

## RECENTLY PATENTED INVENTIONS.

## Engineering.

**FURNACE PLANT.**—James H. Welch, Pittsburg, Pa. This invention relates to puddling and other furnaces heated by gas, but not using the regenerative system, a conduit connected with a single chimney being formed with a horizontal partition dividing the flue into two flues, located one above the other, the lower one conducting the waste gases from the furnace to the chimney and the other one affording a supply of heated air for the several furnaces. It is thus designed to utilize the waste heat of each individual furnace to heat the air necessary for the combustion of the gases, promoting economy, consuming smoke, and doing away with the necessity of building a stack for each furnace.

**FRED REGULATING VALVE.**—William K. Farrand, Brooklyn, N. Y. This is a valve especially adapted for use in regulating the feed of low pressure boilers in which the boiler pressure is less than the street or supply pressure, the valve being also adapted for regulating the supply of water in receptacles other than boilers. Combined with the float-actuating regulating valve and the water column held beneath it is a float held within the water column and connected with the valve stem, the float having an air chamber in its bottom. The device is simple, positive in operation, not liable to get out of repair, and is designed to automatically preserve the exact correct height of water in the boiler.

**DAMPER REGULATOR.**—Charles C. Koster, New York City. When a certain pressure of steam is reached in the boiler this improvement provides that the damper shall be automatically acted upon, and partially or entirely closed, while it will be again opened when the steam falls below the required pressure. The invention covers novel features of construction and the combination of parts, the device being very simple and durable, and adapted for connection with any boiler.

## Railway Appliances.

**CAR COUPLING.**—David A. McCollum, Eagleville, Mo. The drawhead of this coupling is forwardly recessed and transversely slotted at two points, and has a spring-actuated latch bar in the forward recess, a spring-pressed presser bar in the rear transverse slot, means for lifting the latch bar, and a device for locking the presser bar, which normally engages the end of the draw bar in a yielding manner, while the latch bar has a similar contact, so that vertical and lateral play is allowed in the coupling to compensate for the unequal height of cars and curvature of the track. The coupling is effected automatically, and the uncoupling may be effected from either the side or roof of the car.

**RAILWAY SPIKE.**—Samuel Emrich, Reno, Nevada. This spike has a longitudinal bore, in the sides of which are mortises where rest locking plates having their lower ends formed into edges and their upper ends bent outwardly, while a spreading wedge is adapted to enter the bore of the spike and extend between the upper portions of the locking plates, thus forming a spike which, when driven home, cannot possibly work loose. When it is to be withdrawn the locking plates are forced outward through the mortises, leaving the body of the spike free.

## Electrical.

**TROLLEY FOR ELECTRIC RAILWAYS.**—Augustus H. R. Guiley, South Easton, Pa. According to this invention the conductors are placed in a conduit below the surface level, so that the current may be conveyed to the motor and returned without any of the connections being accessible to pedestrians or animals in the street. The slotted conduit has sectional hinged covers opening outwardly, the trolley rods projecting through the slot, having at their lower ends wheels traveling on the conductors, while, by means of a hand lever, the trolley is pushed down into contact with the conductor with more or less force, the trolley being withdrawn when the car is to be stopped.

**ELECTRIC ALARM.**—Henry A. Hull, New Brunswick, N. J. This is a device more especially designed for use on doors, to give an alarm for a short time only on the opening of a door, without giving a continuous sound as long as the door is open. Combined with a contact spring having two faces, one of which is insulated, is a rod provided with a pin adapted to slide, the pin passing in contact with one side and then the other side of the spring when the rod is reciprocated. When the door is opened the spring moves the rod so that the contact pin completes the circuit to sound the alarm, which sounds until the door is opened far enough for the pin to be disengaged from the contact spring.

**REGULABLE ELECTRIC LAMP.**—George W. Hall and Joseph J. De Marr, Georgetown, Col. This lamp is more especially designed for use in hospitals, bedrooms, halls, etc., where the full light is not required continuously. Combined with the lamp is a resistance, preferably in the form of one or more concealed lamps, or a concealed lamp having several carbon filaments of different resistance, with a switch for throwing in the different resistances and also for short-circuiting them.

**ELECTRIC LAMP SIGN.**—Edwin W. Clay, Louisville, Ky. A ring embracing the upper portion of the lamp frame has transverse braces on its opposite sides, while a sign frame is supported by rods attached to the ring, the frame having paneled sides in which the letters of the sign are arranged. With this improvement a sign may be easily attached to an ordinary arc lamp and held so that it may be distinctly seen by night or day.

## Miscellaneous.

**WRENCH.**—George W. Scheid, Fort Recovery, Ohio. This is a tool of simple and durable construction, more particularly designed for conveniently and rapidly screwing up or down nuts on eaves trough

supports or hangers and similar objects. The tool has a jaw adapted to engage the nut and a transverse slot to engage the cross bar of the trough. The wrench handle has a claw at its outer end.

**FLOOD FENCE.**—Henry D. Merrill, Middlebury, Ind. This is an improvement in farm fences crossing streams and low places liable to overflow in time of floods. The fence is designed to bar the passage of all stock when the water is at or below its usual height, but when an overflow takes place the fence inclines sufficiently to permit the drift to pass over without damaging the fence, which rises automatically to its normal or vertical position when the water recedes.

**GUN SWAB.**—George H. Garrison, Sumas City, Washington. This swab has a cylindrical rubber core or cushion, completely covered with a wire gauze cylinder, in such manner that the entire cleaning surface of the swab acts at one time upon the interior of the barrel. The device may be quickly and conveniently manipulated to adjust it to the bore of any gun barrel, and it may be employed to clean rifle barrels as well as smooth bores.

**PLASTER COMPOUND.**—Henry R. English, Jackson, Mo. The basis of this compound is kaolin, or china clay, and the inventor is the owner of a large body of land containing an inexhaustible supply of this material. The other ingredients consist of silicate of soda, glue, and sand, and the improved plaster is designed for use as an inside covering for walls and other surfaces, and as an artificial stone or exterior coating.

**PROCESS OF TREATING SPEISS.**—Paul Flury, El Paso, Texas. This by-product of lead furnaces, composed of iron and arsenic, or nickel-iron and arsenic, usually contains silver and gold, the process of obtaining which from the speiss forms the subject of this invention. The speiss is crushed to grain size, calcined, and mixed with sulphur, the mixture being then gently heated as a current of air is passed over it to carry off arsenious acid and sulphide of arsenic, which is condensed in flue dust chambers.

**DOUBLE PIANO STOOL.**—John J. Herling, Seattle, Washington. The two seats of this stool are movable toward and from each other on a vertically adjustable base, each seat also having an independent vertical adjustment. It may be used as an ordinary single stool, or may be quickly adjusted to form two seats, each of a different height if desired.

**VALVED BOTTLE STOPPER.**—William H. Ricker, Cambridge, Mass. This stopper has a filling and outlet bore, a lateral opening extending from the bore outward through the stopper, a lever carrying a valve extending through the opening and pivoted to rock vertically. The valve may be easily operated from the outside of the bottle, and the moment it is released from pressure it will automatically return to its seat.

**BOTTLE STOPPER.**—Thomas C. Booth, New York City. This stopper has tubes extending through and turning in it, the upper ends of the tubes being bent outward, so that they may be turned to overlap each other, and caps closing their outer ends. This stopper is especially designed for use in ink bottles, the ink being poured out without removing the stopper and the flow of the liquid being under perfect control.

**TOBACCO PIPE.**—Ignatz Pfortner, New York City. This is a corn-cob pipe designed to be cheaply manufactured and be very ornamental in appearance, the invention being an improvement on a former patented invention of the same inventor. In the bottom of the bowl is a plug, preferably of wood, to prevent the rapid burning out of the bowl, and there is also a wood core and mouthpiece for the corn-cob stem, the parts being so put together as not to be liable to separate.

**BAG LOCK.**—Frank and Lewis S. Depuy, Portland, Pa. A mail pouch lock has been devised by this patentee, a lock of simple and durable construction, which will close and lock the mouth of the pouch throughout its length. The invention consists principally of a series of connected locks operated simultaneously from a central locking mechanism, the several locks and the mechanism having the back plates of their casings riveted to the front of the pouch, while the fronts of the casings are covered by a strip riveted at the top and bottom of the front.

**WAGON GEAR.**—Evert Takken, Holland, Mich. A flat spring having one end secured to the center of the rear axle is bent upward and centrally secured to the under side of the body, its forward end being secured to the king bolt, while two spring bars similarly bent are rearwardly secured to the outer ends of the rear axle, their front ends uniting and engaging the king bolt. The invention also covers other novel features, the improved construction being designed to promote easy riding in the body, relieving the axles of all undue strain, and facilitating the ready turning of the wagon.

**TABLE LEG FASTENER.**—James W. Thompson and Robert Golling, Lenoir City, Tenn. This fastener is more especially designed to conveniently and quickly secure the leg to the table frame or permit its removal for convenience in shipping or storing the table. An L-shaped casing is secured to one corner of the frame, a cam lever being pivoted on the casing and engaging a piece of soft material held in the table leg.

**SCREEN FOR LAMPS OR GAS LIGHTS.**—Theophilus A. Brouwer, Jr., East Hampton, N. Y. This screen consists of an arm having at one end an attaching device, the opposite end of the arm projecting through apertures in a series of folding panels, which may be held in any desired position. The device may be quickly attached to a gas burner or lamp, the screen being opened to a greater or less width as desired, or it may be folded up as a fan and dropped down out of the way.

**ARTIST'S SKETCHING SCREEN.**—This is another improvement of the same inventor, consisting of a device especially adapted as a substitute for

the umbrella employed to shield artists while sketching. The screen and its support are so constructed that the screen may be so held as to shield the artist from either the morning, noon, or afternoon sun, while the different portions may be taken apart and rolled up in the cover of the screen to form a small bundle, which may be conveniently carried.

**PUZZLE.**—Robert Watt, Akron, Ohio. A gameboard, not unlike a checkerboard, has in its face a series of numbered apertures arranged somewhat in cruciform order, and in connection with the board are employed movable pieces, each of which has in its top a central depression and in its bottom a stud adapted to fit in the depressions of the pieces or the apertures of the board. In playing a game, or using the board as a puzzle, a portion of the pieces are used to crown other pieces, according to certain rules, and a solitaire game may also be played, designed to be amusing and interesting as well as somewhat difficult.

## Designs.

**CARPET.**—William F. Brown, Newark, N. J. The body of this design consists of floral figures in groupings of a festoon order and simulating roses, pinks and daisies, with buds, stems, and leaves, while the border has floral figures in harmony with the body, and an outer margin of bar, scallop, and arched figures of composite type.

**RUFFLING.**—Adolph Cohen, New York City. A skirt figure, with fluted or ruffle-like appearance, seemingly drops downward in graceful folds from the base of a crowning figure, curving slightly outward, but having also a fluted or ruffle-like appearance.

**NOTE.**—Copies of any of the above patents will be furnished by Munn & Co., for 25 cents each. Please send name of the patentee, title of invention, and date of this paper.

## NEW BOOKS AND PUBLICATIONS.

**MY HORSE, MY LOVE.** By Dinah Sharpe. Illustrated. New York: Orange Judd Company. 1892. Pp. ix, 155. Price, paper 50 cents, cloth \$1.

This book is more or less in the order of "Black Beauty," being a work written by a lover of a horse, and one which recommends kind treatment for our valuable domestic servant. It contains several illustrations and is quite graphically composed.

**MECHANICAL DRAWING.** Progressive exercises and practical hints. By Charles William MacCord, A.M., Sc.D. New York: John Wiley & Sons. 1892. Pp. 100. Price \$4.

Professor MacCord is an author with whom our readers are already familiar. It has been our privilege to publish a number of his contributions in the SUPPLEMENT, and we are glad to see, in the present work, the subject of drawing so well presented, both as regards the author and as regards the work of the publishers. The printing, paper, and general tone of the work, from the publishers' standpoint, are most elegant, and we are convinced that it will meet with a warm appreciation.

**MODERN LOCOMOTIVE CONSTRUCTION.** By J. G. A. Meyer. Fully illustrated. New York: John Wiley & Sons. 1892. Pp. vi, 658. Price \$10.

The great success achieved by the American locomotive, and its very distinctive construction, as compared with the English or Continental engines, have given it an individuality which it would seem should entitle it to a fuller treatment in scientific literature than it has heretofore received, but at last it looks as if justice had been done. Mr. Meyer's work is admirably complete, is very fully illustrated, and brings the subject up to the times. The most practical details of fitting and construction meet with due attention, the work not being limited to the purely machinery part of the structure. Even the bell and its mountings, proportions and constructions are very elaborately given. The wooden pilot, iron pilot, bumper beams and all such points are described and illustrated. These we cite merely to show the thoroughness of the work. Another excellent feature is that on the drawings dimensions are very generally quoted, thus obviating the necessity of applying a scale or rule for the determination of sizes.

**A TREATISE ON HIGHWAY CONSTRUCTION.** By Austin T. Byrne, C.E. New York: John Wiley & Sons. 1892. Pp. xxxiv, 686. Price \$5.

At the present time, when it is proposed to establish a department of roads at Washington, when agitation for good roads is operating all over the country, and when governmental encouragement is, in many cases, already extended to the work, this book appears peculiarly timely. It is an exceedingly full treatise on all sorts of roads, on their construction, qualities, maintenance and general statistics. Even the law points and forms of documents are spoken of in the many illustrations and exceedingly full index adding materially to the value of this book. In his preface, the author quotes the authors and publications referred to, thus supplying, to some extent, a bibliography of the art.

**LIGHTNING CONDUCTORS AND LIGHTNING GUARDS.** By Oliver J. Lodge, D.Sc., F.R.S., LL.D., M.I.E.E. London: Whittaker & Co., George Bell & Sons. 1892. Pp. xii, 544. Price \$4.

Professor Lodge's recent work in upsetting preconceived ideas of electrical protection of buildings will be remembered by our readers. In the present book Professor Lodge supplements his position as a destroyer by appearing in the constructive role, figuring as the exponent of how proper protection can be afforded. The alternative path is quite elaborately treated, and a very excellent feature of the work is the subject of lightning guards or protectors to be applied to electric systems to prevent lightning stroke from reaching the instruments or operators.

**TELEGRAPHIC CONNECTIONS.** Embracing recent methods in quadruplex telegraphy. By Charles Thom and Willis H. Jones. New York: D. Van Nostrand Company. 1892. Pp. 59. Price \$1.50. No index.

This work, by the preface, is directly dedicated to the members of the telegraphic craft. It treats of duplex and quadruplex telegraphy, the troubles and faults, the balancing and other practical details, and will, we have no doubt, be found a most excellent contribution to the field of recent telegraphy. We note the Wheatstone automatic duplex as receiving special treatment, illustrating how well up to date the book has been made.

**RECENT PROGRESS IN ELECTRIC RAILWAYS.** Compiled by Carl Hering. New York: The W. J. Johnston Company, Ltd. London: Whittaker & Company. 1892. Pp. 389. Price \$1. No index.

The title page declares this book to be a summary of current periodical literature relating to the subject. Professor Hering is well known to the electrical world as an eminently satisfactory writer, and this work, despite its contemporaneous character, will be found of value to the engineer. It naturally has the aspect of a compilation, and its value would be much added to by an index.

**LAND DRAINING.** A handbook for farmers on the principles and practice of farm draining. By Manly Miles, M.D., F.R.M.S. Illustrated. New York: Orange Judd Company. 1892. Pp. iv, 199. Price \$1.

The drainage of soil in its practical and scientific aspect, including the effect produced by it on the ground, the means for carrying it out, and the scientific basis of the operation, are the subject matter of this handbook. It appears a very excellent contribution and one which should be in the hands of the advanced farmer. In the treatment of tools, the illustrations of recent approved tools are not only given, but also a plate of obsolete draining tools, thus presenting, by contrast, the proper mode of dealing with the subject in the field. Numerous illustrations and a full index are the features to be noted with approval.

Any of the above books may be purchased through this office. Send for new book catalogue just published. MUNN & Co., 361 Broadway, New York.

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