

RECENTLY PATENTED INVENTIONS.

Railway Appliances.

BLOCK SIGNALS.—Henry C. Horstmann, Naperville, Ill. According to this invention the block system is arranged in such a manner that a train entering a block causes a display of visible signals throughout the block and the direction of the train is indicated. Combined with the battery, etc., and signals at the side of the track, is a conducting rail on which a locomotive contact wheel runs, and a signaling apparatus carried in the cab, in circuit with the contact wheel and one of the track rails, a novel form of circuit breaker being employed, with other special features, by which engineers in different trains can signal to each other, or signals will be automatically given by the stopping of a train or a train breaking in two, or bells will ring when the line is out of order.

INSULATOR FOR TROLLEY WIRES.—Clarence L. Gerrard, Columbus, Neb. This improvement is more particularly designed for electric street railways, affording a cheap and simple insulator, designed to prevent rain, snow, sleet, etc., forming a connection with the ground. The insulating block, of porcelain, glass, or similar material, has two independent apertures, in one of which is held a rod or bolt adapted for attachment to the sustaining wire, while in the other aperture is held a trolley wire supporting rod, adapted for ready engagement with the trolley wire. The insulating material between the apertures is designed to prevent a connection being formed between the two rods in their respective bores.

Mechanical Appliances.

BOLT THREADING MACHINE.—Emil Hubner, New York City. The drive shaft of this machine has fixed gears and a tubular driven shaft in which is a sliding trip rod provided with a screw-cutting die, gears sliding on the tubular shaft and a shifting shaft being located beneath it, while a latch lever engaged by the trip rod engages the shifting shaft and a clutch mechanism connected therewith carried by the tubular shaft. Other novel features are included, the oil dripping from bearings being conducted to a receiving vessel, and thence supplied in proper quantities to a feed receptacle, and the machine being designed, with a single attendant, to produce threaded bolts in quantities equal to those turned out by a number of machines as heretofore constructed.

KNITTING MACHINE STOP MOTION.—Clark E. Sharp, Lowell, Kansas. This is an automatic stop motion in which a vertically sliding thread guide has below it a tripping mechanism adapted to throw the machine out of gear, there being a releasing lever and a connection extending down from the sliding guide to the lever. The improvement is especially designed to prevent large knots, imperfectly twisted yarn, and bunches of loose material on the bobbin, from passing into the knitting machine, thus overloading or choking up the needles and causing breakage and delay.

STONE CUTTERS' GAUGE.—David J. Doane, Vinal Haven, Me. The gauge rod of this device has a lateral right-angled limb and is graduated as a measure of length on one side, a sliding head having a leg and a lug bent in the same direction from the end portions of a spacing bar, the leg and lug having aligning apertures, and a set screw passing through the spacing bar between the leg and lug. The improvement affords a simple and convenient tool for gauging the depth of a projecting shoulder, bead, or other member that is in progress of formation on a slab or block of stone, and also to determine the parallelism of such members or of the sides of the block or slab operated on.

SHEET METAL GAUGE.—Hermad V. Bernhardt, Brooklyn, N. Y. This is a micrometer instrument for measuring and calibrating metal, wire and other articles, of simple construction, self-registering, and easily manipulated, being designed to measure positively and with the greatest accuracy, while the most minute measurements can be quickly read without further calculation. The invention consists of a screw rod adapted to actuate a toothed wheel operating a dial wheel, a pointer being also actuated from the screw rod, while there is a fixed dial on which the pointer indicates on a graduation representing subdivisions of the graduation of the dial wheel.

SLATE PENCIL MACHINE.—Douglass R. Satterlee, New York City. This is a simple and compact machine for making slate pencils from soapstone or slate, forming polygonally shaped pencils from strips of the stone in a rapid and perfect manner. An upright frame plate has radially adjustable sliding blocks on which spindles carrying cutting wheels are rotatably supported, while a central sleeve on the frame plate receives the cutting blank and guides it to the cutting wheels. A drum on the sleeve has a toothed pinion on its outer end meshing with the feeding gearing for the pencil blanks. The machine can be made to cut pencils having a greater or less number of sides, a proportionate number of cutter disks being used in each case.

Agricultural.

CORN PLANTER.—Omer A. Berio, Sturgis, Ky. This invention provides an improved check row attachment of simple and durable construction, arranged to drop the seed in hills any desired distance apart. Connected with the frame and drive wheels of the planter is a runner having a valved spout leading down from the seed box, the valve by means of which the seed is dropped at longer or shorter intervals being connected by levers and sprocket wheels with the driving axle, and this connection being adjustable according to the distance the corn is to be planted apart. The mechanism may be thrown in or out of operation by a lever in position to be pressed on by the foot of the operator.

CHURN.—John Sampson, Waitsburg, Washington. This is a churn of the rocking type, designed to be easily operated by hand or foot power. The rockers are secured together by spacing bars, con-

nected by spiral springs to the base board, to cause the force of the springs to draw in opposite directions when the churn is rocked. A collapsible folding dasher is employed, composed of two frames, each formed of vertical and horizontal interlocking connecting rods, the dasher being readily removable, so that all the parts can be easily cleaned, while affording a superior means for breaking the butter globules.

Miscellaneous.

MAKING SODA WITH STRONTIUM SALTS.—George H. Gray, Denver, Col. This patent is for a process of producing strontium carbonate from strontium sulphate by treating it with magnesium carbonate in the presence of water, or water holding in solution carbon dioxide or an alkaline salt, the operation being so conducted that a continual regeneration of the reagents is effected, avoiding the introduction of extraneous impurities and obviating excessive waste. In the application of the process to the manufacture of caustic soda, strontium sulphate is formed and caustic soda is left in solution, to be removed by siphoning, decanting or filtering, the last portions being removed by washing the precipitate.

JEWELER'S FORCEPS.—David Mendelson, Eureka, Utah Ter. These forceps consist of two tweezers having screw bolts passing through them and forming an axis on which they swing, a pair of hinged arms having their outer ends reduced and pivoted in the ends of the screw bolts, forming an axis on which the tweezers turn. A simple and efficient tool is thus formed for holding two parts of articles to be soldered or otherwise operated upon, and it is also adapted for use by plumbers, gunsmiths, dentists, and others who heat and operate on various small articles.

SCRIBER.—William Potter, New York City. This is an instrument having a base on which is pivoted a turn table, a scriber arm being capable of lateral movement upon the turn table, while a tracing finger or point is adjustably attached to the arm, and a transfer pencil or point is also adjustable upon the arm. The instrument is of simple and durable construction, and designed to accurately and expeditiously scribe or outline any object, whether highly ornamental, fluted, or plain.

COIN SEPARATOR.—Andrew C. Bolton, Brooklyn, N. Y. In a suitable casing are coin-receiving compartments in each of which is a counterbalanced platform adapted to be tilted by the passage of a coin of proper weight and remain in normal condition for the passage of lighter coins. The casing is preferably in the form of a building with a central vertical slot opening in a chimney-like projection of the roof peak, and the internal arrangement is such that coin of different denominations placed in the opening will be reliably distributed to different compartments of the structure.

LETTER OR BILL FILE.—Charles T. Goewey, St. Paul, Minn. Combined with a bed plate having projecting bearings and fixed projecting file pins are hook rods pivoted in the bearings and having an eccentric between them, a spring pivoted in the bed plate engaging the eccentric of the hook rods to hold them engaged with or disengaged from the fixed rod. The device is simple and inexpensive, and is not liable to tear the papers or documents filed by it, holding them all securely while allowing any one of them to be quickly and easily removed at pleasure.

AGITATOR.—Frances F. Wood, New York City. This is a simple and convenient device for agitating sterilized milk held in bottles, the agitator to be inserted into an ordinary bottle and operated to quickly cause the ingredients to be thoroughly mingled. A revoluble spindle carrying loops at its lower end has a downwardly and outwardly bent support, with projecting lugs on its inner side to fit a bottle neck. The loops are of spring metal, so they may be flattened to pass through the neck of the bottle.

DRYING REEL FOR FISH LINES.—Fletcher M. Abbott, Wellesley, Mass. An elongated frame bar is adapted to hold a fishing reel, the bar being adapted for attachment to a stable object, in combination with a skeleton line-drying reel having two sections of different lengths adapted to be spread at right angles or folded toward each other. The lines are quickly dried in good form by means of this device, which also affords a convenient supporting reel for a dry line or a new line previous to reeling on the fishing reel proper.

DITCHING MACHINE.—Edwin M. Reese, Santa Paula, Cal. This machine is adapted to work in gravel, dirt, snow, or under water, and has a rotating and continuously oscillating cutting wheel by means of which a ditch can be cut very deep with the same sized wheel by moving the machine several times over the ground, and lowering the wheel for each cut. Its frame may travel on rails or on the ground, and carries an engine driving a shaft mounted to turn, a loosely hanging arm being guided by the shaft, which also actuates a cutting wheel turning in the arm, the lateral motion of the latter causing a cutting wider than the width of the wheel. The loosened earth is taken up by the buckets of an endless elevator belt and discharged at one side.

STOVEPIPE HOLDER.—William H. Schuster, Fountain City, Wis. This is a hanger having an opening and closing band at its lower end to receive the pipe and permit its ready removal when desired, and the stationary portion of the hanger and the hinged or opening and closing portion of the band, having a hook at its upper end, are connected by a clasp carried by the hanger, which has notches or corrugations at different points, for the engagement of the hook of the opening section of the band. The hanger is adjustable and extensible to adapt it to pipes of different sizes, to be held at varying heights.

RANGE WATER HEATER.—Henry C. Steinhoff, Unfion, N. J. This invention provides a simple form of attachment designed to be readily applied to ordinary ranges for utilizing the waste heat to heat water to circulate in pipes and radiators. It consists of a water heating casing, properly connected by piping with a water circulating system, and having heat

passages through it from the fire pot to the chimney, with means, as a shield in the fire pot and damper in the casing, for sending the heat through or around the casing. The arrangement is such that the heat may be shut off or regulated so the water will not be heated in summer or only slightly heated in the fall and spring.

SHOE HOLDER AND REMOVER.—Joseph Donauer, Duluth, Minn. This is a device whereby the shoe can be put on or off by the wearer without bending the body. It consists of an upright frame having handle bars adapted to be grasped by the hands, while near its base is an open portion having pegs at each side to receive the straps of a shoe or gaiter, which is thus held open to receive the foot of the wearer. Boots jacks are secured at a convenient height on the outer faces of the side of the frame.

BABY JUMPER.—Clarence L. Barnhart, Flint, Mich. This is a spring actuated device of simple and durable construction. The crib is supported by a spiral spring, dependent from the bent over upper end of an upright secured to a readily movable base, mounted on casters, and by the application of a moderate force the crib is kept in motion for a long time.

FIRE ESCAPE.—Carl G. Grunz, Grand Island, Neb. This escape is designed to be easily erected close to a building and to be quickly raised and lowered to be of the desired height. It consists of an endless flexible ladder arranged upon various drums, supported by a base placed near the wall of a building, rollers of the frame work being made to run up on the walls until the ladder is brought within reach from the windows of the building. The weight of a person stepping from the windows on the ladder causes it to come gradually to the ground, its sudden descent under the weight of many occupants being prevented by a brake.

GRIP TESTING MACHINE.—Theobald E. J. Schaibly, Brooklyn, N. Y. In this machine, to test the strength of one's grip, the handle levers are unlocked and the machine placed in position for operation by a coin dropped in a slot. The handle levers, instead of moving in the arc of a circle, move an equal distance at both ends, forming a more accurate test, while the machine is so made that the main levers cannot be operated by pushing or pulling, but only by being firmly gripped and forced together. The machine is also made to operate without springs except the main registering springs, and can therefore be easily kept in working order.

WASH BOILER HANDLE.—Willard A. Smith, Glendale, N. Y. This handle is composed of a single plate of metal cut and bent to form the handle proper and the flat side plates at its ends, the portion of the plate forming the handle proper being bent to form a hollow rounded hand hold, and the flat side plates being bent to an angle therewith and abutted flatwise against the ends of the handle. The improved handle is also generally applicable to wooden and sheet metal vessels, such as measures, baskets, pails, cans, etc.

POCKET BOOK CLASP.—Daniel M. Read, New York City. Two patents have been granted this inventor for gusset clasp improvements, whereby the gusset and pocket at their intersection will be strengthened and prevented from tearing out. By the first, one member of the pocket book frame has a downwardly projected lip, lug or extension to clamp the gusset when it connects with the framed pocket, there being apertures in the frame adjacent to the lips in which rivets may be used. The other patent provides for a clamp consisting of an angle plate having one toothed member, the vertical member being adapted to clamp the gusset at its junction with the framed pocket and the horizontal member adapted to engage with the wall of the pocket. The device may be quickly and conveniently applied to any pocket book, and used independently of the framed pocket of the book.

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.

MONOGRAPH ON FLAVORING EXTRACTS WITH ESSENCES, SIRUPS, AND COLORINGS. Also formulas for their preparation. With appendix intended for the use of druggists. By Joseph Harrop, Ph.G. Columbus, O.: Harrop & Co. London C. E., Snowhill Buildings. 1891. Pp. 161. Price \$2.

The present work covers the field of flavoring extracts for consumption in beverages. It includes a great number of formulas, all worked out in apothecaries' measure, with full directions for the compounding. The book is interleaved for notes, and contains a full and satisfactory index.

THE MODERN LIGHTHOUSE SERVICE. By Arnold Burges Johnson. Washington: Government Printing Office. 1890. Pp. 137.

This is a government publication and is really a very interesting monograph upon its subject. It makes the most interesting reading possible, and its numerous illustrations, tables of data, and historical allusions give a graphic presentation of the guardianship of the world's sea coasts.

BEESON'S SAILOR'S HANDBOOK AND INLAND MARINE GUIDE. Edition of 1891. Complete alphabetical lists of all the American steam and sail vessels on the Northwestern Lakes. Published by Harvey C. Beeson, late Marine Clerk, Port of Detroit, Mich.

THE SLIDE RULE. By William Cox. Keuffel & Esser Co. New York. Pp. 30. Price 50 cents.

THE POLAR PLANIMETER. A manual. By William Cox. Keuffel & Esser Co. New York. Pp. 20. Price 20 cents.

FINSBURY TECHNICAL MANUALS. Practical work in organic chemistry. By Frederick William Streatfield; with prefatory notice by Prof. R. Meldola. E. & F. N. Spon. London, New York. 1891. Pp. xv, 156. Price \$1.25.

For the use of English technical students, the leaders of the comprehensive system of English examinations are producing annually a great number of books calculated for the horizon of that special work. The present manual really details a series of experiments in organic work, with elaborate directions in order to enable the student to go step by step through a series of operations. The work is certainly a useful one and offers an excellent course of manipulatory chemistry.

RETAINING WALLS FOR EARTH. Including the theory of earth pressure as developed from the ellipse of stress. With an appendix presenting the theory of Professor Weyrauch. By Malverd A. Howe. Second edition, revised and enlarged. New York: John Wiley & Sons. 1891. Pp. viii, 136. Price \$1.25.

The title of this book explains its contents, which are devoted entirely to the resistance offered to earth pressure by retaining walls. The theories are very elaborately explained, and the work will be found a valuable contribution to the study of engineering science.

TELEPHONES. Their construction and fitting. A practical treatise on the fitting up and maintenance of telephones and the auxiliary apparatus. By F. C. Allsop. E. & F. N. Spon. London, New York. 1891. Pp. xi, 191. Price \$2.

From the preface, the book under review would seem to be a sequence of the breaking up of the telephone monopoly in England. The writer states that a vast field for development in the direction of private lines is now open, and the work requisite for the construction of such lines is treated, with numerous illustrations, in a list of details.

ELECTRICITY AND ITS RECENT APPLICATIONS. By Edward Trevert. Lynn, Mass.: Bubier Publishing Company. 1891. Pp. 346. Price \$2.

The practical field of electricity is the one especially covered in this work. Railroad work, telephones, telegraphy, motors, dynamos, etc., form the subject matter and are popularly treated and illustrated. An illustrated dictionary of technical terms ends the volume.

BOILER TESTS. By George H. Barrus. Boston. 1891. Pp. 280. Price \$5.

The results of 137 evaporative tests of 71 steam boilers are stated on the title page to be the basis of this exhaustive work. It is one which must be of great value to all engineers having to do with steam power, because it details the practical work of many years personally conducted by the author. Illustrations and tables are given wherever required to explain the subject.

A PRACTICAL HANDBOOK OF ELECTROPLATING. By Edward Trevert. Illustrated. 1891. Bubier Publishing Company. Lynn, Mass. Pp. 77. Price 50 cents.

Enough electroplating for amateur's use may be said to be developed in the very small compass of the present work. Battery and dynamo plating are treated. The small size of the work excuses the absence of index or table of contents.

A PRACTICAL TREATISE ON THE INCANDESCENT LAMP. By J. E. Randall. 1891. D. Van Nostrand Company. New York. Pp. 82. Price 50 cents.

The history and the manufacture of the incandescent lamp is the subject of this little manual, which is a convenient compilation of the present practice of incandescent lighting.

ELECTRICAL TRANSMISSION HANDBOOK. With twenty-two illustrations and twenty-seven tables. By F. B. Badt. First edition. *Electrician* Publishing Company. Chicago, Ill. 1891. Pp. vii, 97. Price \$1.

The general aspect of this book will seem familiar to those already acquainted with Lieut. Badt's convenient manuals. The present one seems an excellent little work, and its standard is high enough for commercial practice. We note, at the end, the reproduction from our columns of Dr. Sloane's analogy between the miner's inch and the ampere.

THE METAL WORKER ESSAYS ON HOUSE HEATING BY STEAM, HOT WATER, AND HOT AIR. WITH INTRODUCTION AND TABULAR COMPARISONS. Arranged by A. O. Kittredge. New York: David Williams. 1891. Pp. 288. Price \$2 50.

The prize essays in a competition organized by our contemporary, *The Metal Worker*, are here reproduced, illustrated and covering steam heating, hot water circulating and hot air systems of heating, cover the ground very completely. Eight essays winning first and second prizes in each competition are included, with illustrations and specifications.

BIBLIOTHEQUE DES CONNAISSANCES UTILES. Aime Witz. La machine a vapeur. Paris: Librairie J. B. Bailliere et Fils. 1891. Pp. 324.

The popular presentation of the present aspect of the steam engine is the subject of the above work, as can be deduced from the opening sentence of the preface, viz.: "In writing this book, the author purposes to be clear and precise, but avoids being learned." It is sufficient to say that the subject seems excellently covered, with the latest details of practice, and we believe the author will be found, in the true sense of the word, to be "learned."