

RECENTLY PATENTED INVENTIONS.

Engineering.

GAS OR OIL ENGINE—Frank S. Mead, Montreal, Canada. This engine has an air compression chamber and a connection from the working cylinder thereto, there being an independent connection from the working cylinder to the oil supply tank and a third connection from the compression chamber to the oil supply tank, the explosive mixture being properly prepared and delivered to the working cylinder in such condition and manner as to secure the best results both as to the efficiency and economy of the engine.

FUEL LOADER FOR ENGINE TENDERS.—John K. McKinnon, White Oak, Ga. This apparatus comprises a platform which supports a vertical rotary shaft carrying radial arms to the ends of which are secured a longitudinally curved band, hangers depending from the arms and a carrier being pivotally connected between each pair of hangers, there being means for automatically locking the hangers and the carrier. The wood or other fuel is placed in the carriers before the arrival of a train, and when the tender is in front of the platform the shaft is rotated to bring the fuel carriers over the tender, the carriers being then discharged by pulling on a cord or wire. The improvement may also be employed in wood or coal yards, or for loading boats, etc.

ROCK DRILL.—Warren Wood, Paterson, N. J. An improved head for rock drills is provided by this invention, according to which the steam packing is placed at the base of the head or close to its connection with the steam cylinder, that any lateral pressure on the drill rod or piston rod will have no perceptible effect on the packing, preventing the escape of any portion of the motive agent and prolonging the usefulness of the drill head. When the drill is placed at an acute angle it is frequently the case that a new stuffing box or gland will have to be often supplied—a difficulty which this invention is designed to overcome.

Mechanical.

BEARING BLOCK FOR SCREW SHAFTS.—Richard M. Melhuish, London, England. In bearings for feed screw shafts for sewing machines, line engraving machines, etc., this inventor has devised an improvement designed to prevent shaking or jarring of the feed screw, to enable slack to be taken up, and to insure such motion of the feed screw shaft as will prevent liability of its overrunning its actuating gear by its acquired momentum. In combination with the screw shaft is a nut comprising a metal portion and a yielding portion, capable of being softened by a liquid without destroying its integrity, the two portions being held longitudinally together, and a clamp plate engaging the outer side of the yielding portion. The feed nut is of peculiar construction and is formed one-half of metal and the other half of gutta percha, leather, wood, horn, etc.

MACHINERY FOR MAKING SLABS OF PLASTER, CEMENT, ETC.—Richard W. Hitchins, London, England. This machine comprises a supporting table, pairs of pressing rollers and endless bands between which the plastic material passes, a hopper in which rotary arms stir the material and feed it to the bands, and a rotary cutter for cutting the material into lengths. The machine is designed to produce slabs of plaster, cement or composition for making ceilings or facing walls, a strengthening web or fabric being attached upon either or both of the surfaces of the layer, which is cut into lengths as fast as produced.

WIRE BELT LACING.—John Gregory, Newark, N. J. This invention provides a metal lacing consisting of a wire passed through the belt at the end, and carried beyond the end to form a series of aligned eyes, the arrangement of the strands being similar to the thread of a screw, while a binding of corresponding form is secured to the belt and carried between the members of the wire lacing and over to an engagement with the ends of the belt. The improvement is especially adapted for use with woven belts, the lacing not drawing from one web of the belt, but its strain being distributed over a larger area of the belt than ordinarily, effectually preventing unraveling of the ends of the belt.

Agricultural.

PLOW.—Antoine Cayatte, Baudonvillers, France. This invention relates to wheelless plows, called Belgian plows, the improvement enabling a single person to hold several plows at the same time. A pivot pin is mounted to swing on the stanchion and connected with the plowbeam, a screw being universally mounted on the stanchion and a block adjustable longitudinally on the screw and transversely on the plow beam.

Miscellaneous.

BICYCLE HANDLE.—Peter C. Peterson, Alexander Valley, Cal. This inventor has devised a handle which may be readily removed from the handle bar, or which may be automatically locked to the bar in such manner as to render the parts virtually integral. Near the end of the tubular handle bar is a partly returned slot, and the hollow handle has an inward bearing surface and carries a straight spring, while a rod projecting into the handle proper is capable of entering the slot in the handle bar, the spring having its ends bearing against the handle bar to hold the rod in the slot, and being flexed around the bearing surface as the rod is placed and displaced in the slot.

TIRE REPAIRING TOOL.—Frank H. Myer, Denver, Col. This invention provides a small, partially compressible reservoir, adapted to contain a liquid cement, the latter being forced out by pressure through a straight tubular outlet, movable in which is a needle shank. The needle point is bulb-shaped, and when not in use is inclosed by a cover. The point is forced through a puncture to the interior of the tire, and then the liquid cement is forced in around the needle shank, to spread around the head of the needle in ring form, a certain amount of the cementing material being drawn into the puncture as the tool is withdrawn.

WALLING EXCAVATIONS.—William C. Thomas, Fountain, Kansas. For walling wells, cisterns,

root pits, slos, etc., according to this invention, a frame is provided to rest on the ground at the upper end of the pit, a windlass carrying a ratchet wheel rotating in the frame, while three ropes extend from the windlass to connections with a platform on which a gage frame is removably mounted. The device may be raised and lowered in a pit to form a gage around which a wall may be built, the platform supporting the workmen and the loose material.

BARREL FILLING APPARATUS.—Joseph E. J. Goodlett, No. 181 Tennessee Street, Memphis, Tenn. In fillers for liquid receptacles having a valve attachment to automatically cut off the flow when a receptacle is filled to the required limit, this inventor has devised an improvement comprising a tube, goose-neck, valve float, float rod, pivoted trigger and valve lever, in combination with a compound float lever formed of two parts pivoted together and pivoted separately at fixed points, one part being connected with the float rod and the other having a shoulder that engages the trigger. When this apparatus is used in a barrel a vacant space may be left over the liquid as desired.

GAS MANUFACTURING.—Augustus S. Cooper, Santa Barbara, Cal. This inventor has devised an apparatus for manufacturing illuminating and other gas from crude petroleum, in which the gas is fixed in a short time and the tar and other liquid hydrocarbons are readily separated and discharged by themselves. The apparatus comprises a casing connected with a hydrocarbon vapor supply and in which concentric wire cages are mounted to revolve in opposite directions, the wires being electrically heated to rapidly decompose the vapors. The cages are to be revolved at a very great speed, and it is designed that the operation of decomposing the vapors will be effected in a small fraction of a second.

IMPROVED IRONING TABLE.—Howard Rupert, Carlisle, Cumberland County, Pa., P. O. box 324. This invention provides a simple, inexpensive and durable ironing table, which may be conveniently folded and stored in small space, and which, when set up for use, has a convenient support for holding the articles ironed. The board has a tapering end, which rests on a trestle, and at its other end is a hinged leg, whose inclination may be varied to raise or lower this end of the table. A wire frame covered by canvas is removably held low down inside the table legs to form a support for the clothes, and on the top of the ironing board, at one end, is held a curved sleeve board, which may be reversed to bring either edge on top, to facilitate the proper ironing of sleeves or other garments.

HARNESS ATTACHMENT.—Joseph M. Tilman, Evansville, Ind. This attachment enables the driver to check up or loosen the check rein without leaving the vehicle. It consists of a fixture secured to the saddle, and having an opening in which is a spring and a plunger, the latter being adapted for attachment to the check rein. The driver, in adjusting the check rein as desired, uses a rod which is adapted to be hooked into a handle ring of the attachment. The device may be applied to any form of harness.

WAGON END GATE.—Charles Schalles, Cortez, Col. According to this invention bearing plates embrace the ends and top of the sideboards, links being connected with the plates and brackets projected from them, while the end board has a rocking lock bar journaled in the brackets, the lock bar terminating at its ends in crank arms arranged to receive the links. The end plate may be quickly put in place or removed from the wagon body, and when the end gate is locked in position its bottom and ends fit snugly to the bottom and sides of the wagon body.

SEWING MACHINE QUILTER.—George A. Tressler, Americus, Kansas. To enable an ordinary sewing machine to be used for quilting, this invention provides an attachment in which a carriage movable on guide tracks carries feed rollers and a take up roller, gearing connecting an endless belt with the sewing machine, while a clutch mechanism carried by the carriage engages the belt. When started, the carriage with the quilt are automatically carried forward to the completion of one row of stitches, after which the carriage is moved back to its starting point, and the sewing machine may be moved in or out before starting on another row of stitching.

RUG FASTENER.—Isabel N. Veal, Howard, Col. For removably securing a rug to a carpet, so that the edges of the rug will not be liable to be turned up, this inventor employs a fastener consisting of a staple or double pointed pin, in which the loop or portion joining the two shanks is bent forward over the shanks, in connection with a rug engaging device consisting of a separable hook having two bends, one of which engages the loop of the staple while the other has sharpened points to engage the rug.

PICTURE EXHIBITOR.—George W. Brown, Colorado Springs, Col. This is a device for use in connection with a phonograph in such way that the parts whereon the pictures are mounted may be moved to cause the pictures to pass successively across a sight opening by the movement of the motor of the phonograph. The invention comprises a casing to be used in connection with a phonograph, movable picture carrying parts being arranged in the casing and carrying pictures, while there are means for illuminating the pictures and gearing for driving either of the parts from the motor, whereby either of the parts may be driven while the other is held stationary.

PORTABLE FIRE ESCAPE.—Spencer F. Brown, Lake Linden, Mich. This fire escape comprises a truck on which is mounted a ladder adapted to be swung into vertical and horizontal positions, arms having pivotal connection with the ladder and slotted brace arms having pivotal connection with its upper portion, while a rod connects the first arms and passes through the slots in the brace arms. The truck carries a series of ladders which may be quickly elevated or placed in desired position on arriving at the scene of a fire, or compactly folded to take up but little space.

NAME PLATE FOR UMBRELLA CLOSING BANDS.—John Hasselbring, Brooklyn, N. Y. This device consists of a bottom plate secured to the socket member of an ordinary glove fastener, and in a convex

name plate secured to the bottom plate and inclosing the socket of the fastener. It is designed for the embellishment of the closing band of the umbrella, improving its appearance, and at the same time forming an identifying mark for the owner.

COMB BACK.—John Walton, Philadelphia, Pa. This invention provides a metal comb back for a comb to be anchored to a cord or chain and suspended in toilet rooms or public dressing rooms. It is made of a single piece of tubular metal having in its upper edge two parallel and longitudinal slits, with the metal between raised above the level of the rest of the back to form an anchorage loop.

SAFETY POCKET.—Edward H. Burger, Duluth, Minn. Against the inner side of a vest pocket, according to this invention, is secured a face plate, and in the front wall of the pocket is secured a frame plate with a rubber binding piece from which project flexible teeth. The device is designed to securely hold in place pencils, penholders and other articles, no matter what position the wearer may take, the device holding a partly used pencil within convenient reach, instead of its being at the bottom of the pocket.

Designs.

TROUSERS HANGER.—Ward Evans, Washington, D. C. This article is made of a single piece of bent wire, and has hooklike or loop portions extending laterally at right angles from a shank portion which terminates in a coil.

LADY'S BELT.—Louis Sanders, Brooklyn, N. Y. In this belt the upper and lower lines are inclined downward from the sides to the front and rear, the lines meeting at an obtuse angle and forming a point at the front and at the rear. There is also a buckle at each side, near the front of the belt.

BELT BUCKLE.—John Mehle, Jr., Jersey City, N. J. The rear ends of the side members of this buckle are bent downward, forming ears in which is supported the bar carrying the tongue, and the outer edge of the buckle is formed with a beaklike design.

BOTTLE.—William H. Cropper, Wellsburg, West Va. This design is intended to afford a combination of curved surfaces which will give a beautiful effect, and also provide a bottle of such shape that it will be less liable to breakage.

DRIP CUP.—Aaron N. Dukes, Peru, Ind. This cup has an approximately oval-shaped body, from opposite sides of which are upwardly projecting arms on the ends of which are lugs.

HOOD FOR STEREOSCOPES.—Herbert S. Walbridge, North Bennington, Vt. This hood is elliptical in form, and has at its front a lens frame, the lines of the edge of the hood being in curves. At the bottom of the hood is a bridge piece of inverted V shape, presenting a division wall between the lenses.

NOTE.—Copies of any of the above patents will be furnished by Munn & Co. for 10 cents each. Please send name of the patentee, title of invention, and date of this paper.

Notes & Queries

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters or no attention will be paid thereto. This is for our information and not for publication. **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. **Buyers** wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same. **Special Written Information** on matters of personal rather than general interest cannot be expected without remuneration. **Scientific American Supplements** referred to may be had at the office. Price 10 cents each. **Books** referred to promptly supplied on receipt of price. **Minerals** sent for examination should be distinctly marked or labeled.

(7161) F. C. S. asks: Will you kindly let me know what are the principal mixtures of washing compounds? A. 1. The so-called English washing crystal is an impure, half efflorescent crystallized soda, containing a large proportion of sulphate of soda and common salt. 2. Under the name of washing crystals simply a filtered solution of borax and soda has been introduced. 3. The English patent cleansing crystal washing powder is a half efflorescent soda, containing about 25 per cent of Glauber's salts. 4. The washing and cleansing crystals are pure crystallized soda, with 1 to 2 per cent borax. 5. Krimmelbein's wool washing composition is a mixture of 35 parts of dried soda, 10 parts of soap powder, and 10 parts of sal ammoniac. 6. Ward's wool washer is a mixture of 90 parts of efflorescent soda crystals with 10 parts of soap powder. 7. The universal washing powder (Henkel's) is a water glass containing soda, with a small percentage of tallow soap and starch powder. 8. Hudson's soap extract is a mixture of crystallized soda and soda soap, containing water (soap 14.3, anhydrous soda 30, and water 55). 9. A washing powder for the finest white linen is a powdery mixture of 90 parts of efflorescent soda with 10 parts of hyposulphite of soda and 2 parts of borax.

(7162) J. B. B. asks: I have an eight light 16 candle power 110 volt dynamo, but by using 52 volt 16 candle power lamps I can light 16. If it will light sixteen 52 volt lamps, will it light the same number of 110 volt lamps? Of course, I run the 52 volt lamps in multiples of two. Kindly give me information on this point. A. You are undoubtedly running your dynamo rather too hard with the 52 volt amps of its rating is on a very conservative basis. You cannot, we think, substitute one 110 volt lamp for two 52 volt lamps, on account of the extra six volts.

Business and Personal.

The charge for insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in the following week's issue.

Marine Iron Works. Chicago. Catalogue free.
"U. S." Metal Polish. Indianapolis. Samples free.
Yankee Notions. Waterbury Button Co., Waterbury, Ct.
Handle & Spoke Mch. Ober Lathe Co., Chagrin Falls, O.
For bridge erecting engines. J. S. Mundy, Newark, N. J.
Folding Umbrellas. Write Grove & Stover, Turay, Va.
For Sale.—Foreign Patents, Anderson Typewriter. See page 325.

Try us for your wire or sheet metal specialties. The Enterprise Manufacturing Co., Akron, Ohio.

Improved Bicycle Machinery of every description. The Garvin Machine Co., Spring and Varick Sts., N. Y.

Concrete Houses—cheaper than brick, superior to stone. "Ransome," 757 Monadnock Block, Chicago.

Order brass letters for sweating on metal patterns of H. W. Knight & Son, Seneca Falls, N. Y. Drawer 1115.

Machinery manufacturers, attention! Concrete and mortar mixing mills. Exclusive rights for sale. "Ransome," 757 Monadnock Block, Chicago.

The celebrated "Horusby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Refrigerating Machine Company. Foot of East 138th Street, New York.

The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, \$4. Munn & Co., publishers, 361 Broadway, N. Y.

The Norwich Line. Direct route New York to Worcester, Nashua, Portland, and points north and east. Leaves Pier 40, North River, 5:30 p. m. Week days only.

Invest Some Money Very Profitably. Nothing better as a speculation or investment than shares in Copper King of Arizona, Treasurer 90 Nassau St., New York. Write for particulars. Best references.

Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway, New York. Free on application.

NEW BOOKS, ETC.

MANUAL OF ASSAYING. By Walter Lee Brown. Sixth edition. Chicago: E. H. Sargent & Company. Pp. 533. Price \$2.50.

This book treats of the assaying only of gold, silver, lead, and copper, but in these specialties it has long been considered a standard authority. Its methods are exact, its descriptions full and accompanied by ample illustration. The book is well fitted for the education of a beginner in assaying, and is yet an up-to-date volume for the practical assayer.

COLLIERY SURVEYING. By T. A. O'Donahue, M. E. New York and London: Macmillan & Company. Pp. 163. Price 80 cents.

A first class certificated colliery manager presents in this little volume a condensed text book for the use of students and of those who desire to become colliery managers. A diligent study of the book is designed to enable one to pass examination as a colliery surveyor, and questions for such examinations are appended.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

MAY 11, 1897,

AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

Acid apparatus for concentrating sulfuric, T. G. Ebb.	582,239
Agricultural engine, electrically propelled, H. Schimpff.	582,237
Air brake, W. G. Gunckel.	582,301
Album and album support, G. Schwab.	582,549
Amalgamator, Baudendistie & Dingley.	582,521
Artificial curve plate, A. D. Withereil.	582,594
Apparel support, wearing, M. B. Parry.	582,312
Armature for dynamo electric machines, E. P. Clark.	582,269
Automatic switch, J. A. & W. H. Mounce.	582,538
Awning, window, C. Grath.	582,199
Axle box, car, Lawrence & Tarter.	582,534
Bag. See Coal or other bag.	
Baling press, J. Wisman.	582,463
Barn frame, R. S. McPheeters.	582,543
Barrel, C. Wittkowsky.	582,250
Barrel washer, F. E. Anderson.	582,163
Barrel washer, Buhman & Meiser.	582,263
Baskets, manufacture of, E. Redman.	582,223
Basket for bicycles, folding, S. J. Reynolds.	582,229
Bearing and journal box, roller, W. E. Paige.	582,310
Bearing, ball, W. Diebel.	582,123
Bearing for bicycle wheels roller, A. C. Brownell.	582,280
Bearing, roller, W. J. Dismukes.	582,521
Bearing, roller, A. C. Brownell.	582,519
Belt, skirt supporting, C. R. Stone.	582,242
Bicycle, J. A. Anderson.	582,586
Bicycle, M. Quinn.	582,315
Bicycle attachment, A. Zintgraf.	582,334
Bicycle brake, J. H. Bullard.	582,600
Bicycle controller, W. D. Gould.	582,279
Bicycle crank fastening, S. W. Hyatt.	582,530
Bicycle handle shade, R. A. Wade.	582,447
Bicycle luggage carrier, L. Buckley.	582,173
Bicycle pedal, J. H. Kirshaw.	582,232
Bicycle propelling mechanism, J. Bernal.	582,346
Bicycle saddle, C. J. Bernasco.	582,255
Bicycle saddle support, O. Seely.	582,607
Bicycle shade, J. Brown.	582,170
Bit. See Bridle bit.	
Bit stock, S. B. Davis.	582,413
Blast pipe furnace, center, C. Johnson.	582,503
Blower, steam, H. E. Parson.	582,453
Boiler. See Steam boiler. Water tube boiler.	
Boiler, C. R. Moore.	582,216
Bootjack, J. Pendergast.	582,484
Boot or shoe nailing machine, S. M. Cutter.	582,579
Bottle, A. Fishmann.	582,348
Bottle, F. A. Lenox.	582,212
Bottle, E. G. Tebbutt.	582,380
Bottle, muilage, I. H. Bricker.	582,576
Bottle stopper, F. S. Perrin.	582,433
Bottle stopper, S. Twitchell.	582,446
Bottle washer, E. Kersten.	582,506
Bottles, device for preventing refilling of, S. A. Saege.	582,235
Bottling apparatus, liquid, Henes & Keller.	582,235
Box. See Letter box. Oilstone box.	
Box fastener, J. Ehler.	582,606
Box making machine, J. Mohs.	582,239
Brading machine takeoff, M. M. Nicholas.	582,304
Brake. See Air brake. Bicycle brake. Car brake. Vehicle brake.	
Bread raiser, S. R. Quimby.	582,373
Breech mechanism, gas vented, G. Gerdorn.	582,469
Bridle, E. Lane.	582,533
Bridle bit, G. W. LeCompte.	582,535
Broiler, E. R. Cahoon.	582,174
Broom head, S. H. Williams.	582,249
Brush, G. L. Eastman.	582,190
Brush, M. Leiner.	582,478