

## RECENTLY PATENTED INVENTIONS.

## Engineering.

**STEAM PRESSURE GAGE.**—Henry Rausser, Charles Wieber, and Alexis Sokoleff, Moscow, Russia. This gage consists of two communicating tubes open at their upper ends and partially filled with mercury or other suitable liquid, while a float-controlled valve of peculiar construction is adapted to regulate the admission of steam to one of the communicating tubes, whereby a pressure is exerted at intervals upon the surface of the liquid, causing the latter to rise in the other communicating tube and indicate the steam pressure on a properly graduated scale. The parts of the gage are designed to be subjected to slight pressure, while the gage will be very reliable and sensitive in operation.

**HYDRAULIC STEERING APPARATUS.**—Charles S. Irwin, St. Joseph, Mo. This apparatus comprises two single-acting pumps mounted on the boat, and having inlet and discharge pipes leading to common openings in opposite sides of the boat, one pump discharging on one side while the other is drawing in water from the opposite side, whereby the ejection as well as the suction will assist in the steering. The apparatus is designed to be of simple and durable construction and most effective in operation.

## Railway Appliances.

**SAFETY FENDER FOR STREET CARS.**—Henry S. Robins, Philadelphia, Pa. This device consists of a frame adapted for pivotal connection with the car, a yielding body portion having a spring connection with the frame, the forward portion of the body extending beyond the front edge of the frame, and the front edge of the body having a cushion, while a yielding partition extends across the body. The improvement is especially designed for cable and electric cars, and is capable of application to the front or the rear of the car. It is adapted to catch up and sustain without injury a person who may be standing in the track of a moving car, and when not in use may be folded up to occupy but little space.

**SAFETY ATTACHMENT FOR STREET CARS.**—Carl E. Baggesen, New York City. This is a fender, guard, or track cleaner, which may be folded beneath the end of the car when not in use. It consists of a swinging operating frame, swinging from the dashboard, in combination with an extensible and contractible carrier apron beneath the end of the car and connected with the frame. The carrier apron comprises a lazy-long frame and fabric cover, with springs for operating the frame and a spring roller to wind the fabric. The carrier apron is projected forward when the operating frame is touched by a person or object on the track, one being thus caught and carried in front of the moving car.

**RAILWAY SYSTEM.**—Lina Beecher, Batavia, N. Y. This system comprises longitudinal sleepers supporting a single line of track rails, on which run vertical wheels journaled on the car, while flanged horizontal wheels run upon the faces of guard rails extending outwardly from the sleepers. The construction is designed to be very strong and inexpensive, permitting also of the use of rolling stock of low cost, while providing for the running of the cars with absolute safety.

**FLUID PRESSURE BRAKE.**—Alexander H. Moyes, Ogden, Utah. This invention relates to the Westinghouse type of air brakes, providing a quick and positive action for applying and releasing the brakes. The improvement comprises an auxiliary air cylinder and air reservoir, through the ends of which extends a brake rod having pistons on its ends, a pipe connecting the train pipe with the outer end of the cylinder, with various other novel features. The arrangement is such that the auxiliary reservoir is always charged with air pressure to actuate the brake mechanism, to apply the brakes quickly as soon as air is released from the train pipe.

**SAFETY HINGE SWITCH FROG.**—Joseph E. Dunlevy (care of Dr. J. M. Reynolds), Memphis, Ind. The frog switch devices proper, according to this invention, comprise two base sections, one at each side of the main rail, one being a long and the other a short section, the upper faces of which are in different horizontal planes. The construction is such that the main track is at all times left free from joints or splices at the frog, permitting trains to pass at as high a rate of speed and with as much safety as at any other point on the line. The improvement also facilitates the siding of trains in a safer and simpler manner than is now customary.

## Electrical.

**ELECTRODE.**—Farnham M. Lyte, 60 Tinborough Road, London, England. This invention relates to the carbon electrodes used in the electrolytic decomposition of metallic chlorides or other metallic haloids in a fused condition. Combined with a hollow carbon electrode closed at the bottom and open at the top is a core of metal or alloy which is fusible at the same or a lower temperature than the salt to be decomposed, so that the core will melt, and in the fluid state make intimate electrical contact with the carbon of the electrode, but will exert no bursting strain thereon. The terminal of the electrode is put in electrical communication with the fusible core by a conducting rod dipping into the fusible core, but entirely free from the carbon. By this means the thickness of the carbon to be traversed may be so much reduced, and the resistance so diminished, that the current will easily traverse the carbon throughout its whole area, thereby enabling electrodes of considerable length to be used.

**CONNECTOR.**—Charles Bell, Stroudsburg, Pa. This is a device for mechanically and electrically connecting the ends of electric light and telegraph wires, etc. It consists of two longitudinally grooved pieces connected by a clamping screw, one of the pieces having holes coincident with the groove for receiving the angled ends of the wires, and the other piece having a notch for the release of such ends.

## Mechanical.

**PLANE GUIDE.**—John McKnight, Fredericton, Canada. This device has jaws by which it may be readily attached to a plane of any size, and one of the jaws is an adjustable arm carrying a longitudinally and laterally adjustable guide block, by which the plane may be made to edge a board perfectly true and square, or plane the edge on any desired bevel. The device is very simple and cheap, and its parts may be cast.

**SANDPAPER WHEEL OR ROLLER.**—Frederick H. Stubbe, New York City. This invention comprises a cylindrical shell with a longitudinal slot, and two clamping bars in the heads of the shell to clamp the sides of the paper, the bars having at their ends beveled heads to be engaged by nuts screwing at the end of one of the bars to move the latter toward each other for clamping the paper. The improvement permits of conveniently spacing the sandpaper in position and drawing it tight around the shell, while also allowing of its ready removal when worn out.

## Miscellaneous.

**NEGATIVE AND SCREEN HOLDER.**—James Scouler, San Francisco, Cal. A simple yet effective invention for holding and adjusting a screen plate used in making half-tone photo-negatives for printing purposes, with reference to the sensitive plate. The usual rabbeted frame for holding the sensitive plate is provided with special wires and pins for preventing the glass sensitive plate from coming in contact with the wood, while on the opposite side or face at each corner are pivoted spring buttons, which, after the screen plate has been placed in position in front of the sensitive plate, are rotated inward, and held the screen securely at each of its four corners. The screen can be readily adjusted at different distances from the plate by means of bars or rods inserted in special recesses provided therefor. The quick adjustment of the screen and the facility with which it is held in position are the chief merits of the invention.

**AIR VALVE.**—Alfred T. Neilson, Jersey City, N. J. This is a device especially adapted for use on pneumatic bicycle tires. It has a valve casing to screw on the nipple, the casing having conical chambers in opposite ends connected by a bore, a conical valve being held in the inner chamber, and having ports in its base, while there is a conical valve in the outer chamber and a screw cap to close the outer end of the casing. By this improvement air may be easily pumped into the tire, a temporary check preventing any escape while the pump is being disconnected, and when finally adjusted the valve is absolutely airtight.

**STREET SWEEPER.**—Charles Gurney, Brooklyn, N. Y. This is a machine which is adjustable in its working parts, convenient to control, and designed to be especially reliable and effective in service. By its forward movement over a roadbed, when the brushes are in contact therewith and adjusted to remove the dirt is first swept from the gutter toward the center of the road, and the windrow thus produced is swept upon elevator buckets and discharged into a car held on the machine, the car being carried upon the sweeper to some point for removal to be unloaded or dumped.

**STAMP VENDING MACHINE.**—William H. Kaltenbeck, Middlesborough, Ky. This is a machine especially designed to sell postage stamps. It is not likely to get out of repair, and upon dropping in its slot certain coins delivers a quantity of postage stamps of equal value, the machine being also arranged to make and return change when necessary. The machine has a holder for a ribbon of stamps, in connection with a coin-controlled feed mechanism for forcing the stamps through a delivery slot, a number of coin chutes delivering their coin on the controlling mechanism of the feed, and various other novel features.

**REPEATING AIR GUN.**—Elmer E. Bailey, Philadelphia, Pa. This is an improvement upon guns whose magazine tube is traversed by a small firing tube or barrel through which large shot or small bullets are projected by an air jet, the air being compressed in a chamber by a reciprocating spring-actuated piston. The invention covers a novel mechanism adapting the air compression cylinder to reciprocate, to alternately open and close the passage into which the shot are delivered from the magazine, and to force the shot into the firing tube preliminary to their ejection by the air blast. The improvement is designed to lessen the cost and improve the efficiency of this class of guns.

**FACING BUILDINGS.**—James W. Graham, Old Fort, N. C. For the facing of the walls of buildings with ashlar tiling, terra cotta, etc., this invention provides simple and inexpensive means of securing thin plates or tiles in place, consisting of a metal-holding strip having a pointer flange and a base flange, the latter having a number of slots to receive fastening nails or screws.

**STOVE.**—Albert W. Alger, Kansas City, Mo. This is a stove which is cheap to make, and designed to be very economical of fuel, while affording greatly increased heat radiation. It is preferably cylindrical in shape, with a fire box at one end and a smoke exit at the other, its body being traversed by longitudinal and transverse heat-radiating flues, with end and side discharging apertures. It is adapted for use with any kind of fuel, and a gasoline or coal oil burner may be set on the grate.

**LABELING MACHINE.**—William H. Leister, Westminster, Md. A label holder or box is, according to this invention, arranged at the foot of an inclined bed on which is a paste pad, an inclined or curved depressible label-holding plate extending across the foot of the label box, while there is a curved rolling table behind the label holder. A very simple device is thus provided for nicely labeling cans, which are rolled over the paste pad to be coated with paste, and then over a bunch of labels, the upper one of which adheres to the can.

**ADJUSTABLE WINDOW SEAT.**—William Kruppenbacher, Yonkers, N. Y. This is an improvement

in devices to facilitate the cleaning of windows on the outside, affording a seat adapted for ready attachment to or removal from a window casement, and having considerable range of lateral adjustment. The device has a base board with a guard railing, and laterally adjustable wings which slide in boxes and engage the window casement, flexible devices retaining the wings at different degrees of projection.

**WATERPROOF SUIT.**—Otte Van Oostrum, Portland, Oregon. This suit is mainly made of waterproof goods, and consists of a jacket and trousers joined at the waistband in a waterproof manner, both garments when on having the appearance of the usual articles of their class. The sleeves have elastic inner cuffs, and the shoes are permanently secured to the trousers legs, or made separate with an elastic waterproof connection.

**DUMPING WAGON.**—George W. Harrington, Pullman, Ill. An endless apron, journaled on rollers at the ends, forms the bottom of the wagon body, and from a hook on the bottom portion of the apron a chain extends to the whiffletree, so that when the whiffletree is detached from the vehicle and the horse moves forward, the top portion of the apron, forming the bottom of the wagon body, will be moved backward, and the load will be dumped at the rear, where the apron passes around the rear roller.

**DRIVING REIN AND TAIL HOLDER.**—Burdine Blake, London, Ohio. This is an attachment, preferably made of a single piece of stout leather, and forming part of the harness, constituting a rein holder and preventing the horse from getting his tail over the reins. It is saddle-shaped, and has a front tongue connecting with the back strap, and side tongues for the breech strap, an aperture through which the reins are passed, and a curved guard surface covering the tail.

**APPLIANCE FOR SPINAL COMPLAINTS.**—Philo B. Sheldon, Erie, Pa. This is mainly an adjustable brace or corset, with steel-stayed back pad, adjustable crutches also having combined with them steel body bands or rests, while an abdominal pad or belt is held in place by suspension attachments, and bands or webs are adapted to pass around the legs half way between the knees and hip joints. The improvement is designed to facilitate the remedying of deformities and curing of affections of the spine, relieving the spine of the weight of the upper portion of the body, and avoiding the use of stiff jackets and the objections found in other forms of spinal corsets.

**TEMPORARY BINDER.**—Charles T. Rosenthal, Batesville, Ark. The covers of the book are connected by the usual concaved back, adjacent to which this binding device is located, consisting of rods sliding in bearings attached to opposite sides of the back section, while straps are arranged in pairs, so that one strap of each pair is rigidly attached to the bearings and the other strap of each pair is attached to the rods and actuated thereby. By this means any number of leaves may be introduced and bound between the covers or readily removed therefrom without disturbing the adjacent leaves.

**RENOVATOR.**—Charles Karlson, Red Bank, N. J. This is a simple and convenient device to facilitate the quick and thorough removal of dust from upholstered furniture and carpets on floors. It comprises a receiving box having an open lower end engaging with the fibrous material to be cleaned, an inlet valve at the lower side within the box, an outlet valve, and a bellows. It is designed to remove dust, previously loosened by beating, by exhaustion of the air where it is applied, thus drawing the dust from the material to be cleaned and discharging it into a receptacle or at a point exterior to the room.

**BUST SUPPORTER.**—Ludwig Lerdry, New York City. This is a waist-like garment, preferably made of a woven or knit fabric, and having integral front pockets to fit the form, shoulder straps, an elastic waist band and straps, and a fastening device.

**CURLING IRON.**—William M. Cleeland, Great Falls, Montana. This is a device permitting the hair to be wrapped around the tube before the heat is applied, thereby avoiding danger of burning. It has a long, tapering, conical tube, at one end of which are pivoted two wire arms and a tongue adapted to lie between them, the wire arms clamping the hair as it is wound around the tube and tongue, when a tapering heating iron with non-conducting handle is inserted in the tube to heat the latter to the desired temperature.

**POTATO SLICER.**—Henry B. O'Connell, New York City. This is a simple device designed especially to facilitate the cutting of peeled potatoes into such shapes as used for making "French fried potatoes." It consists of a table in which are set longitudinal and transverse knife blades, over which operates a plunger head reciprocated by a handle lever, the head having on its under side blocks arranged to pass into the openings formed by the intersecting sets of knife blades.

**WIRE HANGER.**—William Trehwella, Newbury, Victoria. A single piece of wire is bent at one end to form a hook adapted to be hung on a chimney crane, and at its other end it is bent to form a hook completed at its point by a right angular bend, for engagement with the handle of a saucepan or other article, to facilitate holding the saucepan over a fire any required height.

**TOY OR ORNAMENT.**—George H. Newton, Menon, Mass. This is a device in the shape of a bird, the body having at its lower end a pin turning in a support, as in the upper end of a flagstaff, and the body having a cross spindle carrying wings curved to form propeller blades. The body is made as flat as possible to hold the wings to the wind, whereby they may be revolved. As a toy, children may rotate the body and wings by moving the device back and forth.

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.

**HOW TO THINK IN GERMAN.** By Charles F. Kroeh, A. M., Professor of Languages in the Stevens Institute of Technology. Hoboken, N. J.: Published by the author.

The fundamental ideas is the same as in "How to Think in French" by the same author. The learner associates with his own actions day after day, as he performs them, the correct German sentences that describe them. No English comes between him and what he wishes to say in German. Then he is taught to vary the sentences according to the genius of the language. They serve as patterns or formulas of speech in which he gradually substitutes the rest of his vocabulary. Finally he connects sentences together in all possible ways. All the grammatical difficulties of German (the declensions, the order of words, the command of verb form, indirect discourse, etc.) are taught practically in an entirely original way, by which the learner gradually emancipates himself from his dependence on English for the expression of his thoughts. Especial attention is called to the chapter on reading for a speaking vocabulary and on learning short stories. As a practical book to aid in quickly acquiring the power of correct and fluent speaking of the German language, this work has no equal. Every learner should procure it. Professor Kroeh is one of the ablest of instructors and this book is the concrete result of many years of active experience in his profession.

**UNIVERSAL BIMETALLISM AND AN INTERNATIONAL MONETARY CLEARING HOUSE, TOGETHER WITH A RECORD OF THE WORLD'S MONEY, STATISTICS OF GOLD AND SILVER, ETC.** By Richard P. Rothwell. New York: The Scientific Publishing Company. 1893. Pp. 53. Price 75 cents.

Coming from the editor of the leading mining journal of the United States, the above work is a plea for the continuation of silver coinage. The author believes that the problem with which the United States is now confronted could be solved by an international system of bimetalism. An immense amount of labor is indicated by the statistics and data contained in the text and tables. One interesting feature is a chronology of the gold and silver industry for the last 450 years. It is not, of course, quite up to date, owing to recent events in British India and in this country, and quite possibly within the next few months may fall in chronicling some very important changes.

**BRITISH LOCOMOTIVES, THEIR HISTORY, CONSTRUCTION, AND MODERN DEVELOPMENT.** By C. J. Bowen Cooke. With numerous illustrations from sketches and diagrams by C. E. Jones and R. A. McLellan. London: Whittaker & Co. 1893. Pp. xvi, 381. Price \$2.

The American railroad engineer has become fully awakened to the value of several details of English locomotive practice. From the work under review numerous illustrations, in addition to the text, excellently present the field described. It is written, of course, entirely from the English standpoint. The chapters on the running of engines, touching on the duties of the crews, lubrication, packing and other details, giving the English practice, will be of special interest to our engineers.

**MISSOURI STATE MEDICAL DIRECTORY.** Containing a carefully prepared list of physicians, dentists, and druggists, together with colleges, hospitals, medical associations and societies throughout the State. St. Louis and Chicago: The Medical Fortnightly Press. 1893. Pp. 119.

**ESTIMATE BLANKS FOR STEAM AND HOT WATER FITTERS.** Adapted more particularly for dwellings and apartment houses, small stores, and general low pressure work by either steam or hot water. New York City: Nason Manufacturing Co. Pp. 100. Price \$1.50.

This excellent series of blanks, dedicated to the steam and hot water warming fraternity, will be found very useful for contractors. It consists of a series of two pages of a repeated blank, containing the titles of the different measurements to be taken and noted and other particulars referring to the heating of dwellings. It is, without question, something which, for those engaged in such a business on an extensive scale, would not only conduce to the saving of a great deal of clerical labor but would also tend greatly to the accuracy of the labor with which such work must be done.

**PALLISER'S COMMON SENSE SCHOOL ARCHITECTURE, ILLUSTRATING THE PRACTICAL AND ECONOMICAL WARMING AND VENTILATION AND THE CORRECT PLANNING, ARRANGEMENT AND SANITARY CONSTRUCTION OF SCHOOL BUILDINGS FOR AMERICAN CITIES, TOWNS AND VILLAGES.** By Palliser, Palliser & Co., architects. New York: J. S. Ogilvie. Pp. 110. Price \$1.

In this series of illustrations of school houses, for the book is little more than that, we find indicated a strongly accentuated departure from the old system of plain and unattractive school buildings. The variety of structure exhibited in this volume is quite striking, and for many of the plans quite elaborate specifications are given. The elevations and perspectives are in many cases very artistic. There is a certain amount of text on general topics in the line of the work, other than specifications.

**DAS ATELIER UND LABORATORIUM DES PHOTOGRAPHEN.** By Dr. Josef Maria Eder, Director of the Imperial Institute for Photography, etc. Halle a. S., Germany: Wilhelm Knapp. 1893. 325 engravings. Pp. 172.

The book forms a supplementary volume to the Handbuch der Photographie by the same author, and treats in