending the Atlas Mountains by a gradual slope to the region of high table-lands, we come to the land of the Mozabites, or Ben Mozab, and then comes a gradual descent for three hundred miles to the vast stretch of treeless country known as the great desert.

The rivers have an inclination of about one foot in four hundred. Many of the streams are dry, except after rains, when they deluge the country. Gun-shots are fired as soon as the torrents appear; all objects are removed, and soon, with a terrible noise, the flood rolls on. The Saharian city stands as if by magic on the banks of the waters which rise to the tufts of the palm trees; but a few days only elapse ere all disappears, leaving the district rich and fruitful. The inhabitants are not a migratory people, and, unlike the tent-dwellers of the northern slope, live in substantial houses with thatched roofs and ceilings of cane laid upon joists of alve wood. These houses generally consist of but one room, and have no furniture except mats on the floor and upon the walls for three or four feet high. Beds are sometimes found, but no one thinks of sleeping on them. The walls are white-washed and inscribed with verses from the Koran. The inhabitants are made up of genuine Arabs and Berbers, or Kabyles, as the French call them. Jews are found in every oasis, and all very prosperous and influential, doing much of the trading and making up of the great caravans.

The Decay of Woodwork Out of Doors.

How to prevent the decay of woodwork exposed in open air to the changes of the weather, to alternations of wet and dry, heat and cold, is a problem that has taxed the ingenuity of man everywhere, and particularly in new countries, where wood is the only material available, or at least the only one easily employed in the erection of buildings. Most timbers, worms and insect enemies apart, will last a long time, if kept constantly dry or constantly wet in an equable atmosphere; but they will not long resist the effects of constant alternations from dry to wet and from wet to dry. More especially is this the case where the wood is placed in the ground, as in the case of the main sills of wooden houses, of post for railings, etc. Charring, painting, or tarring the surface of the wood is often adopted; but these remedies, even if always applicable, do not always produce successful results. They need to be continually renewed, and they certainly do not preserve the wood from the disease known as dry-rot.

The decay of wood embedded in the earth is also difficult to guard against; but, according to the *Farmer's Gazette* (Dublin), a simple precaution, costing neither money nor labor, will increase the durability of posts put in the ground by fifty per cent. This is simply by taking care that the wood is inverted—i. e., placed in the opposite direction to that in which it grew. Experiments have proved that oak posts put in the ground in the same position as that in which they grew, top upwards, were rotten in twelve years, while their neighbors, cut from the same tree, and placed top downwards in the soil, showed no signs of decay for several years afterwards. The theory is that the capillary tubes in the tree are so adjusted as to oppose the rising of moisture when the wood is inverted.

Enjoined from Using his Own Name.

At St. Louis, recently, Judge Boyle rendered a decision in the case of Skinner vs. Oakes. It was a suit to restrain the defendant from using his own name in his own business. It seems that Oakes and Probasco were partners in the manufacture of an article of taffy called "Oakes' Candies," which became so popular that children cried for it and would have no other. The candy store was sold out to Skinner, with the right to make the taffy, and Oakes afterward opened a new shop, and manufactured Oakes' candies, the same as before. Skinner applied to the court to enjoin Oakes from calling his candies by that name, and also from using his own name in his business. Judge Boyle, after hearing the evidence, granted the injunction, and delivered a lengthy written opinion. After showing that the label put on his candy by Oakes is an infringement of the trade mark of Skinner, the judge goes further and says:

"I am also of the opinion that this restriction is not confined simply to the use of the words 'Oakes' candies,' as forming a single name, but to the use of the word Oakes at all in connection with the manufacture or sale of candies in this city. For to place this name in a position that it may be read at the same time or place that candies are displayed, is to impress upon the mind Oakes candies just as clearly and unmistakably as if the words 'Oakes' and 'candies' were printed or painted upon a sign as forming but one name. If one in search for what is known as Oakes' candies finds a store containing candies and upon its sign the name of Oakes, he would be simply an idiot not to connect the one with the other and believe he had found the object of his search."

Under this decision Oakes will be obliged either to change his name or quit the candy business. Like Esau, he sold his birthright for a mess of taffy, and must put somebody else's name on his packages. As the children cannot be made to believe that that which they call Oakes' candy by any other name will taste as sweet, the only thing left for Oakes is to shut up shop, or get himself newly baptized. His occupation, like Othello's, is gone, so far as his good name is concerned. If he should start a pickle factory and put his name on the jars of gherkins, the children would believe the cucumbers to be Oakes' candy colored green, and buy them as real taffy. Mr. Oscar Gray, the defendant's attorney, talks of filing a motion asking the judge to amend the decree by changing Oakes' name to Acorn, so that he can continue in the candy business without being considered a counterfeit of himself.

A New Street Sweeper.

A new street sweeping machine, devised by Mr. F. W. Schroder, of this city, promises to greatly reduce the cost of keeping streets clean. The dirt is swept by revolving brushes upon a traveling canvas, on which it is carried to a chute leading to a dump cart, into which it is discharged. When the cart is full the chute is raised by a lever, which also detaches the cart. The brushes make 240 revolutions a minute, and the canvas travels between 30 and 40 miles an hour. Two men are required for the machine, the driver and the man to attend to the chute. It is claimed that each machine will clean over a mile of street in an hour. The largest machines are 19 feet long, 6 feet wide, and 7 feet high; they weigh 5,400 pounds, and cost \$650.

THE Assistant Treasurer of the United States in New York has notified Secretary Sherman that unless the silver dollars stop pouring into the vault from the Mint, that receptacle will soon overflow, and he will really be in distress to know what to do with them. He has over five hundred tons on hand just now, and nothing will persuade anybody to accept them in payment of dues when they can avoid it.

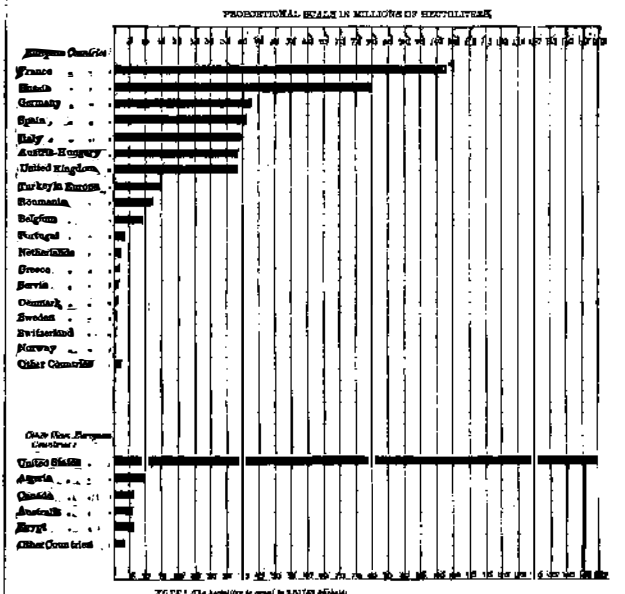
Persistent Life of Girdled Trees.

Usually a girdled tree soon dies; but it would appear from the following statements of Mr. W. H. Ragan, of Clayton, Ind., that such is not always the case:

"Hon. F. Beeler, General Superintendent of the Indiana State Board of Agriculture, living four miles southwest of Indianapolis, has a Scotch pine tree from which the bark has been removed for a space of almost a foot, when about three inches in diameter. At this point the wood is as dry and lifeless as a table leg, but above, the top is healthy, making regular and thrifty annual growths, bearing and perfecting seed, and to all visible appearance as healthy as though nothing unusual was the matter with the tree. This condition has existed for years, and the growth above the girdled point has increased to more than three times the size of the tree below. This tree was girdled by the sapsuckers. The other is a tree of the same variety on the farm of Allen Miles, two miles east of Belleville, in Hendricks County, Indiana, which was completely strangled by an iron ring, two and a half inches in diameter, being dropped over it some years ago. Below the ring for several inches the wood is dead and dry as though it had been in a dry kiln for years; above it is greatly enlarged, perhaps quadrupled in size, and still alive, though declining."

WHEAT PRODUCTION OF THE WORLD.

The Bureau of Statistics of the United States Treasury Department publishes the following diagram as showing the proportionate annual average production of wheat in the several wheat producing countries of the world. It is copied



from a semi-official French source, but with the explanation that the product of France for 1879 was 25 per cent below the annual average, that of Russia 10 per cent below, and that of the United Kingdom, or Great Britain, 50 per cent below, while the actual production of the United States was slightly above what is given as an average.

Extensive Filtering.

The Holyoke (Mass.) correspondent of the *Paper Trade Journal* says that a filtering experiment on a large scale is about to be tried by a company in that city, to obtain pure water for washing purposes in the manufacture of paper. Quite near the mills is a piece of land lying lower than the canal, and this the company proposes to fill with water to the extent of about three acres. Pipes will conduct the water from the canal bank into a bed of gravel some eight feet in thickness, through which it will pass, and it is expected that the filtering and the subsequent standing of the water in the reservoir will purify it sufficiently. The water will be about ten feet deep on an average, and will be pumped from a point about midway between the surface and the bottom. The experiment is a new one, and will be watched with interest.

Venor's Prophecies.

Mr. Henry G. Venor comes forward again with his direful prophecies of storms, heat, cold, etc. His letter is dated at Montreal, May 18, and in it he says: "I believe that June will be an intensely hot month, on the whole, but the end of the present month, and probably 'the first of June,' will be fall-like with frosts again. July will be a terrible month for storms, with terms of intense heat, but another fall like relapse, with frosts, will in all likelihood occur a few days before the 20th. I fear the storms of thunder and hail will be of unusual severity during July. I must claim the verification of my prediction relative to 'a cold wave with frosts, over a large portion of the United States between the 10th and 15th of May.' The relapse toward the close of the present month will be more severe than that just past."

It is well known that butter, cream, milk, and flour are peculiarly liable to absorb effluvia, and should, therefore, never be kept in mouldy rooms, or placed where there are sour liquids, aromatic vegetables, such as onions, cabbage, and turnips, or smoked fish or bacon, or indeed any kind of food or thing of strong odor, lest they lose their flavor. But alas, add the *Sanitarian*, how much more essential is it that the utmost care be used in the prohibition of bedside food and drink in the nursery and the sick room, a practice fraught with constant danger to the sick, and of spreading disease to the well.