ENGINEERING INVENTIONS.

A cable grip has been patented by Mr. John F. West, of Staunton, Va. The invention covers a simple device for operating movable jaws to grip the cable, and to lift the jaws, together with the grip head, above the line of the operating cable, to pass cross cables or sheave rollers of other lines.

A petroleum engine has been patented by Mr. Adolf Spiel, of Berlin, Germany. This invention covers a construction whereby the oil is drawn in with and mixed with air and then compressed before ignition, the quantities mixed and the compression being automatically regulated, and the construction being an improvement on a former invention of the same inventor.

A railroad signal has been patented by Mr. Randolph F. Hageman, of New Madison, Ohio. Combined with levers located at opposite sides of a crossing and pivoted to the rail, is a weighted lever operated by the pivoted levers when a train passes over, a signal arm and signal being operated by the weighted levers, making a signal which is automatic in operation.

A fish plate has been patented by Mr. Thomas A. Davies, of New York City. It has a head with substantially cylindrical surface to extend to the head of the rail, and an outwardly projecting longitudinal lip at the base, making a strap plate giving an equal amount of bearing surface upon the base and head of the rails.

An apparatus for filling blast furnaces has been patented by Mr. Samuel Thomas, of Catasauqua, Pa. It consists of a track leading to the top of a furnace and provided with an inclined frame, a car having a dumping mechanism operated by the frame, with means for returning the car after dumping its contents, and for pushing the loaded car to the top of the furnace.

A car coupling has been patented by Mr. Charles S. Edwards, of Forkland, Ala. The drawhead has a mortise for the coupling bar and a transverse bearing for engagement by the hook of the drawbar, an uncoupling lever being pivoted in rear of this bearing, the invention covering various novel features of construction and combination of parts, making a simple and ready working device.

MISCELLANEOUS INVENTIONS.

A wire fence has been patented by Mr. James King, of Sandusky, Ind. The invention covers a novel construction and combination of parts whereby a strong fence may be made with few parts, neat and tasty in appearance, and easily built on undulating as well as level ground.

A support for electric conductors has been patented by Mr. Maurice J. Hart, of New Orleans, La. It consists of a series of towers erected at the intersection of streets, with cross bars for supporting conductors, and combining therewith a footbridge supported from the cables, all above the general level of the housetops.

A holder for yard sticks has been patented by Mr. Max Levy, of Newport, R. I. It is for supporting the yard stick near the edge of the sales counter in position for measuring off goods, whereby the work is facilitated, while when not in use it can be readily removed out of the way.

A plumb level has been patented by Messrs. Edwin A. Wentworth and Adelbert J. Traver, of Atchison, Kansas. It is so made that it can be used with equal facility in a common stock or on a straight edge of any desired length to indicate the rise or fall of an unlevel surface from a fourth of an inch or less to twelve inches to the foot, or so many feet to the rod.

A stove has been patented by Mr. Henry Waterman, of Brooklyn, N. Y. The fire chamber has on one side a horizontal hollow inwardly projecting upper breast, with aperture leading through the sides of the stove, and transverse air outlets, there being an externally projecting feeding chamber, and other novel features, making a stove especially designed for burning bituminous coal.

A wire drawing machine has been patented by Mr. Martin F. Roberts, of Kilburn, Middlesex County, England. Combined with the driving shaft and a counter shaft is a friction disk mounted on a feather key, and a second friction disk driven at varying speeds, and secured on a shaft on which a drawing-through pulley is also secured, whereby any required number of dies and die holders, with drawing-through pulleys, may be used.

A road cart has been patented by Mr. Philip Fiege, of Lanesville, Va. A rectangular frame is secured at or near its rear corners to the upper members of the springs, the thills extending under the frame and being hinged to the side bars, the cross bar connecting the thills directly below the cross bar of the frame, while a curved spring is secured to the under side of the front bar, and bearing at its ends on the upper surface of the cross bar.

A fence has been patented by Mr. Reuben B. Eubank, Jr., of Maryville, Mo. It has panels, cross bars or sills, binding wires, with bearings for securing the arms of the binder when tightened, and other novel features, making a simple portable fence, which will be firm and steady, and can be readily erected on ground having an irregular surface.

The binding of blank books forms the subject of a patent issued to Mr. Thomas Beckett, of Jersey City, N. J. The invention consists of leaf sections having their leaves connected by stitches before the sections are connected with each other by parchment bands and the ordinary stitching, giving more strength and stability than blank books bound in the ordinary manner.

A secondary electric clock has been patented by Mr. Wirt B. Harvey, of Memphis, Tenn. It is designed to operate in a circuit where a regulator or master clock causes the circuit to be closed for a short time during each minute, the invention being designed to simplify the action and increase the efficiency and certainty of operating, connecting and synchronizing the hands of the secondary clock.

A buckle has been patented by Mr. Alexander P. Waddell, of Union City, Tenn. It is designed especially as a trace carrier, and has a sliding plate, with means for attachment to the strap, in combination with a hinged plate permanently secured to and adapted to fold thereon, the plates each having parts which interlock and serve to receive and hold the trace.

A spoke socket has been patented by Mr. William E. Hardin, of Monterey, Ky. The invention consists in the formation of the clip adapted to be applied to the felly and for the reception of the end of the spoke, being especially applicable where a spoke has been broken at its tenon or a felly so split as not to hold the spoke and it is desired to continue its use or replace a broken spoke without taking the wheel apart.

A sewing machine, and a take up and tension for sewing machines, form the subject of three patents issued to Mr. Emilio Querol y Delgado, of Brooklyn, N. Y. The sewing machine is adapted to form one or two parallel rows of stitching, the distance between the needles and the shuttles being adiustable to suit the width of the parallel rows of stitches to be made, while one of the needles and its corresponding shuttle and thread may be dispensed with and the machine operated as a single stitch machine. The take-up device consists of a novel construction and arrangement of parts, being simple and durable, and very effective in operation, while the improved tension mechanism is adapted to prevent a too rapid unwinding of the thread, and also to prevent breakage thereof.

Business and Personal.

The charge for Insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

NEW BOOKS AND PUBLICATIONS.

THE METALLURGY OF SILVER, GOLD, AND MERCURY IN THE UNITED STATES. By Thomas Egleston. Two vols. Vol. I. Pp. 558. $7.50. New York: John Wiley & Sons.

Professor Egleston has been for many years a professor of mineralogy and metallurgy at the School of Mines, Columbia College, and, in addition to the advantages afforded by his professional training, has had superior opportunities to become acquainted with most that has been done in the mining and metallurgy of the metals treated of in the United States for many years. This volume treats mainly of the mining of silver and the working of its ores, concerning which most elaborate details are given of the machinery and processes that have been and are at present employed, including specific descriptions of the plant and mode of working at the present day in many of the most prominent mines. Stamp mills and crushing machinery, furnaces for roasting ores, and apparatus for amalgamating, are described with such detail, in connection with many valuable scale drawings, that the work cannot fail to be of great assistance to the mining engineer, and invaluable to the seeker for comprehensive information on the general subject.

L'ANNEE ELECTRIQUE. By Ph. Delahaye. 4me Annee. Paris: Baudry & Co. 1888. Pp. xv, 359.

This useful annual again has reached us, marking the progress of another twelve months. In its pages we find treated electric lighting, primary and secondary batteries, telegraphy, telephony, distribution of force, and all the other phases of electrical work and progress. To those conversant with the French language, no more useful and concise compendium could be recommended. Its obituary notes, giving the necrology of the year, are of value as a brief record of the departed ones.

INDUSTRIAL INSTRUCTION. By Robert Seidel, Mollis, Switzerland. Translated by Margaret K. Smith, Oswego, N. Y. Cloth. Pp. 170. Price $1.00.

Besides a skillful refutation of the objections that have from time to time been raised against industrial instruction in the schools, the author has presented in this book a philosophical exposition of the principles underlying the claims of hand labor to a place on the school programme. It gives in vivid, because homely, phrases the present aspect and prospects of industrial training. No branch of education excites the same interest at the present day as this one, because all seems pointing to the extensive introduction of manual training in the schools of America. It has to be tried and developed on a grand scale here. Hence this work is a timely publication, and should meet with much encouragement from those interested in the culture of the race.

THE MANUAL TRAINING SCHOOL. Its Aims, Methods, and Results, with Detailed Courses of Instruction in Shop-work and Drawing. By Professor C. M. Woodward, of the Manual Training School, Washington University, St. Louis. Cloth. Pp. 374. Price $2.25.

This book, as the publisher states, is exceedingly practical, its main object being to show just how a manual training school should be organized and conducted. It contains courses of study, programmes of daily exercises, and working drawings and descriptions of class exercises in wood and metal. The course of drawing, which has proved eminently successful in the St. Louis school, is quite fully given. The book includes a full description, with illustrations, of the work done in this somewhat famous institution. The different samples of woodworking, blacksmithing, turning and founding, are of intcrest and add largely to the practical value of the book. It is a work which would serve as a teacher's guide, for founding a school to tread in the path so well marked out by Professor Woodward's professional labors.

MANUAL OF ENGINEER'S CALCULATIONS. By D. McLaughlan Smith. St. John, N. B., Barnes & Co. 1886. Pp. 346. $3.00.

This work bears the marks of the working engineer throughout. It is written with special reference to the Canadian examinations. It gives many popular expositions of natural laws. The practical steam worker will doubtless find much that is useful in its pages. It has as frontispiece a heliotype portrait of Mr. William N. Smith, the author's father, said to be the oldest steam boiler inspector in America, and his biography is included in the work.

THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC AND PHOTOGRAPHER'S DAILY COMPANION. 1888. $1.00. Henry Greenwood & Co., London, England. Pp. 710.

This is an excellent compendium of the principal items of photographic interest for the past year, containing suggestions and formulas of especial value to the photographer and amateur. Twenty pages devoted to "Technical Essays for Young Photographers" will be found very useful for beginners. The book has for a frontispiece an illustration of the Thistle, made on bromide paper, by Morgan and Kidd, from a negative by Arthur H. Clark, Esq.

PHOTOGRAPHER'S DIRECTORY. A directory for photographers, lithographers, and for all allied trades in the United States and Canada. The Lithographic Publishing Company, New York. 1887–88. Pp. 202.

This is one of the class of trade directories that within the last few years have grown of such importance in trade circles. The work is well and clearly printed, and is a valuable addition to its class of literature.