

## RECENTLY PATENTED INVENTIONS.

## Engineering.

**VARIABLE CUT-OFF.**—Walter de Sanno, Corry, Pa. This is a slide valve connected by a connecting rod with an operating lever, a lever to which the rod is attached being pivoted to the side of a rocker lever and a sliding block being attached to the operating lever and provided with suitable rods by which it may be moved, thus effecting a quick valve motion and variable cut-off, with means for quickly changing the stroke.

**SLIDE VALVE.**—Edward Leslie, Orangeville, Ontario, Canada. This valve consists of an outer valve section formed to rest upon the valve seat, this section controlling the inlet of the motive agent, and an inner valve section having an open top, which also rests upon the valve seat and is formed with a flange that fits closely against the under side of the top of the outer valve section, this inner valve section controlling the exhaust, and the construction providing for an exceedingly rapid reciprocation of the valve.

**BOILER LEVELER.**—William H. and Joseph L. Freeman, Shell, Ohio. Combined with the boiler, the front axle, and a straight rack bar loosely attached thereto, is a worm gear secured to the boiler and a shaft arranged alongside of it, with other novel features, for conveniently and rapidly leveling the boilers of traction engines.

**IGNITOR FOR GAS ENGINES.**—John J. Pearson, New York City, and Julius Kunze, Yonkers, N. Y. Combined with the power cylinder is a water jacket valve chamber in which is seated a spring-pressed valve having an apertured stem and valve seat, another valve being fitted to the valve seat and carrying a plate and burner to heat the plate, in connection with a movable cam arranged to push forward both valves, an operating lever and governor balls.

## Railway Appliances.

**CAR COUPLING.**—Charles G. Wheeland, Brush Creek, Iowa. This invention provides a means whereby the link may be vertically adjusted from the side of the car to couple with a drawhead of greater or less height, the coupling being made automatic when desired, and the device being capable of being reversed or turned end for end.

**ELEVATED RAILROAD.**—John N. Valley, Jersey City, N. J. This is a structure more especially adapted for use in timber lands for getting out logs, or in mines for transporting coal, etc., and is made with a single rail or track supported by hangers from overhead longitudinal stringers sustained by struts set on or into the ground.

## Mechanical.

**SAW FILER.**—Chandler W. Dudley, Whiting, Iowa. This device has a supporting rod on which slides a bed plate, there being pivoted on the latter a turn table having guide standards in which slide guide rods, with other novel features, by which, when the device is set to the proper pitch or bevel, it is impossible to file at any other angle, and the labor is easily performed.

**WINDMILL.**—Lincoln E. Martin, Emery, South Dakota. This mill is more especially adapted for the discharge of water taken by it from a well into an adjacent float tank to maintain a water supply to buildings or farms, the mill being automatically operated for such purpose, and the entire construction being designed to be simple, strong, and efficient.

**BELT SHIFTING AND BRAKE MECHANISM.**—James H. Rohme, Newburg, N. Y. This is a combined mechanism to be connected with the driving wheel and flywheel of a sewing machine, to readily shift or unship the driving belt from the driving wheel while the latter is in motion and apply a regulated pressure to the flywheel to brake it.

## Agricultural.

**CORN PLANTER.**—Byron E. Cagle, Medina, Kansas. This invention relates to corn planters in which the seed-dropping mechanism is located on the traveling wheels, the cut-off slides being automatically operated during the revolution of the wheels to drop the seed at the proper time by engaging a fixed portion of the planter frame, the operation being positive and the machine simple in construction.

**REVERSIBLE PLOWSHARE.**—William Heithesay, Petersburg, South Australia. In this plowshare the standard has a foot projected laterally at an angle in combination with a reversible approximately triangular share secured at its apex to the foot, the cutting edge of the share making one side of the base of the triangle, forming a double-pointed share which can be reversed when the forward point becomes blunt, when the reversed point will be automatically sharpened by the further use of the share.

**HAY STACKER.**—John H. Moore, Plessis, N. Y. This is a slide or chute, usually consisting of two parallel end beams, connected by a number of slightly spaced strips or planks, and adapted for attachment within a barn, whereby the hay elevated by the fork or sling may be directed to the sides of the mow or to the center.

**HAY LOADER.**—Adolph Lasack, Oxford Junction, Iowa. Combined with a bed and crank shafts journaled therein is a series of longitudinal rake bars, provided near their upper ends with tracks, each formed of a piece of wire bent upon itself to constitute parallel arms with prongs, with other novel features, the invention being an improvement on a former patented invention of the same inventor.

## Miscellaneous.

**WAGON JACK.**—A. J. Oliver and R. M. Wren, Oakland, Cal. Combined with a standard having three walls stiffened by web pieces, with two rows of hook-shaped teeth projecting from its front

face in opposite pairs, is a bracket frame to which are attached sleeves adapted to slide on the standards, a forked lever, a cross bar, and two pivoted parallel links loosely connected to the ends of the fork lever, with a dog which can be made to mesh with two opposite teeth of the standard, the construction being simple, strong and efficient.

**FAMILY BIBLE CABINET.**—John Melville, Connelleville, Pa. This is a combined case and book holder movable vertically therein, with latches pivoted to the holder, whereby they may be turned laterally to engage the case when the holder is elevated, with other novel features, whereby such a book may be well preserved and readily adjusted for convenient examination.

**FOLDING BED.**—Fredrick Bennett, New York City. In this bed the bed bottom is hinged to a vertical stationary frame with rigid arms on its lower edge, in combination with intermediate sections, to which are hinged a head rail with weight levers and links, the head rail being attached to the mattress and supported loosely at its ends, the mattress being drawn taut and held from yielding when the bed bottom is wholly lowered.

**WINDOW SHADE FIXTURE.**—Abraham B. Dunkle, Steelton, Pa. This is an improved form of roller carrying brackets adapted to fold when not in use, combined with an independent strip to which they may be attached without resorting to the ordinary means of securing them, whereby the brackets are supported without direct attachment to the window frame, and may be readily placed in position for use.

**LINIMENT.**—Stephen J. Lancaster, Petrolia, Ontario, Canada. This is a new composition of matter for the treatment of sciatica, neuralgia, gout, inflammatory rheumatism, and similar diseases, the composition including a tincture in alcohol of capsicum, Prince's pine, camphor gum, and other ingredients, combined and applied in a manner specified.

**TIME LOCK.**—Charles F. Myers, McKinstry's Mills, Md. This is a lock for the doors of safes, vaults, etc., and specifically provides for the accidental derangement of the time mechanism by having two sets of mechanism operating in unison or independently of each other, providing for automatic unlocking when it has been accidentally allowed to run down, and in the event of the breaking of the main-spring or other operative part.

**COIN-RELEASED TELEPHONE LOCK.**—Harry L. Cassard, Baltimore, Md. This is a lock by which the suspension hook for the receiver is held from upward movement to complete the telephone circuit, but will be released by the aid of an inserted coin, the apparatus being especially designed for application in telephone stations where the proprietor desires to collect tolls from outside parties using the telephone.

**GALVANIC BATTERIES.**—Edward M. Burt, Paris, Ill. This invention provides an inexpensive and effective exciting solution for galvanic batteries, formed by dissolving the salts produced by the burning of cobs of Indian corn, the battery being prepared after a manner specified.

**OXIDIZING OR DESULPHURIZING ORE.**—Edwin M. Clark, Butte City, Montana. This invention provides for forcing a large supply of air into the furnace containing the ore, for which a novel form of furnace is provided, thus hastening combustion and desulphurization, instead of first roasting the ore for a longer time to consume or destroy the sulphur.

**HOLDING CARBON PAPER FOR COPYING.**—William H. Pardee, Antigo, Wis. This is a combined surface plate and carbon paper holder, adapted to be used by slipping it in between the leaves of a copying book, writing pad or tablet, to give a smooth writing support, and also serve as a carrier and holder of the carbon paper.

**TABLET OR BOOK HOLDER.**—This is a novel form of slip holder for tablets or books, patented by the same inventor, adapted to hold the back and one corner of the tablet or book within it, and designed for use as an appendage to a desk or table, or as a flexible book cover for binding purposes.

**RIBBON SPOOL FOR TYPE WRITERS.**—William L. Salvage, Chattanooga, Tenn. This invention provides for the quick and cleanly substitution of ribbon spools in all machines using ribbons, the spool shaft being held in place by a pivoted spring and a stop limiting its endwise movement, thus largely economizing time and facilitating the changes where a large variety of work is done.

**ARTIFICIAL LIMB.**—Alexander Gault, Medford, Minn. This invention relates especially to the construction of the foot and ankle, all ankle machinery and heel and toe cords being dispensed with, and means provided whereby felt may be employed in forming the foot, and the toe be held at all times in position to contact naturally with the ground.

**COLLAR AND CUFF BOX.**—Theodore Springmeyer, New York City. This box has a central tubular cuff receptacle, an annular collar receptacle, and a small pocket or covered well secured centrally to the cover, forming a convenient receptacle for small articles of jewelry, such as buttons, studs, etc.

**SHOW AND SALE CASE.**—Edwin A. Angell, Boston, Mass. The casing has opposite doors at or near its bottom, with a partition pivoted at one side of its center, whereby it is adapted to be held inclined from front to rear or from rear to front, and having also an extensible leaf, the case being designed for the use of grocers, seedsmen, etc.

**FUMIGATOR.**—Albert R. Bowker and James D. Millen, Winona, Minn. This is a hollow cylinder provided with a fire box and grate, with a chemical box above the fire box to sprinkle chemicals upon the fire, and a piston to force the smoke through an opening in the cylinder, the device being operated by suitable handles to fumigate a building or an animal burrow.

**SAD IRON.**—Christian Fox, Christiana, Pa. This is an iron in which the handle is made

detachable, the body of the iron being either hollow or solid, and the handle being reversible with respect to the ends of the body, simple catch devices facilitating the expeditious attachment or detachment of the handle.

**CANDLESTICK.**—George Gavin and Lawrence W. Cromer, Eureka, Nevada. Combined with a base pan are two spring wires secured, and having curved overlapping central parts at a proper distance above the base for holding the candle, forming an extremely simple and inexpensive device.

**DOUBLE BAG.**—Charles McCaffrey and Charles W. Biglow, New York City. This is a bag in which the outer portion is formed of textile fabric and the inner portion of paper, the inner portion being slightly larger, whereby the strain upon the inner bag will be taken up by the outer bag, the combined device being adapted for carrying ground plaster, phosphates, etc.

**GATE.**—James H. Slater, Hart, Mich. This is a gate especially designed for simplicity of construction and cheapness of material used, and adapted to be quickly and conveniently adjusted for height to avoid snow and ice, while its hinge connections permit it to fold flat against a fence in opposite directions, the gate being more particularly designed for guarding railroads and farm inclosures.

**DRAIN FOR STALLS.**—Martin Logan, New York City. Combined with the longitudinal slats of the stall floor, with suitable drains between the slats and a cross drain in the rear, are cleats in the rear of and parallel with the cross drain, with a locking bar fitting between the cleats and the slats of the stall floor, to cover the cross drain and hold the slats in position, making a simple drain that will not easily become clogged and can readily be cleaned.

**FOUNTAIN FOR WATERING STOCK.**—Alphonse Friedrich, Baldwin, N. Y. This is more especially designed for a poultry yard, the reservoir having a drip pipe which discharges into a main pipe laid underground in an inclined position, while branch pipes extend vertically therefrom to cups held above ground, whereby it is designed to keep the water cool and fresh in summer and prevent it from freezing in winter.

**CRATE.**—George T. Hall, Monrovia, Cal. This is styled the "California berry crate," and has solid ends, to the inner sides of which transverse strips are secured, and partitions secured to the strips, the partitions consisting of a rigid section and a hinged section, the latter being movable back upon the rigid section, whereby access may be had to the lower portion of the crate, while the sections cannot be removed and displaced.

## SCIENTIFIC AMERICAN BUILDING EDITION.

MAY NUMBER.—(No. 55.)

## TABLE OF CONTENTS.

1. Elegant plate in colors representing a tasteful cottage of moderate cost at Buffalo, N. Y. Perspective elevation, floor plans, sheet of details, etc.
2. Colored view of a residence at St. George, Staten Island, N. Y. Estimated cost \$20,000. Floor plans, perspective elevation, sheet of details, etc.
3. Stone residence, corner of St. Nicholas Place and 150th Street, New York city. S. Burrage Reed, architect.
4. New buildings at Eastgate and Bridge Streets, Chester.
5. Engravings of the residence of J. M. Johnson, Binghamton, N. Y. Perspective elevations and floor plans. Cost \$19,000 complete.
6. Perspective view of the office buildings of the Gotthard Railroad in Lucerne.
7. An English cottage. Perspective and floor plans.
8. A cottage recently erected at Binghamton, N. Y., cost complete \$3,800. Plans and perspective.
9. A residence in the Gothic style erected at New Brighton, S. I. Floor plans and perspective.
10. Excellent design of a country house recently erected at Belle Haven, Conn. Cost \$14,250. Oscar S. Teale of New York, architect. Perspective views and floor plans.
11. A double dwelling at Yonkers, N. Y., erected at a cost of \$8,000. Plans and perspective.
12. Residence of Chas. Kappes, Esq., at Stapleton Staten Island, N. Y. Cost complete \$4,000. Perspective elevation and floor plans.
13. Cottage at Greenwich, Conn., erected at a cost of \$7,250 complete. Floor plans and perspective.
14. Miscellaneous Contents: High buildings.—Bad fuses.—Imitation ebony.—Destruction of asphalt pavement by gas.—Art of building.—Improved dumb waiters, illustrated.—An improved skylight, illustrated.—Rogers miter planer, illustrated.—Dumb waiters and hand power elevators.—A fine window in the Convent of the Sacred Heart, illustrated.—Improved sash pulleys, illustrated.—A hot air and hot water heater, illustrated.—Colors for mortar.—Improved adjustable grooving head, illustrated.—An improved window screen frame, illustrated.

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## Notes &amp; Queries

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References to former articles or answers should give date of paper and page or number of question.  
Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and though we endeavor to reply to all, either by letter or in this department, each must take his turn.  
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Books referred to promptly supplied on receipt of price.  
Minerals sent for examination should be distinctly marked or labeled.

(2259) J. W. asks how to prepare an ink for the automatic shading pen. A. Use solution of gum arabic of proper thickness colored with aniline colors. Add just enough oil of cloves to give a perceptible odor, to prevent moulding.

(2260) C. C. writes: In making bichromate batteries for running small lamps for armatures, would it make any difference if the cells were larger, say about a quart, provided we use a less number of cells? How are batteries compared with one another in strength. Is it by the area of zinc used, supposing the solutions to be both the same? I would like to have directions for making something to attach to an electric bell so that it will not ring more than five seconds when the button is being pushed, and which will release when the button is let go. About how many ohms resistance are common electric bells wound? A. It is necessary to have a number of battery cells to secure the required voltage. The strength of the current increases with the size of the plates, the pressure or voltage with the number of cells. A dash pot arrangement might do for your push button. Bell magnets run from 5 to 20 ohms resistance.

(2261) W. P. S. asks: What will take away the bad smell from the water in a cistern without making it unfit for washing purposes? A. Possibly suspending a bag full of charcoal in it may answer. A little permanganate of potash may do good. In this case, if enough is added to produce a pink color, it will stain the clothes.

(2262) F. L. M. asks: What pressure must be applied to air to raise the temperature from 50° Fah. to 100° Fah.? A. 13793 atmospheres. This is on basis of adiabatic compression, there being assumed to be no loss of heat. The rule is that the temperatures referred to the absolute zero are in proportion to the 0.2907 power of the pressures. It must be calculated by logarithms.