

PATENT OFFICE DECISIONS.

Improvement in Stove Pipe Elbows.

LEGGETT, Commissioner: The applicant seeks a patent on his device as a new article of manufacture. He takes a stove pipe elbow, after it has been finished, and dips it into a vat of molten solder.

Perforated Sheet Metal Pipe.

LEGGETT, Commissioner: Applicants claim "a perforated sheet metal pipe, constructed substantially as and for the purpose described." This pipe is to be used, in connection with manufacturing establishments, for the purpose of extinguishing fires.

Improvements in Rolling Mills.

LEGGETT, Commissioner: The object of applicant's invention is to convey a pile from the bed of a heating furnace to the rolls of a rolling mill. He accomplishes it by means of power-driven hauling mechanism, which withdraws the heated pile from the furnace and deposits it on a platform of a crane that swings it round and delivers it to the rolls.

DECISIONS OF THE COURTS.

United States Circuit Court, District of New Jersey.

WELLS vs. GILL et al. SAME vs. YATES et al. Wells' Patent for Manufacturing Hat Bodies. This was a motion for a provisional injunction in a suit in equity brought by Eliza Wells, administratrix of the estate of Henry A. Wells, deceased, against John Gill and George H. Gill, for an alleged infringement of letters patent for a machine for making hat bodies.

Supreme Court of the United States. THE GORHAM MANUFACTURING COMPANY, appellant, vs. GEORGE C. WHITE. Design Patents. Appeal from the Circuit Court of the United States for the Southern District of New York.

COMMUNICATIONS RECEIVED.

The Editor of the SCIENTIFIC AMERICAN acknowledges with much pleasure, the receipt of original papers and contributions upon the following subjects:

- On an Improved Conservatory. By F. W. P.
On Instinctive Marriage. By W. T. R.
On the Darwinian Theory. By M. R.
On the Wheel Question. By J. A. B., and by J. B. J.
On A Means of Saving Life in Case of Disasters at Sea. By F. H.
On a Geometrical Problem. By O. W. G.; also by M. F., and by G. B. L.
On Self Propelling Fire Engines. By F. G. W.
On the Injury of Trees by Lightning. By F. S. R.
On a Recent Boiler Explosion in Ohio. By J. A. W.
On a New Method of Feeding Canals. By B.
On Human Antiquity. By D. K.
On Insensibility. By E. H. R.
On Perpetual Motion. By I.
On the August Meteoric Display. By J. B.
On the Separation of Ramie. By M.
On Terrestrial Heat. By W. L. W.

To Investors.—We are selling at par and interest, and recommend to careful investors, the First Mortgage Seven Thirty Gold Bonds of the Northern Pacific Railroad Co. The special attention of investors is called to the ample land security on which these bonds rest, in addition to the usual guaranty of a first mortgage on the road, its equipments and earnings.

Facts for the Ladies.—Mrs. G. A. Blanchard, Raymondville, N. Y., has used her Wheeler & Wilson Lock-Stitch Machine in tailoring since 1865, and it is as good as new; has done the sewing for a family of seven persons, attended to her household duties, and earned \$200 a year; says that any one owning a Wheeler & Wilson Lock-Stitch Machine can earn a respectable living.

Business and Personal.

The Charge for Insertion under this head is One Dollar a Line. If the Notice exceed Four Lines, One Dollar and a Half per Line will be charged.

Capitalists, a rare chance! A valuable new Patent, useful in every household, easily manufactured, for sale. Only Capitalists who mean business need address J. L. Field, North East cor. 17th and Market Street, Philadelphia, Pa.

Wanted—A new or second hand steam or tilt hammer, adapted for welding or forming scrap and puddled iron balls or blooms. Tilt hammer must be operated by belt easily and economically. Address W., Box 1971, P. O., New York.

Painters and grainers now do their best graining quickly with perforated Metallic Graining Tools. Address J. J. Callow, Cleveland, Ohio.

Machine Shop Wanted—To hire or purchase near New York City. Address "B," Box 377, New York P. O.

Wanted—Second Hand Engine, about 16x20, and 3 Tubular Boilers, 12 ft. by 3 1/2 or 4 ft. Address East Saginaw, Mich., Drawer 138.

Wanted—An energetic, competent man as foreman in Handle Factory. Wolverine, Niles, Mich.

For Sale—One Iron Planer with tools and attachments, used only three months; Planer 8 ft. long, 3 ft. sq. J. R. Abbe, Manchester, N. H.

American Boiler Powder, for certainty, safety, and cheapness, "The Standard anti-Incrustant." Address Am. B. P. Co., P. O. Box 797, Pittsburgh, Pa.

For Circular of Surface Planers and Patent Mitre Dovetailing Machines, send to A. Davis, Lowell, Mass.

Langdon Adjustable Mitre Box, with 18, 20, 22 or 24 inch Back Saw. Address D. C. Rogers, Treasurer, Northampton, Mass.

Scale in Boilers. I will Remove and prevent Scale in any Steam Boiler, or make no charge. Send for circular. Geo. W. Lord, Philadelphia, Pa.

Magic Lantern Slides at 50 cents! Choice American, Foreign and Miscellaneous Views. Send for catalogue. Wm. R. Brooks, Phelps, N. Y.

Flour Barrel Machinery Wanted—The best Crozier and Chamfering Machine—A Machine to Shave flat hoops—A Labor-saving Truss Machine—The most practical form to set barrels up, that does not require skilled labor. Address P. O. Box 2533, Buffalo, N. Y.

A Valuable Patent for Sale or worked on royalty, is perfect and simple in its construction—will give entire satisfaction on first sight. Address J. M., Leggett's Hotel, 48 Chatham Street, New York City.

Sewing Machine Needle Machinery, Groovers, Reducers, Wire Cutters, &c. &c. Hendey Bro's, Wolcottville, Conn.

Patent Steel Measuring Tapes, manufactured by W. H. Paine Greenpoint, N. Y. Send for Circular.

Gauges, for Locomotives, Steam, Vacuum, Air, and Testing purposes—Time and Automatic Recording Gauges—Engine Counters, Rate Gauges, and Test Pumps. All kinds fine brass work done by The Recording Steam Gauge Company, 91 Liberty Street, New York.

Steam Engines, Boilers and Pumps, Locomotives and Cars—New and Second Hand. Dulles & Co., 424 Walnut St., Philadelphia, Pa.

Ross Bro's Paint and Grain Mills, Williamsburgh, N. Y.

For Sale, two Patents. Address H. S. Ball, Spartanburg, S. C.

Dobson's Patent Scroll Saws make 1100 strokes per minute. Satisfaction guaranteed. John B. Schenck's Sons, 118 Liberty St., N. Y.

Agricultural Implements and Machines for Fall and Winter use. R. H. Allen & Co., 139 & 191 Water Street, New York.

The Berryman Manuf. Co. make a specialty of the economy and safety in working Steam Boilers. I. B. Davis & Co., Hartford, Conn.

First Class Steam and Vacuum Gauges, Engine Registers, Davis' Recording Gauges. New York Steam Gauge Co., 46 Cortlandt St., N. Y.

Kahnweiler's Cotton Seed Huller, \$175. Is warranted perfect in its operation. Send stamp for circular to R. H. Allen & Co., New York, manufacturers and dealers in Agricultural Machinery of every kind.

Steam Boiler and Pipe Covering—Economy, Safety, and Durability. Saves from ten to twenty per cent. Chalmers Spence Company, foot East 9th Street, New York—1232 N. 2d Street, St. Louis.

Peck's Patent Drop Press. Milo Peck & Co., New Haven, Ct.

For 2, 4, 6 & 8 H.P. Engines, address Twiss Bro., New Haven, Ct.

Diamond Carbon, of all sizes and shapes, furnished for drilling rock, sawing stone, and turning emery wheels or other hard substances, also Glazier's Diamonds, by John Dickinson, 64 Nassau St., New York.

Four Brick Machines, Combined with Steam Power (Winn's patent), makes 40 M. per day, for sale at a bargain. Address the manufacturers, John Cooper and Co., Mount Vernon, Ohio.

Absolutely the best protection against Fire—Babcock Extinguisher. F. W. Farwell, Secretary, 407 Broadway, New York.

Hydraulic Jacks and Presses—Second Hand Plug Tobacco Machinery. Address E. Lyon, 470 Grand St., New York.

Steel Castings "To Pattern," from ten pounds upward, can be forged and tempered. Address Collins & Co., No. 212 Water St., N. Y.

Heydrick's Traction Engine and Steam Plow, capable of ascending grades of 1 foot in 3 with perfect ease. For circular and information Address W. H. Heydrick, Chestnut Hill, Phila.

The Berryman Steam Trap excels all others. The best is always the cheapest. Address I. B. Davis & Co., Hartford, Conn.

T. R. Bailey & Vail, Lockport, N. Y., Manf. Gauge Lathes.

Williamson's Road Steamer and Steam Plow, with Rubber Tires. Address D. D. Williamson, 32 Broadway, N. Y., or Box 1309.

Belting as is Belting—Best Philadelphia Oak Tanned. C. W. Arny, 301 and 303 Cherry Street, Philadelphia, Pa.

Boynton's Lightning Saws. The genuine \$500 challenge will cut five times as fast as an ax. A six foot cross cut and buck saw, \$6. E. M. Boynton, 80 Beekman Street, New York, Sole Proprietor.

For Steam Fire Engines, address R. J. Gould, Newark, N. J.

Brown's Coalyard Quarry & Contractors' Apparatus for hoisting and conveying material by iron cable. W. D. Andrews & Bro. 414 Water St., N. Y.

For Solid Wrought-iron Beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa., for lithograph, etc.

All kinds of Presses and Dies. Bliss & Williams, successors to Mays & Bliss, 118 to 122 Plymouth St., Brooklyn. Send for Catalogue. Mining, Wrecking, Pumping, Drainage, or Irrigating Machinery, for sale or rent. See advertisement, Andrew's Patent, inside page.

Presses, Dies & all can tools, Ferracute Mch. Wks, Bridgeton, N. J.

Machinists; Illustrated Catalogue of all kinds of small Tools and Materials sent free. Goodnow & Wightman, 28 Cornhill, Boston, Mass.

Gatling guns, that fire 400 shots per minute, with a range of over 1,000 yards, and which weigh only 125 pounds, are now being made at Colt's Armory, Hartford, Conn.

A New Machine for boring Pulleys, Gears, Spiders, etc. etc. No limit to capacity. T. R. Bailey & Vail, Lockport, N. Y.

The Berryman Heater and Regulator for Steam Boilers—No one using Steam Boilers can afford to be without them. I. B. Davis & Co.



SPECIAL NOTE.—This column is designed for the general interest and instruction of our readers, not for gratuitous replies to questions of a purely business or personal nature. We will publish such inquiries, however, when paid for as advertisements at \$1.50 a line, under the head of "Business and Personal."

ALL references to back numbers must be by volume and page.

R. and A. say:—Is it possible to bring such an intense degree of heat upon a leaden pipe, say 1/2 inch, that the heat would melt the pipe? provided a continuous stream of water runs through the pipe? Is it possible to melt a pipe at all under those conditions? Answer: Yes. It is possible to melt a lead pipe under the circumstances you mention. One method of doing so would be to girdle the pipe with a platinum wire, heated to white heat by galvanic battery. It would quickly melt the pipe through.

W. B. asks:—At how many strokes per minute would it be most economical to run an engine the cylinder of which is fourteen inches and the piston stroke thirty inches? I am running it at 60 strokes per minute without a cut-off. I have plenty of steam, but do not get power enough at 60 strokes. Answer: Your engine, if of 14 inches diameter of cylinder and 30 inches stroke of piston, well made and well taken care of, ought to run without difficulty up to a speed of 80 revolutions a minute. If as carefully proportioned as the Allen engine, it would work well at double that speed, but it is improbable that you will succeed in going above our figure, just given.

S. says:—I am a fireman on a locomotive, and while running I notice that the indicator on the steam gage points to one hundred and twenty. While the engine is at rest and the boiler cold, the indicator points to ten; what is the actual steam pressure? Answer: We cannot tell you. The only way to determine it is to test your gage by comparison with a standard. Probably your pressure is between 110 and 120 when indicating the latter figure. Test it if you would be safe.

S. G. S. says:—How can I cheaply and simply generate a gas so irritating as not to be borne by air breathing animals? Answer: The gases generated by the burning of tobacco will perhaps answer your purpose. Florists use the weed to destroy insects on plants.

C. H. G., of N. Y., says:—We have just completed a reservoir to supply our city with water, which has about 250 feet fall. The water is pumped from the river, to the top of College Hill where the reservoir is located, by powerful engines, so that we shall have a plentiful supply for years to come. When the project was first proposed, it was mentioned as an inducement that those requiring a small amount of power (there are quite a number here) could use it more economically by various water-motors than they could steam power. Other cities were quoted as an example. But now when we have water in plenty, all are afraid to try, some saying that it will cost too much, others that we have not water enough, and all hang back waiting for somebody to make a start. I wish to ask: What diameter would a turbine wheel require with 250 feet fall, and how many gallons water would it use per hour, to run two small back geared foot lathes, having 4 foot beds and 12 inch swing, used for light work, and how much would such a wheel cost? From this standard, the probable cost of any requisite power can be obtained. Answer: The smallest and cheapest wheel that you can find in the market will drive your two lathes of 12 inch swing. They will require less than a quarterhorse power, and your wheel should use less than 300 gallons of water an hour under such a great head. Write to any good wheel builder.

J. M. F. says:—I enclose a "magical fish;" please explain why it moves when placed on the hand. The motion is not from heat, as it will not move when placed over a warm iron, nor does it move when placed on other parts of the body, say the leg. Are you correct in your answer to F. H. N., page 346, in reference to the report of two guns being heard farther than one? Suppose one man could throw a stone 100 yards. Then place 50 men there, and let them throw. No stone would go over 100 yards, but there would be many more stones in the air. Is it not so with regard to sound? The report of 50 guns would be much more intense within a given circle, but would it be a greater circle than if made by one gun? Answer: It is the warmth with moisture from the hand that causes the thin membrane to expand and contract and thus to wriggle. Your illustration of the throwing of stones does not apply to the throwing of sounds. In the case of the stones each individual exerts his strength on a separate body. But when a number of persons join in simultaneously making sound, they exert their united strength to move the same body, namely, the air; and it necessarily follows that they will unitedly cause the air to vibrate for a greater distance than could a single individual.

J. N. writes as follows:—There is a discussion going on in our shop on the subject of friction, and Morin's experiments have been quoted in support of the theory that friction is proportionable to pressure and independent of the extent of the bearing surfaces when they are of the same quality and not in any way injured. Will you inform us if Morin's experiments were carried far enough, and if they are to be depended on as being reliable? Answer: Morin's experiments are generally considered standard and perfectly reliable. The only difficulty in applying known laws of friction to actual examples arises from the uncertainty of our determination of the limits of pressure which may injure or change the character of rubbing surfaces.

S. M. H., who states that he is a machinist, suggests that street cars may be driven by compressed air, to be carried within suitable cylinders, placed upon the car. Also that canal boats may be propelled by means of traction engines running on the track instead of horses. Both of these ideas are very old, have been frequently and successfully tried and have been repeatedly described in the SCIENTIFIC AMERICAN.

E. O. J. says:—In answer to G. P., who wishes to know the fastest time on record made on any railroad in this country or in England, I would say that in June, 1855, the locomotive Hamilton Davis, on the New York Central Railroad, with six cars, ran fourteen miles in eleven minutes, seven seconds. This is on record.

To J. S. E., query 7, page 298.—From the center of gravity of any triangle let fall perpendiculars on the sides of the triangle. In each of the three quadrilaterals thus formed, one at each angle, inscribe circles, which will be the circles required. (See "To inscribe a semicircle in a right angled triangle," in any geometry).—B., of Mass.