

Pyrometers.

In our issue of August 5th, we referred to the instruments for indicating high temperatures, made by Wedgewood and Daniel. There are however others of American and English make, in extensive use, depending in their construction, on the difference of expansion of various metals under heat, which answer well for lower temperatures, and are less expensive. Mr. Gauntlett has long supplied the Blast Furnaces in England, with an instrument having a brass stem about four feet long inclosing a steel rod; this gives good satisfaction in biscuit manufacturing, oil refining, wire annealing, and similar operations, where the temperature is under 800 degrees. Above this figure and especially if continued for a length of time in a red heat, the brass tube is liable to be injured. To indicate the increased temperature now used in blast furnaces, Mr. Gauntlett has introduced an instrument the stem of which is composed of tubes of refractory clay, enclosed in an iron stem about three feet long, this is more durable in a temperature of 1,000 or 1,200 degrees, and is highly spoken of. The Agent for them is Edward Brown, 311 Walnut St., Philadelphia.

Effect of the Galvanic Current upon the Tenacity of Wire.

Mr. James Wyde has made public the results of some experiments which are of great importance to telegraphic science. He says that he found, some years since, that when intense currents were passed through the best copper wire, in only one direction, its tenacity was gradually destroyed, so that it could finally be crushed to pieces by the fingers. This loss of tenacity occurred first and in a greater degree at the negative pole. An examination with a microscope revealed at the broken surface a complete molecular change, a crystalline structure having taken the place of the fibrous. He states that, having entered upon some extended experiments in connection with submarine explosions by means of the voltaic current, he was frequently annoyed by the breaking of one of the wires, and in all cases found the structure at the broken part crystalline. From these facts he infers that intense currents passed through submarine cables must eventually deteriorate them, and counsels their avoidance. The frequent reversal of the current, in regard to direction, lessens or entirely prevents the molecular change in the wire.

Neutralization of Magnetic Influences.

M. Arson has sent to the French Academy of Sciences a second paper on his system of neutralizing magnetic influences on board iron ships, and recommended experiments to be made on the iron advice-boats now constructing in the French harbors. As these boats are being built by sections, nothing would be easier than to introduce plates of copper between them, and to use brass rivets, whereby the magnetic forces, neutralizing each other, would cease to exercise any action on the needle. M. Treves wrote to say that he had communicated to the Minister of Marine a new plan for the construction of the mariner's compass. The binnacle is to be of thick copper, and under each rose a thick horizontal plate of the same metal is to be placed, M. Treves having ascertained that copper exercises an influence on the needle by deadening its oscillations.

The Case of Dawson vs. the Bricklayers' Union.

While we greatly regret the unsettled state of the differences that unfortunately exist between the trades unions, and those who believe these organizations either unnecessary, or injurious to the interests of all parties concerned, we trust that the legal controversies that have grown out of them will result in a definite understanding of the exact legal status of these combinations.

The case of Henry B. Dawson, against the Bricklayers' Union in Westchester Co., the initiatory proceedings of which were noticed on page 3 of the current volume of the SCIENTIFIC AMERICAN, has finally resulted in a verdict adverse to the defendants. The complaint charged a conspiracy against the defendants, in that they prevented the son of the plaintiff from obtaining employment. We understand that an appeal from the verdict rendered will be made, and it yet remains to be seen what will ultimately come of it. The case is an important one, and its progress will be watched with interest by employers and employes throughout the entire country. Meanwhile it will not be surprising if the success so far gained by the plaintiff in this case should encourage further litigation, but as the case can not be said to have terminated, it would be wiser, we think, to await its final result.

"THE SCIENTIFIC AMERICAN.—This journal is certainly one of great value. We have read it with interest for twenty years, and it is among the first papers inquired for by our children when the time for its weekly visit arrives. It is full of important suggestions and scientific facts; and we think it has done more to elevate and stimulate thought among the laboring classes, than any other journal published in this country or Europe. Many years ago we received a suggestion from its pages, which was worth to us pecuniarily several thousand dollars. It is probable others can make a similar statement. We are led to make these observations in justice to an excellent journal."

We extract the above notice from the *Boston Journal of Chemistry*, one of our most valuable exchanges, edited by Dr. James R. Nichols.

It is stated that the Conecuh and Pensacola rivers are literally jammed for a distance of 200 miles with saw logs belonging to the Pensacola Lumber Co. They are destined to be sawed at Molino.

Editorial Summary.

A NEW ENGLAND paper speaks of a flourishing establishment at Middletown, Conn., engaged in the manufacture of silver plated ware, calling special attention to the fact that the business was begun four years ago in a small room, and with one machine, while seventy-five men are now required to produce the goods which the market demands. The success of this concern, and its quick growth into a large business is not a rare event. Beekman street, in this city, is the home of hardware dealers, for example; and many of the most extensive and attractive stores devoted to the sale of hardware sundries on the street, are the metropolitan sales-rooms of gigantic manufacturing concerns that commenced like this one quoted by the New England paper, "in a small room, with one machine." The history of some of the heaviest hardware manufacturers of New Britain, Middletown, Bridgeport, Waterbury, and Norwalk, Conn., would be an exceedingly interesting and attractive one.

ONE of the most industrious streams in the country, is the Quinebaug, which starts for the Atlantic from Massachusetts, via Norwich, Conn. Before it is fairly on its way, it is pressed into service at Southbridge and obliged to turn the wheels of at least a dozen factories, most of them cotton, and extensive. After that it hurries southerly through eastern Connecticut, turning a wheel at almost every furlong of the way, and setting in motion hundreds of thousands of spindles. At Norwich it is obliged to take on its back a dozen propellers, and some of the most magnificent steamers that run to New York, and carry them to the Sound; and there, setting them afloat on the sea, it indulges in the rest and quietude which its eventful career has fully earned.

CINCINNATI has heretofore insisted on making a break in the railroads centering at that city in order that travelers through might be levied upon by the hackmen and hotels. The result has been disastrous to the interests of the city, and the papers are urging an improvement in this respect, and an endeavor is made, also, to procure a direct line to the south, by bridging the Ohio from Cincinnati across to Newport. The navigational interests of that section oppose the bridge, as it is feared that it will injure the navigation of a river which is at present none too reliable in the matter of floating facilities.

AMERICAN ART has suffered a serious loss in the death of Charles Loring Elliot, of Albany, the most eminent portrait painter which this country has ever produced. He began life as a clerk in a country store, but his innate love for art conquered his business faculties, and he soon applied himself to portrait painting, and achieved a deserved fame. His first sitters in this city were Mr. and Mrs. Cornelius Vanderbilt, for whose portraits he received fifty dollars each. His last ten pictures brought him seven hundred and fifty dollars each. We are glad to learn that he leaves his family well provided for.

A CURIOUS case of spontaneous combustion took place recently at Gaines, Michigan. Some cotton saturated in linseed oil that had been used as a dressing for a burn, was removed and thrown aside, when in a few hours it commenced burning spontaneously. Cotton or woolen covered with oil which oxydizes rapidly when distributed thinly over a great extent of surface has often been the source of disastrous conflagrations.

CAPTAIN STEVENS ROGERS who is said to have taken the first steamship over the Atlantic that ever crossed it, died recently at his residence at New London. Among his personal effects is a magnificent gold snuff box presented to him by the Emperor of Russia in honor of his success in the first experiment in transatlantic steam navigation.

THE propeller *Congress*, of Detroit, after fully testing the invention, has adopted and just commenced running with petroleum for fuel. The cost is half the cost of wood; while the oil to do the work of forty cords of wood can be carried in the space of four cords, leaving the space occupied by thirty-six cords for freight.

THE ties of the Chicago & Quincy railroad are all kyanized by immersion, for thirty hours, in carbolic acid, at 245°. They are, when so prepared, as black as charcoal, and believed to be practically indestructible.

THE number of threshing machines in the country is about 225,000, and they save five per cent more of the grain than the flail. There is a total to the credit of the machines of about 10,000,000 bushels annually.

FORGE VILLAGE, Mass., makes 1600 pounds of horse shoe nails daily, and the factory gains a profit of 1600 a month, which is at once returned to the works by increasing their capacity to the demands of their rapidly growing business.

ALLEGHENY, Pa., has a flowing salt well on one of its streets and though much of the water runs to waste, the owners make one hundred barrels of salt daily. They intend, soon, to work up the whole of the product of the well.

DETROIT is using a new invention for keeping the water in the boilers of steam fire engines in such condition that steam can be generated and the engine working in two minutes. The fuel used is coke, and the expense seven cents a day.

PITTSBURG is examining, with much satisfaction, a machine for undermining coal. The local papers say that it works easily, cheaply, steadily, saves coal, does not strike, and can go by steam, horse, or man power.

MANUFACTURING, MINING, AND RAILROAD ITEMS.

The Mayo lode (Colorado), west of the Coin lode, is at present yielding silver ore that assays \$365 to the ton.

The shaft on the celebrated Cornet lode is now sixty-five feet in depth, carrying three feet of pay ore.

The bar mining below Idaho has been seriously interfered with by the high water which is now subsiding.

The owners of the Equator lode, Colorado, have commenced shipping ore to Newark, N. J., for reduction on account of the limited facilities for shipment to Cheyenne.

The shaft in the Awanda lode, Leavenworth Mountain, is now fourteen feet deep. The veins are four feet wide carrying a very fine gangue thoroughly interspersed with mineral.

RAILROAD BRIDGE BURNED.—The Chicago and Northwestern railroad bridge at Sterling, Ill., 300 feet in length, was burned on 21st Aug. It will shortly be replaced.

PROSPERITY OF OUR RAILROADS.—The gross earnings of the principal railroads of the country for July of this year, exceed those of the same month of 1867 by about nine per cent.

SILVER IN THE ARTS.—It is estimated that one hundred thousand ounces of silver is daily consumed throughout the world, in the manufacture of silverware, watches, jewelry, photographs, and in the other manufactures and arts.

PERSEVERENCE AND INDUSTRY OF AMERICAN WORKMEN.—Several mill operators at Lewiston, Maine, are building houses in their spare hours. Working in the mills nearly twelve hours per day they manage to secure a little time before the bell rings and after they come out at night, which they devote to building operations. A short time ago one of these persevering men was seen shuffling after eleven o'clock at night, and the next morning was at work almost before light.

Recent American and Foreign Patents.

GRAIN SCREEN.—J. H. H. Wiseheart, Shawneetown, Ill.—The object of this invention is to furnish a cheap and simple apparatus whereby grain may be thoroughly cleaned and separated from dirt, sticks, chaff, dwarfed kernels, etc., in an expeditious and convenient manner.

COMPOSITION FOR GRINDING MARBLE.—J. C. McAfee, West Alexander, Pa.—The manner of applying the sheet or plates of my improved composition to planes or polishing tools is represented by a longitudinal vertical section of such plane or tool, having a detachable shoe or sole formed of the composition.

STEAM GOVERNOR.—Thomas Alsop, Elkhart, Ill.—The object of this invention is to construct a steam governor, with its parts so arranged and operating, that if the belt slips, or an accident happens to the machinery, the governor will cut off the steam and stop the engine, in addition to properly performing its functions as a steam regulator at other times.

WARMING ATTACHMENT FOR STOVES.—John Fabney, Boonsborough, Md.—This invention consists of an attachable and detachable horizontal iron rim which is to be used in connection with upright cylindrical stoves, for the purpose of supporting dishes, etc., around the stove, to be warmed by the heat radiated from its body.

LOW-WATER INDICATOR.—T. G. Elswald and James Barbour, Providence, R. I.—The object of this invention is, so to construct a low-water indicator that the fusible plug, when melted, shall not be blown into the whistle, but shall be forced in another direction, so as to prevent the possibility of its obstructing or interfering with the operation of the alarm apparatus.

MILKING STOOL.—Otis Earl, Hermon, N. Y.—This invention consists in a clamping device, arranged to be closed and maintained in a closed condition, by the weight of the milker, in a sitting position on the stool, whereby the long hairs of the tail, being placed between the clamping jaws by the milker, before sitting down, will be clamped and held until he rises, when the jaws will separate and release the tail.

LET-OFF MOTION FOR LOOMS.—Benj. F. Carter, Manville, R. I.—This invention relates to improvements in let-off mechanism for looms, designed to provide means whereby the warp yarns shall be held rigidly against the action of the lay, while beating up, as is found to be highly necessary in weaving heavy goods, and, at the same time, permit the tension of the yarn to effect the delivery of the same after the lay has beaten up the web.

PLANE.—George Buckel, Detroit, Mich.—The object of this invention is to provide a plane so arranged that the thickness of the cut may be regulated, either in a positive manner, or by the pressure of the hand, and that the bit may be raised out of contact with the board being operated on when it is being moved back.

MACHINE FOR FORMING RAISED PANELS.—F. D. Green, Williamsport, Pa.—This invention has for its object to furnish an improved machine for forming raised panels, so as to raise and finish a panel at one operation.

TRACE FASTENING.—Thaddeus Peck, Stratford, Conn.—This invention has for its object to furnish an improved device for securing traces to whiffletrees which shall be simple in construction, allowing the traces to be easily and quickly attached and detached, and holding them securely in place.

CHURN.—C. N. White, Batesville, Miss.—This invention has for its object to furnish an improved churn, simple in construction, easily operated, in which waste in churning and the ingress of dust, or other impurities, are effectually guarded against, and which will bring the butter in a very short time.

SAWING MACHINE.—Peter S. Beldler, South Easton, Pa.—This invention consists of an arrangement of means for feeding an adjustable circular carriage. Also, an arrangement of means for automatically stopping the feed when the cuts have been sawed through. Also, an arrangement of means for automatically varying the feed.

PLATFORM SPRINGS FOR VEHICLES.—Chas. D. Sutton, Tarrytown, N. Y.—This invention has for its object to furnish improved platform springs for vehicles, which shall be stronger, more durable, no heavier, and no more expensive than the ordinary platform springs, and which will allow the draft to be attached lower down than it can be with the ordinary springs.

OPERATING BELT SAWS.—George Thompson, Nashua, N. H.—The object of this invention is to provide a means of operating belt saws, whereby the curve of the saw at the point of its operation on the wood may be varied to cut staves, lagging (so called), and other work of a curved character for which it may be applicable. It consists of a belt saw steadiy by a number of adjustable small pulleys and running on a main pulley, which is driven by a driving belt which is so arranged upon several other pulleys as to hug the main driving pulley for half of its circumference, and by its friction against the same transmit motion to it.

WAGON BRAKE.—F. D. Ladenberger, Glenbenlah, Wis.—The object of this invention is to provide an effective wagon brake, which is operated in a simple and convenient manner.

AUTOMATIC FLY BRUSH.—B. F. Day, East Freedom, Pa.—This invention is a machine for actuating pendent brushes with a horizontal reciprocating motion, the motive power being furnished by a spring and train of wheel work. It is designed to be placed upon a table during meals, or at the side of a sick bed, to produce a gentle current of air and drive away flies, mosquitoes, and other annoying insects in the air.

AUTOMATIC LIQUID METER.—Charles H. Riggs, Warwick, N. Y.—This invention consists of a combination of floats and siphons arranged within a chamber to operate automatically in moving the registering mechanism as the water passes through the meter.

COUPLING FOR VEHICLES.—Chas. W. Greter, Three Rivers, Mich.—The object of this invention is to accomplish the abrupt or sharp turning of the front wheels of vehicles without jointing the coupling or reach pole of the same.