

RECENTLY PATENTED INVENTIONS.

Engineering.

**GAS ENGINE EXHAUST FURNACE.**—Hippolyte J. Seigneuret, Henderson, Minn. This engine combines a gas engine and a steam engine in a manner designed to utilize the heat of the products of combustion in the former to propel the steam engine. The gas engine is placed in the water space of the boiler, and arranged to exhaust into the fire box or combustion chamber, the parts of the engine which do not admit of being placed under water being set up outside the boiler. The gas engine may be of the ordinary construction, and both boiler and engine may be vertical or horizontal.

**WATER INDICATOR FOR BOILERS.**—William H. Rodgers, Bay Side, N. Y. A receptacle containing an expansible liquid or gas, and provided with a diaphragm, is supported by a shell, through which it is connected with the water column of a boiler, a lever being fulcrumed on the diaphragm and another lever on the support, there being also a connection between the diaphragm and an alarm mechanism, by which an alarm will be given when a predetermined quantity of water is in the boiler or when a certain degree of temperature is reached. The device is of simple and durable construction, readily applicable to any boiler, and without the inclosing tube may be used as a thermostat in factories, greenhouses, hotels, mines, etc.

**WATER ELEVATOR.**—Rufus W. Tinsley, Union, S. C. An apparatus adapted to raise water by the automatic pressure of the water within two cylinders is provided by this invention. The cylinders each contain a reciprocating piston having a valved water-conducting tube of less diameter attached to its upper side, through which tubes water is forced up as the piston descends. Water is alternately admitted to and cut off from the respective cylinders, and is thus forced alternately up the respective piston tubes, the weight of the column of water in each tube above its valve balancing the column in the other tube, whether the tubes are rising or falling.

**POWDER MOTOR.**—George V. Sheffield, New York City. The driving shaft of this motor is connected with a piston over which slides a carrier block in an inclosed chamber, the block having a central chamber and a series of passages in alternating connection with a furnace through which passes a firing pin into the block, while a reciprocating hopper above the block supplies measured quantities of the explosive compound in accordance with the adjustment of a time connection. The arrangement is such that the application of the power of the powder to the pistons may be made in a safe and effective manner, a uniform charge of powder being afforded for each explosion.

Highway Appliances.

**CAR COUPLING.**—Horatio G. Wood, Newport, R. I. Combined with a slotted drawhead and a vertically movable pin having a rearwardly extending arm is a swinging weighted lifting lever pivoted in the rear of the pin, the lever having its lower end adapted to extend into the path of a coupling link, while its upper end is recessed to receive an arm of the pin, there being a crank mechanism to operate the lifting lever. The device is simple, strong, and cheap, and may be used with any of the common link and pin couplings, enabling the cars to be automatically coupled on coming together, while the uncoupling may be effected from the top or sides of the car.

**CAR COUPLING.**—Melvin T. Miles, Le Mars, Iowa. This is a simple, strong and automatic coupling, of such form that an ordinary link may be used to connect two of the improved couplings, or to couple the improved device with an ordinary bull nose coupling of the link and pin type. At the rear of the drawhead aperture is a disk-like pivoted coupling dog, having a toe formed by cutting away part of the disk, there being a pin rearward of the toe, while a notched cross-bar is adapted to lock or release the dog by its sliding movement, there being means to move the bar longitudinally.

**PNEUMATIC CAR BRAKE COUPLING.**—Rufus W. Tinsley, Union, S. C. Combined with a coupling head having valves and a bracket attached to the car frame and a vertical slot, is a spring attached to and supporting the head, with means for securing it to the slotted bracket, and adjusting it higher and lower. The coupling and uncoupling of the air pipes is, with this improvement, effected automatically, the attention of a train hand not being necessary, the air pressure instantly forcing the valves to their seats when the coupling heads separate, so that escape or leakage is prevented while the cars are uncoupled.

**STREET CAR.**—John E. Foster, Monmouth, Ill. At the car end are two doors hinged at their inner edges, one swinging inward and the other outward, and outside of these is a vestibule whose floor is below that of the car, with sliding doors one on each side of the center. The passenger stepping into the vestibule is safe, no matter how suddenly the car stops or starts, and it is designed to have passengers enter by the right hand door and leave by the left hand door, permitting loading and unloading without any crowding.

Electrical.

**AUTOMATIC ELECTRIC SCALE.**—Paul J. Kuhnbacher, Ashland, Ky. This is an improvement in track scales for weighing railroad cars and their contents, but applicable also to other purposes. The poise is attached to a flexible connection running parallel to the scale beam and passing around pulleys, the connection being moved to adjust the poise by an electric motor. The field magnets of the motor are fastened to the short end of the scale beam and carry the armature at their lower ends, the weighing being effected automatically as the load is placed upon the scales and the weight recorded by printing at the same time.

Mining.

**ORE CONCENTRATOR.**—Thomas T. McNary, Hailey, Idaho. Within a suitably constructed casing having at one end a hopper through which the material to be treated is discharged is a series of V-shaped connected channels, each formed at its apex with a transverse slot, a pipe connected with the water supply discharging the water under pressure into the slot. The construction is simple and inexpensive, and is more especially designed for separating the sand from the precious metals, to prepare the ore for the jigs and tables.

**ORE SEPARATOR.**—Carl A. E. Meinicke, Clausthal, Prussia, Germany. This is an ore sizing or grading apparatus in which an ascending column of water separates the valuable material and passes it through different channels, according to its size and weight. Combined with a hopper discharging into a vertically arranged channel into which open one or more inlets at one side, is a series of branch outlets on the opposite side of the channel, located one above the other, an overflow being arranged above the uppermost branch outlet.

Agricultural.

**PLOW.**—Marcus L. Battle, Cairo, Ga. The share of this plow has an independent blade and point, and a shoe is provided for connecting the two sections. The construction of the shoe is such that blades of different widths and degrees of curvature may be employed in the formation of the completed share, to turn the earth more or less over. The improvement also provides an adjustable landside with cutters adapted to cut under-plants or weeds and sever their roots, the whole construction being very simple and the plow being readily adapted to various kinds of work.

**BUTTER WORKER AND WEIGHER.**—Thomas Muir, Margaretville, N. Y. This is an improvement on a former patented invention of the same inventor, providing a new construction of bowl and form of working lever or cutter, with devices to facilitate the free rotation and transverse movement of the lever, means for draining the bowl, and means for utilizing the bowl as a scale platform in weighing butter. Combined with the bowl is a vertical standard hinged at its lower end, a working lever or cutter having a universal connection with the standard near its upper end, whereby the downward pressure of the worker exerts an upward pulling strain upon the swinging standard.

Mechanical.

**POWER TRANSMITTER.**—William Larson and Ole Gunderson, Lake Mills, Iowa. This is a simple and durable construction, more especially designed for converting the reciprocating motion of a windmill rod into a rotary motion. Three parallel shafts on which are ratchet wheels are mounted in a frame and geared together, there being also parallel arms on the shafts provided with pawls engaging the ratchets, while projecting from these arms are other arms whose adjacent ends are clamped to a head.

**DISK HOLDER FOR VALVES.**—John W. Randall, New York City. The valve casing, according to this improvement, is formed with an inwardly extending annular flange, on which is seated a ring on top of which is a metal disk having a projection fitting into the ring, a cap screwing in the casing on top of the disk. The valve is simple and durable, the seat opening being left totally unobstructed when the valve is unseated and the fastening device being prevented from becoming accidentally unloosed or detached.

Miscellaneous.

**CASH REGISTER AND ADDER.**—John E. Claudin and Paul Robert, Roanoke, Ill. This is a machine designed to accurately indicate at any time the amount of the contents of the drawer in connection with which it is used, being an adding machine as well as a cash register. Preferably the machine is without casing, but has a box-like frame with top and bottom plates, in which are journaled vertical spindles each carrying a dial with numbers on its face, the dials being moved by shifting arms with handles and pointers. The machine is designed to register from cents up to hundreds of dollars, and the invention covers various novel details and combinations of parts.

**SHADE AND CURTAIN FIXTURE.**—James H. Herring, Murphy, Texas. A simple, practical and efficient device is provided by this inventor to afford adjustable support for a window shade and also for a curtain pole, whereby the curtain and shade may be together lowered to permit the free entrance of light or air from above. It is a supporting and retracting device consisting of vertically sliding bracket boxes on strips fixed to the stiles of the window casement, an adjusting cord hanging from the lower end of each box, by means of which the height of the curtain roller and shade may be adjusted as desired.

**BOTTLE FILLING APPARATUS.**—John Jackson, Lonsdale, R. I. Connected with a receiving trough are delivering or filling tubes, each holding just a sufficient amount of liquid to fill a bottle, and each tube is provided with a valve, the stems of all the valves being connected with a frame actuated by a valve lever, by the moving of which in one direction or another all the valves are opened or closed. By this means a number of bottles may be simultaneously filled without spilling any of the liquid, whether or not the bottles be transparent.

**MUSICAL INSTRUMENT.**—Alexander Gylfe, South Bend, Washington. This is an instrument of the violin and guitar class, with a central sounding board having a transverse strengthening rib and sounding holes, while there are sounding ports between the board and the belly and back of the instrument. By placing such a sounding board in the body of the instrument, it is designed to greatly increase the sound, at the same time making it sweeter and softer.

**MOUTH HOLDING APPARATUS.**—Howard M. Casebeer, Lincoln, Neb. This is an appliance for dentists and surgeons, to be applied to the head of a patient to hold the mouth open as desired and allow of easy respiration. A spring-clasp support adapted to be sprung upon the patient's head is connected at one side with an adjustable holder extending forwardly along the jaw, and having at its forward ends members with mouthpieces to engage the upper and lower teeth.

**RUBBER DAM CLAMP.**—Christian A. Meister, Allentown, Pa. This is an improvement on a former patented invention of the same inventor, providing for the raising and lowering of one jaw relatively to the other in spring clamps mostly used on bicuspid and incisors. The improved construction is such that the clamp may be conveniently used without producing much or any pain on teeth of different kinds or of different heights on their outsides or insides.

**SURGICAL ANTISEPTIC THREAD HOLDER.**—Norman White, Bay Ridge, N. Y. In the neck of a suitable jar is fitted a disk or plate from the under side of which depend spindles carrying the thread bobbins, immersed in the antiseptic liquid, the ends of the thread passing up through a central tube. The jar is designed to accommodate bobbins for several sizes of thread, and in being drawn out the thread passes through a recess filled with wax, whereby the fluid held on the thread is wiped off.

**EAR WIRE FORMING DEVICE.**—David Mendelson, New York City. The shaping of wires by hand by means of pliers into various kinds of loops for ear ornaments is designed to be superseded by this invention, which presents a cheap and simple device, to be held in the hand or secured in a vise, and by which ear wires or loops may be quickly and accurately made. An arm held to slide on a plate or bed has its upper end bent to engage the wire, while a forming can is secured adjacently to the arm, and forming pins project from the bed, the position of the pins being changed according to the shape to be given to the wire.

**DUST SEPARATOR FOR FLOUR MILLS.**—Frederic E. Duckham, London, England. This invention covers a method of and apparatus for separating the dust or stive from the air coming from grain milling machinery, and consists in providing an atmosphere of greater density into which the grain and dust laden current is projected in the form of a jet across an open space into or against the atmosphere of greater density, whereby the grain and dust are separated from the air current.

**OPERATING SLIDING DOORS.**—James A. Gatfield, Durham, Canada. This is a device for automatically closing and opening doors, whereby, when a cashier stands in front of his desk window or other opening closed by a sliding door, the latter will be opened automatically, and will close the moment the cashier leaves the window. A pivoted platform has a lever connection with the shutter to open it and an automatically operating latch mechanism to lock the shutter against opening when the platform is relieved of pressure.

**CONVERTIBLE CARRIAGE, CHAIR OR ROCKER.**—Nathan Silverson, New York City. This invention covers a composite construction which may, without the use of tools, be interchangeably converted into a spring carriage, a rolling chair, a rocking chair, a stationary chair and a child's high chair. Combined with two separably hinged body sections, one having a seat-back and side arms, are two forward, bent springs, a single transversely extending bent rear spring, two axles, four wheels, two flexing reach bars, and means to detachably secure the top of the rear spring to the rear body section. The invention also covers various other novel details of construction and the combination of parts.

**PRINTING PRESS ATTACHMENT.**—Emil Meier, New York City. In a press having distribution rollers contacting with a reciprocating inking table, a bar is pivoted at one edge of the table to contact with the rollers, preventing the table from striking the rollers at an angle, and thus chipping them. The bar moves in unison with the table and is arranged to conform at once to the angle of the rollers, and bear against them throughout their length, whereby the shock of the moving table will come bodily upon the rollers.

**BRAID CASE.**—Charles F. Sundstrum, Michigamme, Mich. This is a cheap and simple case for holding a large quantity of braid in such a manner that it cannot be soiled or injured, displaying the braid to advantage and still keeping it covered, while the whole or any portion of the braid may be easily removed when necessary. The rolls of braid are mounted on spindles fitting snugly in cylinders, there being behind the rolls in each cylinder a spiral spring pushing the rolls forward, so that one may easily grasp a roll and pull it off the spindle.

**CIGAR CASE.**—John O. Ullin, Ludington, Mich. This is a longitudinally opening and closing case adapted to hold a partly burned cigar, and having internal knives or cutters for severing the burned end of the cigar when the case is shut.

**GAS TIGHT BARRELS, KEGS, ETC.**—August Werner, Brooklyn, N. Y. A vessel which will be completely air and gas tight, and is designed to preclude all leakage when filled with a fluid under pressure, is provided by this invention. The staves and heads are each made in sections, and strips of flexible material placed between the sections, thereby forming a continuous intermediate layer of flexible material within the body of the staves and heads.

**AXLE NUT.**—Joseph Bernel, Middle Village, N. Y. This nut has opposite interior lugs which receive lugs on the reduced end of the axle upon which the nut is to be fitted, the nut being locked upon the axle instead of being screwed on it. The improved nut is strong, inexpensive, and presents a neat appearance, and when applied to the axle will remain in position as first put on, no matter how much wear and jarring the axle is subjected to.

**THILL COUPLING.**—William H. Pardee, Antigo, Wis. The coupling bolt of this device is adapted to extend through the clip lugs and thill knuckle, a head plate secured to the bolt having arms to clasp one of the lugs, while a face plate receives the bolt and fits against the opposite lug, there being a spring connection between the head plate and face plate. With this device the coupling may be quickly effected, and all side motion and rattling are practically obviated.

**WATER CLOSET ATTACHMENT.**—Isaac A. Martiu and Charles T. Hammon, Ouray, Col. This is a portable device in which, in connection with a fluid receiving compartment, is a compartment for receiving and distributing a disinfectant quickly and conveniently when necessary.

**DESIGN FOR PERFUMERY HOLDER.**—John E. Warren, Jr., Newark, N. J. This holder is essentially in the form of a lamp post, with a suitable base at its lower end and the ordinary street lamp casing at the upper end.

**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.

**MANUAL OF QUALITATIVE BLOWPIPE ANALYSIS AND DETERMINATIVE MINERALOGY.** By F. M. Endlich, S.N.D. New York: Scientific Publishing Company. 1892. 8vo. Pp. xv, 456. Cloth. Price \$4.

There is no one who is better qualified to write a work upon this subject, Professor Richter excepted, than his pupil Mr. Endlich. The value of any work on analysis depends to a great extent upon its arrangement, and in this book the arrangement is essentially new, and the various tables, as well as all enumerations of mineral species have been carried out in alphabetical order whenever possible. The need of a work which could be used both for self-instruction and by the student working under the direction of a teacher has long been evident, and the present work was written by the author with both ends in view. Not all of the known or described mineral species are included in the tables, as this would only lead to inevitable confusion, but all those which are of value and liable to be met with are treated in a very satisfactory manner. The work is a valuable contribution to the literature of the subject.

SCIENTIFIC AMERICAN BUILDING EDITION.

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2. Plate in colors showing a colonial residence at Crauford, N. J. Perspective views and floor plans. Cost \$6,000 complete. Mr. Oscar S. Teale, architect, New York. An excellent design.
3. A summer cottage at Asbury Park, N. J. Perspective view and floor plans. Cost \$3,400 complete. C. M. Dissosway, architect, New York.
4. A pretty cottage erected at Dubuque, Iowa, at a cost of \$1,650. Floor plans, perspective, etc.
5. A double dwelling house erected at Springfield, Mass., at a cost of \$10,495 complete. Mr. B. H. Seabury, architect, Springfield, Mass. A model design. Floor plans and perspective.
6. A "Queen Anne" cottage erected at Cranford, N. J., at a cost of \$5,350 complete. A unique design. Perspective elevation and floor plans. Charles G. Jones, architect, New York City.
7. A residence in the "Old Colonial" style of architecture, erected at Oakwood, Staten Island, N. Y. Two perspective views and floor plans. Cost complete \$4,515.
8. St. James' Lutheran Church, New York City. A striking piece of architecture in Romanesque Gothic, cruciform, pure ecclesiastical style. Cost of building and rectory \$80,000. Mr. William A. Potter, architect, New York City.
9. A residence recently erected at Asbury Park, N. J. Floor plans and perspective elevation. Cost \$6,750 complete. Mr. J. W. Roberts, architect, Newark, N. J. An excellent design.
10. Perspective and plans of Roble Hall, girls' dormitory, lately erected at Stanford University, Cal.
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